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Self-referred personal behavior profile of university professors: association with communicative and vocal self-evaluation

Perfil de comportamento pessoal autorreferido por professores universitários: associação com a autoavaliação comunicativa e vocal

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Keywords

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ABSTRACT

Purpose: Describe the self-referred personal behavior profiles of university professors and verify the association of these profiles with the self-assessment of communicative aspects and vocal symptoms. **Methods:** Study conducted with 334 professors at a public university who responded to an online questionnaire regarding voice use in teaching practice. Personal behavior profile classification was the response variable, which was divided into four types: pragmatic, analytical, expressive and affable. Explanatory variables were vocal self-perception, vocal resources, and communicative aspects. Descriptive data analysis was performed with application of the Pearson's Chi-squared and Fisher's Exact tests. **Results:** University professors identified themselves more with the affable and expressive personal behavior profiles. Overall, professors presented good self-perception about vocal and communicative aspects, in addition to having reported few vocal symptoms. Profiles differed for some of the assessed variables, namely, pragmatic professors reported high speech velocity and sporadic eye contact; expressive professors demonstrated self-perception about their voice and strong voice intensity; those in the analytical profile self-reported negative perception about vocal quality, weak voice intensity, poor articulation and rapid speaking rate; the other professors mostly reported voice tiredness symptoms and difficulty projecting the voice. **Conclusion:** University professors identify themselves mostly with the affable and expressive profiles. Self-perception analysis of the personal behavior profile in university professors showed the influence of self-reported personality characteristics on communicative skills in the classroom.

Descritores

Voz
Comunicação
Docentes
Comunicação Não Verbal
Personalidade.

RESUMO

Objetivo: Descrever o perfil de comportamento pessoal autorreferido por professores universitários, e verificar a associação destes perfis com a autoavaliação dos aspectos comunicativos e sintomas vocais. **Método:** Estudo realizado com 334 professores de uma universidade pública que responderam um questionário *online* referente ao uso da voz na docência. A variável resposta foi a classificação do perfil de comportamento pessoal, identificado em quatro tipos: pragmático, analítico, expressivo e afável, e as variáveis explicativas foram: autopercepção vocal, recursos vocais e aspectos comunicativos. Foi realizada a análise descritiva dos dados, além dos testes Quiquadrado de Pearson e Exato de Fisher. **Resultados:** Os professores universitários se identificaram mais com os perfis de comportamento pessoal afável e expressivo. De forma geral, os docentes demonstraram boa autopercepção dos aspectos vocais e comunicativos, além de terem relatado poucos sintomas vocais. Os perfis se diferenciaram em algumas variáveis estudadas: o pragmático relatou velocidade de fala rápida e, às vezes, realizar contato de olhos; o expressivo demonstrou autopercepção positiva de sua voz e intensidade forte. Professores com perfil analítico autorreferiram percepção negativa da qualidade vocal, intensidade fraca, articulação ruim e velocidade de fala rápida e, entre os demais perfis, foi o que mais relatou sintomas de cansaço na voz e dificuldade para projetar a voz. **Conclusão:** Professores universitários se identificam predominantemente com os perfis afável e expressivo. A análise da autopercepção do perfil de comportamento pessoal em professores universitários mostra a influência das características da personalidade autorreferidas sobre as habilidades comunicativas em sala de aula.

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INTRODUCTION

Human communication is a social instrument that allows people to interact, understand and share ideas with each other[1]. This phenomenon involves voice, speech and body, verbal and nonverbal elements that are essential for discourse credibility[2,3].

Oral communication is a didactic work instrument in teaching. It offers information, increases students' interest, helps memorizing contents, strengthens the teaching – learning process and ensures the reliability of what is being said when it is well-applied and integrated[2-5].

Specific communicative skills used during a class include adequate voice use (vocal quality, tone and volume), speech (its articulation and speed), prosodic resources (speaking rate) and body resources (gestures, facial expressions, posture). These skills promote discursive interactions between professor and student when they are combined to each other[2-4,6]. Accordingly, we assume that professors' personal behavior can influence the use of certain vocal, speech and corporal resources.

