



Vocal self-perception of dysphonic children: the drawing as an analysis tool.

Autopercepção vocal de crianças disfônicas: o desenho como ferramenta de análise.

Vocal autopercepción de los niños disfónicos: el dibujo como herramienta de análisis

*Suzelaine Taize Stadler**

*Elizangela Veis Sponholz***

*Maria Fernanda Bagarollo****

*Vanessa Veis Ribeiro*****

Abstract

Introduction: there are several resources that can be used to express thoughts, including the design, which mediated and organized by language, becomes a valuable tool for analysis of vocal perception. Objective: To analyze the vocal self-perception of dysphonic children from drawings. Material and Method: This is a case report, with analysis of microgenetic designs prepared by three children, aged 8-9 years old diagnosed with dysphonia. Results: Analyses of the drawings were categorized into two: the spelling mode used for the preparation of the design and the significance of graphic production in relation to vocal self-perception. As for the spelling mode all subjects used for designing a pen, with no color variation during development. Regarding the exposed self perception vocal parameters were vocal habits, loudness and voice quality. Conclusions: The designs proved to be effective for the representation of thought resources, even though the child's psychic content is in training. In this sense, the graphical representation can be used as a tool to analyze children's vocal self perception.

Keywords: self concept; child; design; dysphonia; voice

* Graduate student in Speech Language Pathology and Audiology of Universidade Estadual do Centro-Oeste-UNICENTRO, Brazil.

** Specialist in Art, Education and Therapy at the Faculdade de Educação São Brás; Graduate in Education at the Universidade Estadual do Oeste do Paraná – UNIOESTE, Brazil.

*** Speech Language Pathologist and Audiologist; Ph.D. in Health of Child and Adolescent at the Universidade Estadual de Campinas - UNICAMP; Associate Professor of the Department of Speech Language Pathology and Audiology of Universidade Estadual do Centro-Oeste-UNICENTRO, Brazil.

**** Doctoral student in Speech Language Pathology and Audiology at Universidade de São Paulo – FOB/USP; Collaborating Professor of the Department of Speech Language Pathology and Audiology of Universidade Estadual do Centro-Oeste-UNICENTRO, Brazil.

Conflict of interests: No

Authors' contributions: STS: analysis and interpretation of data; article drafting; article review; EVS: analysis and interpretation of data; article drafting; MFB: study conception and design; analysis and interpretation of data; article drafting; article review; VVR: study conception and design, collection, analysis and interpretation of data; article drafting; article review; final approval of the version to be published.

Correspondence Address: Suzelaine Taize Stadler, Universidade Estadual do Centro-Oeste, Departamento de Fonoaudiologia, PR 153, km 7, Riozinho, Irati (PR), Brasil, CEP:84500-000.

E-mail address: :suzii_stadler@hotmail.com

Received 19/10/2014 **Accepted:** 19/06/2015



Resumo

Introdução: são vários os recursos que podem ser utilizados para expressão do pensamento, dentre eles o desenho, que mediado e organizado pela linguagem, torna-se um instrumento de grande valia para análise da autopercepção vocal. *Objetivo:* analisar a autopercepção vocal de crianças disfônicas a partir de desenhos. *Material e Método:* trata-se de um relato de caso clínico, com análise microgenética de desenhos elaborados por três crianças, com faixa etária entre 8 a 9 anos e diagnóstico de disфонia. *Resultados:* para análise dos desenhos foram usadas duas categorias: o modo de grafia utilizado para elaboração do desenho e a significação da produção gráfica em relação à autopercepção vocal. *Quanto ao modo de grafia,* todos os sujeitos utilizaram caneta, não havendo variação de cores durante a elaboração. *Em relação à autopercepção vocal,* os parâmetros expostos foram os hábitos vocais, loudness e qualidade vocal. *Conclusões:* os desenhos se mostraram como recursos eficazes para a representação dos pensamentos, ainda que na criança o conteúdo psíquico esteja em formação. Nesse sentido, a representação gráfica pode ser utilizada como um instrumento de análise da autopercepção vocal infantil.

Palavras-chave: autopercepção; criança; desenhos; disфонia; voz.