The personal behavior profile is determined by the way people behave to the detriment of their internal particularities[7,8]. Individual personality-related behavior assessments originated in the Psychology field; they have been used to study interaction in communication and relations between work teams, professors and students[8-10].

A number of personality studies are built upon a basic model composed of four quadrants, each one of them represents a "type" of personality, according to which people notice and are affected by interpersonal behavior[7-11].

The pragmatic, analytical, expressive and affable profiles are the four most referenced types of personal behavior[7,8,10]. According to this theory, there is no ideal profile, since each person is different; even if a profile stands out in an individual, the other profiles articulate themselves in it based depending on the situation[7].

Most research about professors' voice focus voice health, but studies on professors' communicative skills are slowly starting to advance[1,4,5,12]. The interest in assessing professors' personal behavior comes from the fact that personality influences vocal production[13]; moreover, this process is observed in the teaching process and in social interactions in classroom environment. Many research on personality traits and voice focus vocal disorders[13-18]. There are not researches focused on communicative profile influence on communicative skills and on the presence of vocal symptoms.

Individual particularities can have positive or negative influence on communicative skills; assumingly, understanding the relation among behavior profile, communicative aspects - with emphasis on vocal resources - and vocal symptoms presented by professors allow broadening knowledge about voice use in teaching practices. Results in the current study may contribute to Speech-language clinical practices related to communicative competence and to professors' voice use when the behavior profile is taken into account.

Therefore, the aims of current research were to describe the self-refered personal behavior profile of university professors and to verify the relation between these profiles and the self-assessment of communicative aspects and vocal symptoms.

METHODS

The current research is a cross-sectional observational study, approved by the Ethics Committee, document number 1.682.496/16. Professors from different units from a federal public university participated in the research. According to the Pro Rectory of Human Resources, the university has 2,925 professors distributed into eight research fields: Agrarian Sciences, Biological Sciences, Health Sciences, Exact and Earth Sciences, Human Sciences, Applied Human Sciences, Engineering and Linguistics, Letters and Arts.

Sample calculation took into account minimal event prevalence of 20% and stratification according to research field. Sample margin error was set at 5% and significant was determined at 5% level. Based on these sample characteristics, the stymied sample counted on at least 236 active professors working in the aforementioned university.

The sample included 334 professors distributed according to sample stratification in the following research field: 15 from Agrarian Sciences, 19 from Biological Sciences, 83 from Health Sciences, 31 from Exact and Earth Sciences, 47 from Human Sciences, 31 from Applied Human Sciences, 18 from Engineering, 34 from Linguistics, Letters and Arts; and 56 from more than one field. Mean age was 46 years (standard deviation ±10.2); 201 were women (60.2%) and 133 were men (39.8%); mean teaching experience of 17 years. Most participants work exclusively in the university (91%; n = 304); they teach classes with 39 students, on average (±31.5).

Inclusion criteria were to be a faculty member and to be teaching in classroom environment. Professors graduated in Speech Language Pathology and Audiology, or the ones who were not effectively teaching or who were removed from their activity during the data collection period were excluded from the research.

After study approval by the Ethics Research Committee, a university department sent an email to all professors, with the Informed Consent Form and the study questionnaire attached to it. Professors who agreed to participate in the study were informed online about the study procedures and were asked to fill out the questionnaire

A questionnaire developed by the researchers was the used data collection instrument; it comprised 55 questions divided into the following topics: socio demographic data, vocal and expressiveness characteristics in communication and work environment. The questionnaire also included a list of vocal signs and symptoms[19]. It was applied online, through Google forms. It was necessary to answer all questions before finishing the form. Data was collected from November 2016 to March 2017.

The current study aimed at assessing the following variables:

1. Self-evaluation of communicative aspects:

a. Vocal resources: self-perception about vocal quality (negative – very bad or bad, or positive – good or very good), voice tone (high, low or adequate), voice intensity (weak, strong or adequate), speech articulation (bad or good), speaking rate (slow, fast or adequate) and rhythm (same or varied cadence) used in the classroom.

b. Communicative aspects: students' attention (always or sometimes), need to repeat what was said (always, sometimes or never), eye contact (always or sometimes).