Resumen

Introducción: existen varios recursos que pueden ser usados para expresar pensamientos, incluyendo el diseño, que mediado y organizado por el lenguaje, se convierte en una valiosa herramienta para el análisis de la autopercepción vocal. *Objetivo:* Analizar la autopercepción vocal de los niños disfónicos por medio de dibujos. *Material y Método:* Se trata de un reporte de caso clínico, con análisis microgenéticos de dibujos desarrollados por tres niños con edades entre los 8 y 9 años, con diagnóstico de disфонia. *Resultados:* Para el análisis de los dibujos se usaron dos categorías: el modo gráfico utilizado para la preparación del diseño y la significación de la producción gráfica en relación con la autopercepción vocal. En cuanto al modo gráfico todos los sujetos utilizan la pluma, sin variación de color durante el desarrollo. En cuanto a la auto percepción vocal los parámetros expuestos fueron: hábitos vocales, loudness y calidad de voz. *Conclusiones:* Los diseños demostraron ser recursos eficaces para la representación de los pensamientos, a pesar de que el contenido psíquico del niño está en formación. En este sentido, la representación gráfica se puede utilizar como una herramienta para analizar la autopercepción vocal de niños.

Palabras clave: autoimagen; niño; diseños; disфонia; voz

Introduction

Each individual has its own specificities in voice, is closely linked to its own image, as well as its self-esteem¹.

The voice allows the individual to express its emotions, thoughts and feelings, being produced by the components of the vocal tract, which range from oral/nasal cavity to the lung².

For the occurrence of voice production, complex activities of various muscles and the integrity of the vocal tract tissues are essentially necessary^{2,3}.

Dysphonia / vocal disorders express the changes that prevent or hinder the natural and harmonic production of the voice. Additionally, they can cause some psychological, social and functional suffering on the subjects due to the compromise

of the voice and their influence on their daily life^{1,3,4}.

Dysphonia is characterized by changing some vocals parameters being touted in some studies that about 38% of children are affected by dysphonia^{5,6}. Its etiology is varied - and ranges from self-limiting conditions such as acute viral laryngitis, to disabling and life-threatening injuries, such as tumors, and it may interfere negatively in social-emotional development of children. It is necessary to consider also the predisposing or aggravating factors of childhood dysphonia, among which are: inadequate vocal habits, biopsychosocial factors, inadequate vocal models, the structure of personality, phonics unsuitability and allergic factors^{5,6}.

The vocal disorder can manifest itself through symptoms such as vocal fatigue; stress or pain to speak; sensation of throat scraping; voice failures;

hoarseness; burning or dryness in the throat; lack of volume in the voice; lack of vocal projection; aphonic; difficulty maintaining voice and little resistance to speak^{7,8}. Among all these vocal manifestations that characterize the vocal disorder, hoarseness, weak voice, aphonic, vocal fatigue and sore throat are the signs and symptoms more frequent⁹.

Several resources can be used to analyze the vocal self-perception, one of them is the drawing, considered a natural graphic and spontaneous production¹⁰, mediated and organized by language, and it can become a very significant symbolic way of expression of thoughts, once its production is full of sense and meaning^{11,12}.

In the literature, there are few works that bring the drawing related to the voice area, and even more scarce works that seek this relation - thought and sense / meaning - but those who conducted studies in this area show a strong link between expression and graphic production¹².

Unlike adults, who can report their vocal complaints, children do not always specifically describe their complaint, so some signs may go unnoticed to the ears of parents and the child's account of what it is feeling or sensing can be confused with symptoms of upper airway infections^{13,14}.

Once the spoken language is relatively structured, the child commonly uses the drawing as a form of representation. From this conception, the drawing is applied in clinical treatments, as a symbolic instrument of language, as it is a true representation of what the child knows and associates to its imagination¹². In this sense, the drawing is introduced as a symbolic component of expression of unconscious contents, and expresses the particularities of the subject^{15,16} and thus it can be used as self-assessment tools for children in several areas of speech therapy activities, among which highlighting the voice.

The drawings produced by dysphonic children can bring valuable information about their self-image and their knowledge of their voice and expression of unconscious psychic contents and psychological characteristics, personality, cognitive, affective, behavioral, and body, contributing to the involvement of the subject with others and sharing information within the therapeutic group¹⁶. The drawings in speech therapy have been used in assessment and therapeutic processes, but there is still a very big gap regarding its use as a clinical tool^{13,15,16,17}.

Thus, the aim of this study is to analyze the vocal self-perception of dysphonic children from drawings.

Case Report

Trata-se de um relato de caso clínico, de natureza This is a case report of a qualitative nature and micro genetic analysis method, from a historical-cultural interpretation of human processes, related to the vocal self-perception of dysphonic children. This approach proposes the description of the minutiae of a course of transformation of behavior and social conditions of production through associative laws, trying to understand the linguistic and cognitive processes of the subjects¹⁸ related to vocal self-perception. Also, looking for mean the productions, there was a debate so that children had the opportunity to signify their designs.