2. Vocal symptoms: a list of vocal signs and symptoms created by Behlau et al.[19] was used in the research and translated from English[20]. This list has 14 items and aims at identifying the occurrence of vocal signs and symptoms related to voice use at work. However, only seven symptoms were assessed in the current research, since they were the ones mostly reported by the participants - hoarse voice, voice tiredness, difficulty projecting the voice, monotonous voice, effort to speak, dry throat and throat clearing. All variables in this item had 'yes' or 'no' answers.

Behavior profile classification based on the four profile types were the response variables, namely: pragmatic, analytical, expressive and affable profiles. The pragmatic communicator type acts based on reason and concerns rigor, assertiveness, pragmatism and efficiency, it behaves in a realist and practical manner; possesses steady voice tone and imposes gestures; uses little emotiveness and is a bad listener. The analytical communicator acts rationally, but it possesses low assertiveness, is methodic, prudent and systematic; it has steady voice tone and thankful gestures; is a good observer and listener, as well as is seen as demanding and thorough. The expressive profile acts based on emotion; it is eloquent and enthusiastic; has grand gestures, high voice inflexion and good self-esteem; it is spontaneous, funny and many times acts based on intuition. The affable communicator type also acts based on emotions, it is gentle, loyal and sympathetic; possesses soft gestures and low voice inflexion; uses to be a good listener but is seen as naïve, insecure or shy[7,8,10].

Tests and questionnaires to assess personality are used in voice-related studies[13-18]; however, they do not specify specific behavior profiles based on individual personality traits. Other knowledge fields use a scale to identify the four behavior types[8,10], but such scale is a more complex and longer instrument. Therefore, personal behavior profile description was used in the present study to identify profiles and their particular communicative skills in an objective manner. The questionnaire was easy to answer, mainly because it was online. The classification proposal was originally elaborated in Portuguese and the instrument was not validated. One of the questions approached the behavior profile, according to which the participant should choose the profile that better suited it after reading a brief description of each characteristics.

The *Statistical Package for the Social Sciences* Software (SPSS) *Statistics Base*, version 19 was used for data analysis. The descriptive analysis was based on central tendency measurements applied to quantitative variables and frequency distribution (percentage) was applied to categorical variables. Fischer Qui-square and Exact tests, at 5% significant level, were adopted to verify the relation between variables and behavior profiles.

RESULTS

In total, 47 (14.1%) professors identified themselves with the pragmatic profile, 100 (29.9%) of them got identified with the expressive profile; 107 (32.0%), with the affable profile; and 80 (24.0%), with the analytical profile.

Most participants had positive perception about the variables in the self-assessment of behavior profile-related vocal communication and vocal resources (Table 1). Based on the association test, the following self-perception variables differed due to the behavior profiles, namely: vocal quality, voice intensity, speech articulation and speaking rate (Table 1). Based on the results, the pragmatic profile was the one mostly

Table 1. Description of the vocal resources self-perception based on the behavior profile and statistical association (n=334)

Variables	Behavior profile				P Value
	Pragmatic (n=47)	Expressive (n=100)	Affable (n=107)	Analytical (n=80)	
	n(%)	n(%)	n(%)	n(%)	
Self-perception of vocal quality**					
Negative	5 (10.6)	7 (7.0)	12 (11.2)	18 (22.5)	0.045*[1]
Positive	41 (87.2)	91 (91.0)	89 (83.2)	59 (73.8)	
Voice tone					0.822[2]
Too high	2 (4.3)	4 (4.0)	7 (6.5)	7 (8.8)	
Too low	1 (2.1)	5 (5.0)	3 (2.8)	2 (2.5)	
Adequate	44 (93.6)	91 (91.0)	97 (90.7)	71 (88.7)	
Voice intensity					
Weak	4 (8.5)	8 (8.0)	16 (15.0)	18 (22.5)	0.013*[1]
Strong	7 (14.9)	29 (29.0)	19 (17.8)	10 (12.5)	
Adequate	36 (76.6)	63 (63.0)	72 (67.3)	52 (65.0)	
Speech articulation					
Bad	3 (6.4)	2 (2.0)	4 (3.7)	9 (11.3)	0.045*[2]
Good	44 (93.6)	98 (98.0)	103 (96.3)	71 (88.8)	
Speaking rate					
Slow	3 (6.4)	3 (3.0)	5 (4.7)	5 (6.3)	0.048*[2]
Fast	18 (38.3)	31 (31.0)	20 (18.7)	29 (36.3)	
Adequate	26 (55.3)	66 (66.0)	82 (76.6)	46 (57.5)	
Speaking rhythm					
Same cadence	4 (8.5)	13 (13.0)	13 (12.1)	11 (13.8)	0.842[1]
Varied	43 (91.5)	87 (87.0)	94 (87.9)	69 (86.3)	

[1] Pearson Qui-square Test; [2] Fischer Exact Test; * Significant Values (p≤0.05); ** The assessed variable reported abscent data (answer option "don't know"), so the total is different from the final sample

reporting high speaking velocity (38.3%), which was followed by the analytical profile (36.6%). On the other hand, the affable profile was the one mostly reporting adequate speaking rate (76.6%). The expressive profile was the one recording the higher positive self-perception about voice (91.0%) and strong intensity (29.0%) when the four profiles were compared. Individuals identified with the analytical profile recorded the highest negative self-perception about voice, they reported low intensity (22.5%) and bad articulation (11.3%).

Most participants adopted positive attitudes towards self-perception about communicative aspects such as students' attention and eye contact (Table 2). Based on the profiles, only the "eye contact" variable presented statistically significant difference; individuals identified with the pragmatic profile recorded the best results in answering "always" (80.9%) to the questions in the questionnaire (Table 2).

Table 3 shows the self-perception of vocal symptoms when they were compared to behavior profiles. There was statistical significance between voice tiredness and difficulty to project the voice, and the self-referred personal behavior profile. Individuals identified with the analytical profile reported these symptoms more (42.5% and 33.8%, respectively) (Table 3).

Table 2. Description of the communicative aspects self-perception based on the behavior profile and statistical association (n=334)

Variables	Behavior profile				P Value
	Pragmatic (n=47)	Expressive (n=100)	Affable (n=107)	Analytical (n=80)	
	n(%)	n(%)	n(%)	n(%)	
Students' attention					
Always	44 (93.6)	97 (97.0)	102 (95.3)	71 (88.8)	0.136[2]
Sometimes	3 (6.4)	3 (3.0)	5 (4.7)	9 (11.3)	
Need to repeat what was said					
Sometimes	9 (19.1)	13 (13.0)	13 (12.1)	15 (18.8)	0.472[1]
Rarely	38 (80.9)	87 (87.0)	94 (87.9)	65 (81.3)	
Eye contact					
Always	38 (80.9)	95 (95.0)	102 (95.3)	72 (90.0)	0.018*[2]
Sometimes	9 (19.1)	5 (5.0)	5 (4.7)	8 (10.0)	
Communication enhancement for teaching					
Always	32 (68.1)	65 (65.0)	77 (72.0)	60 (75.0)	
Sometimes	12 (25.5)	21 (21.0)	23 (21.5)	16 (20.0)	0.423[2]
Rarely	3 (6.4)	14 (14.0)	7 (6.5)	4 (5.0)	

[1] Pearson Qui-square Test; [2] Fischer Exact Test; * Significant Values (p≤0.05)

Table 3. Description of the vocal symptoms on the behavior profile and statistical association (n=334)