In the present study the oral speeches were not included and discussed but the possible interpretations of the meanings attributed by children to their vocal production, based on their respective spellings.

Considering that the drawing is polysemic, this resource will be used, trying to place the reader on the interpretation of drawings. In this sense they shall be regarded as figurative objects that can give materiality to the thought of the authors, because as the child imagines, figures and performs, she makes up her drawing designating a way to convey its thought¹⁶.

The subjects of this report were three children with speech diagnosis of organofunctional dysphonia; two girls aged eight and a nine year old boy (mean 8.33 years). For diagnosis of dysphonia, children went through a process consisting of perceptual speech evaluation and acoustic voice and ENT evaluation.

The children were selected from a waiting list of a Clinical School of Speech Therapy, and submitted to 12 therapy sessions, lasting 40 minutes each, once a week, in a single group. The activities proposed during the sessions aimed at working the vocal health were: role plays, games, elaborations panels, drawings, vocal exercises in a playful way seeking to contextualize them and link them to meaningful contexts for them.

The techniques used throughout the therapy process were: nasal sounds, vibrant sounds, vocal

fry, fricative sounds, yawn-sigh and chanted voice; which should be performed at home three times a day, 15 sets of each selected exercise. The exercises were taught and practiced in therapeutic session and parents were advised on the implementation of techniques to accompany them at home, and resumed at the beginning of subsequent sessions. We attempted to further the exchange of experiences and joint construction in the group of knowledge about production and vocal health.

To achieve the objectives proposed in this study, a drawing produced by children during the third group therapy session was analyzed. The proposed theme was represented by a drawing, as they perceived their voices, for further discussion on vocal production and introducing the concept of vocal psychodynamics. For the realization of drawings, bond white sheets, pencils, paint colorful pens in blue, black and red, rubber and sharpener were available, being exposed on the table within reach of individuals. At that meeting, the mediators were one speech language therapist and one art therapist.

We opted for the interdisciplinary work in session, since art can only be fully understood and analyzed in context, especially when it comes from the symbolic expression of thought, so being able to understand their magnitude¹⁹. In this study, to make this possible, the significance was carried out with the kids through the oral speech, the social environment in which they were developed.

The study was approved by the Research Ethics Committee (REC) of the institution under opinion No. 2,462,010 and conducted respecting to Resolution 466/12. The responsible for the subjects were instructed and informed about the objectives and procedures of the research, accepting participate voluntarily and signing the Informed Consent (IC).

Results

The set of drawings has allowed the identification of two main themes to collate and analyze the data (Figure 1). The first one concerns the spelling methods used and the second one is on the significance of the graphic production for vocal self-perception.

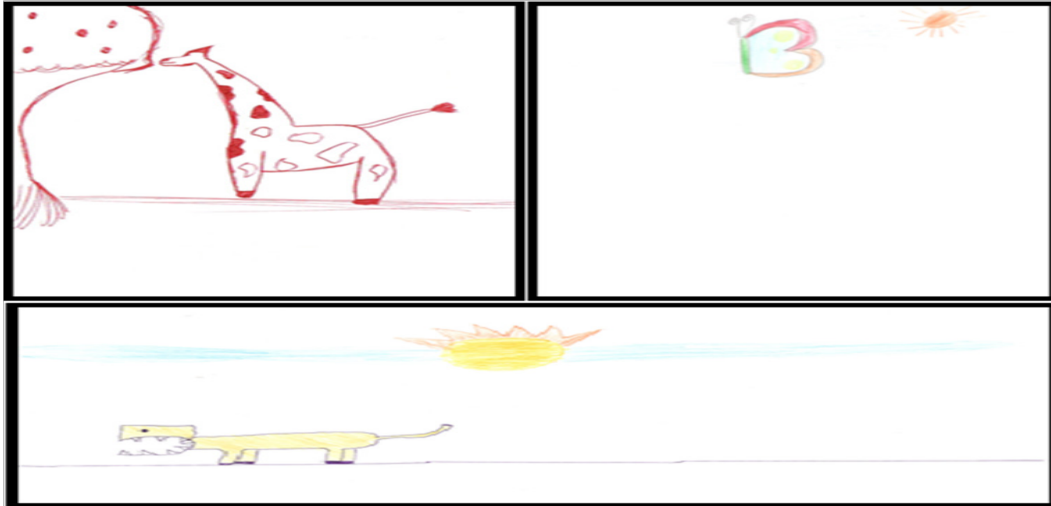


Figure 1: P1, P2 and P3 Self-perception
Legend: P1 = patient 1; P2 = patient 2; P3 = patient 3

Spelling modes

It was observed that the entire drawings have been produced with a single pen, with no color variation as it was being drawn. P1 was the only one who did not color its drawing, since P2 and P3 used pencil to color after performing the spellings in pen. P2 used five colors on the same character. P3 used four colors, but each color in a character. It is noteworthy here that the material available was laid out on the table during the entire production, leaving it to the subjects use, or not. It could be observed that none of the subjects erased the drawing.