Variables	Behavior profile				P Value
	Pragmatic (n=47)	Expressive(n=100)	Affable (n=107)	Analytical (n=80)	
	n(%)	n(%)	n(%)	n(%)	
Hoarseness					
No	34 (72.3)	77 (77.0)	81 (75.7)	57 (71.3)	0.808[1]
Yes	13 (27.7)	23 (23.0)	26 (24.3)	23 (28.8)	
Voice tiredness					
No	40 (85.1)	79 (79.0)	78 (72.9)	46 (57.5)	0.002*[1]
Yes	7 (14.9)	21 (21.0)	29 (27.1)	34 (42.5)	
Difficulty projecting the voice					0.010*[1]
No	41 (87.2)	84 (84.0)	86 (80.4)	53 (66.3)	
Yes	6 (12.8)	16 (16.0)	21 (19.6)	27 (33.8)	
Monotone voice					0.382[2]
No	44 (93.6)	94 (94.0)	94 (87.9)	71 (88.8)	
Yes	3 (6.4)	6 (6.0)	13 (12.1)	9 (11.3)	
Effort to speak					
No	39 (83.0)	79 (79.0)	84 (78.5)	54 (67.5)	0.151[1]
Yes	8 (17.0)	21 (21.0)	23 (21.5)	26 (32.5)	
Dry throat					
No	23 (48.9)	49 (49.0)	47 (43.9)	29 (36.3)	0.332[1]
Yes	24 (51.1)	51 (51.0)	60 (56.1)	51 (63.8)	
Throat clearing					
No	29 (61.7)	76 (76.0)	76 (71.0)	51 (63.8)	0.195[1]
Yes	18 (38.3)	24 (24.0)	31 (29.0)	29 (36.3)	

[1] Pearson Qui-square Test; [2] Fischer Exact Test; * Significant Values (p≤0.05)

DISCUSSION

The current study characterized the behavior profiles mostly self-referred by professors, as well as investigated the association between particular traits of each profile and self-assessment of communicative use and vocal aspects in classroom environment.

Most professors reported to identify themselves with the affable and expressive profiles, which act based on emotion. Overall, the affable profile is more empathetic, whereas the expressive one is more spontaneous and enthusiastic. A research has reported that expressiveness in professor/students communication contributes to the organization and direction of professors' actions in the classroom and that emotion, affectivity and relaxation help enhancing the learning process and the respect between professors and students[21]. Therefore, it is possible noticing that emotion contributes to the teaching process, since it was a common characteristic among the participating professors.

A study has identified the expressive and analytical profiles as the ones mostly self-referred by professors, whereas most students reported the expressive and affable profiles - students often prefer personality traits similar to the ones they have[10]. This result is in compliance with the present study, since the expressive profile prevailed among professors.

Most participants had positive vocal quality self-perception; however, most professors identified with the analytical profile reported negative perception about it (22.5%) (Table 1). The analytical profile is methodic, thorough and always seeks perfection[7,8,10], thus it is more self-demanding when communicating, a fact that leads to higher tension in vocal production. Besides, individuals in this population suppose that something can always be improved, even when collected data do not allow such impression.

Most participants, in all profiles, described adequate voice intensity and speech articulation. Analytic and expressive profile groups reported the best results concerning these aspects. Individuals identified with the analytical profile mostly reported weak intensity (22.5%) and bad articulation (11.3%), although though most professors reported this aspects as adequate in their individual answers (Table 1). Individuals identified with the analytical profile are more perceptive and has steady voice tone[7], people in it often speak less, with lower intensity, with or without undifferentiated articulation. Based on the vocal psychodynamic, weak voice intensity is usually found in the female population[22] and in introverted people[23]. Bad articulation can be related to lack of will to communicate[3]. Results should be assessed with caution, since individuals identified with the analytical profile can be more self-critic at the time to self-assess these aspects.

Professors identified with the expressive profile were the ones mostly describing voice intensity as "strong" (29.0%) and articulation as "good" (98.0%) (Table 1). Such perception can be associated with characteristics typical of this group, such as high voice inflexion[7,8,10]. Literature corroborates this association, since high voice intensity is often associated with extroverted people who need to communicate[23]. Well-defined articulation is usually related to the desire to be understood and to clearly convey ideas[3], all these characteristics are noticeable in this profile. It is important emphasizing that the current research did not investigate sex related aspects and physical limitations, such as laryngeal or dental occlusion issues, which can be associated with voice intensity and articulation.

Most participants reported adequate speaking rate; however, many professors identified with the pragmatic (38.3%) and analytical profiles (36.3%) reported "fast" speaking rate (Table 1). Based on the literature, adequate speaking rate is fundamental to message transmission effectiveness. When speaking rate is fast, it can show tension and anxiety; it does not give time to the interlocutor to speak[3].

Regarding the self-perception of other aspects of communication, only 'eye contact' was statistically associated with profile when it comes to self-perception about other communication aspects. Professors identified with the pragmatic profile reported that 'eye contact' happens sometimes (19.1%). Most professors in this profile always have 'eye contact' (80.9%); however, profile recorded the lowest result in comparison to other profiles (Table 2). Individuals identified with the pragmatic profile are more assertive, direct[7,8,10] and aim efficiency, and such features can lead less eye contact during teaching practices.

Few vocal symptoms were self-referred by professors, except for "dry throat", which was reported by most participants in all profiles (Table 3). Other studies with college professors presented the same result[24-26]. Overall, this symptom is related to insufficient hydration, abusive and excessive voice use, inadequate working conditions and lack of knowledge about vocal techniques[24,25,27]. Therefore, this result points out the importance of health-promoting actions among university professors.

Professors identified with the pragmatic and analytical profiles reported more symptoms related to voice tiredness and difficulty projecting the voice (Table 3). The pragmatic profile is more assertive and direct; individuals in this group have firm voice tone, whereas individuals in the analytical profile group are more prudent, better listener and have steady voice tone[7]. The current research did not investigate other factors likely causing and aggravating vocal symptoms, such as inadequate working conditions.

The present research used a list of vocal signs and symptoms to collect data; however, only symptoms recording higher frequency among professors were highlighted; not all symptoms were fully assessed given the large amount of study variables and aims. Another study used the same sample size and profile[26] and recorded mean vocal symptoms of 3.1 - 24% of professors presented five, or more, vocal symptoms[26]. Authors of the present study noticed that mean, and the prevalence of vocal symptoms in professors were lower in Brazilian professors, they were limited due the small number of research about this subject involving professors[26].

Some limitations of the current study need to be taken into account. Professors were not assessed for communicative and vocal aspects due to the large number of participants. A self-assessment was conducted; however, results can be different from the recorded through Speech-language assessment. Professors who underwent phonoterapy prior to data collection may have interfered in the results, since this variable was not controlled

in the current study. The aim of the research was to make a scientific contribution to professors' communicative aspects; however, it faced methodological limitations, among them one finds non-validated protocols to investigate vocal questions.

Based on the results, professors' self-referred behavior profiles could be related to vocal and communicative aspects. Therefore, identifying individuals' behavior profile helps better understanding the Speech-language performance; however, it is important to further investigate this aspect based on validated protocols. Clinic practices must not simply focus the enhancement of communicative competences related to vocal alterations, but also professors' behaviors and limitations, which are closely linked to their behavior profile.

The discussion section was probative and limited due to the small number of research about behavior profiles in the Speech-Language field and in the scientific literature. Such scenario influenced the need of making inferences about the results based on the characteristics of each profile; therefore, it was not possible deepening discussions about the collected data. The current research reported scientific evidences about the need of further research and of a broader approach about professionals' voice performance in order to create a better communicative competence.

In addition, the current research contributed by adding online data collection to the protocol. Research carried out in the internet are cheaper and count on larger samples, since physical presence is not required[28]. However, online research have bigger chances to be refused by individuals to participate, or to do not fully answer the questionnaire[28].The main limitation of the present study was the difficulty the assessed institution had to send all the emails, since many electronic addresses were incorrect or outdated.

CONCLUSION

Assessing professors' self-perception about their behavior profile showed the influence of self-referred personality characteristics on communicative skills expressed in classroom environment. Among all personal behavior profiles (affable, expressive, pragmatic and analytical), most professors identified themselves with the affable and expressive profiles; overall, they had positive self-perception about the communicative aspects. Professors identified with the analytical profile mostly reported negative self-perception about vocal quality, such as weak voice intensity, fast speaking rate, voice tiredness and difficulty projecting the voice. Professors identified with the pragmatic profile are the ones recording less eye contact with students. The present study can help Speech-Language performance, since it enabled better understanding communicative skills based on the behavior profile characteristics of each individual.

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Author contributions

IGT contributed to data collection, data analysis, manuscript writing and final version approval; NGR participated in study orientation, helped data collection and assessment, manuscript writing and final version approval; LCT participated in study orientation, manuscript writing and final version approval; AMM participated in study conception, manuscript writing, final version approval and oriented all research stages.