During the preparation of drawings, oral and gestural interventions were performed, showing the material and suggesting the exchange; but even with the intervention, all of the children chose to follow with the pens, and P2 and P3 replaced with colors in the painting, and P1 also chose to paint with the pen of the same color.

P1 made stronger and also a border defining the space and the use of delicate features, but with stronger contours; which was not seen in P2 and P3 drawings. P3, in turn, used primary colors and higher tint in the region of the mouth and neck, painting only the spots of the region, and using most of the area of the sheet.

As provided in the sheet, P2 draws attention to the use of a whole

Meanings of graphic productions from the historical-cultural perspective

With respect to possible meanings being allocated to the drawings, it is noted that there was in all drawings the attempt to represent the voice perception by animals.

The P1 drawing shows that her voice is something too flashy, with high visibility by the figure and the color red used. The fact that the animal is eating, refers to the importance of proper nutrition for the correct voice production, the care with the vocal hygiene and good voice uses; in one and two sessions there were discussed some concepts about vocal health, which were taken up by P1 in the debate about the production of its drawing.

P1 also held a delimitation of space and drawings with delicate traces, but with stronger contours, which may be indicative of a protective barrier or even security. Such interpretations were assigned in the debate, not being initially cited by

P1, but later with agreement of the patient, it is afraid of the reaction of the listeners, especially from its parents when they hear its voice and so it tries to make a stronger voice.

P3 used primary colors and more shade in the neck, as well as defined the spots painted only on that region. The part highlighted refers to the larynx, major organ involved in speech, which was highlighted by P3 in the debate as the most important part in vocal production.

In the debate on its drawing, P2 said that the butterfly represents the lightness of its voice, which may indicate a harmonic voice quality. This interpretation was made by the child. The size and position of the butterfly suggest the degree of importance it attaches to the voice, once it designed the butterfly at the top of the sheet and beside the sun, referring in its reflection on the drawing, the great importance of the voice in its life.

In P3's drawing, voice is a scary monster, as well fragmented traits may suggest, due to lack of continuity and many jagged formations, something that bothers and hurts even physically and / or psychologically. The size of the mouth may indicate the production of a sound with high pitch, shrill, or even with strong loudness. These assignments were made by P3, meaning its drawing as a high, strong and scary voice, which causes pain in the ear of the listeners; however, P3 did not know how to define the type of discomfort, physical, caused by sound perception, or psychological, generated only by psychodynamic interpretation of the characteristics of its voice.

The considerations applied in the drawings were drawn from a reflection conducted between the therapist and children, which gave meaning to their drawings.

Discussion

Based on the historical and cultural theory, it is considered the drawing as a form of representation. Thus, from it, the child can mean and express its thoughts. You can also reflect on all the processes involved in the act of drawing, such as the psychological processes of perception, memory, imagination, meaning, language, in other words, contents that show its symbolic²⁰.

The drawing can be considered as a graphic result of various characteristics of individuals, because it is observed the graphic production, its

facial reactions, gestures, and behaviors, that is, everything that is triggered in the act of drawing²¹.

It is believed that the drawings of this study demonstrate the three children trying to, through the graphical representation, transpose the mental perception of their vocal psychodynamics, in other words, how they perceive their own voice. These results corroborate other studies in this area^{14,16} which relied to characterize, in subjects participating in a experience group, aspects of vocal perception, and the voice of knowledge, through drawings and testimonials, or they used the children's drawing regarding the appropriation of senses and meanings. It is inferred that the results of these studies reinforce the findings of this research, they show in participating, the attempt to express / mean through drawing, their vocal perception.

Regarding the spelling mode, the first thematic area of this work, in P1 figure the traces were more developed, and they are thick, unlike the P2 and P3 figures whose traces were more simplified. However, the figures of P1 and P2 contained firm strokes without corrections and were organized, indicating that the intention of graphics exists; P3 indicates the fragmented traces, suggesting a series of discrete and repeated elements²¹. The discrete elements represent something that is not done with total certainty, however, the firm and organized traces show greater security in the preparation of the drawing²¹.

In relation to the contour of the figure, P1 held more strongly; this may indicate that it needs or thinks it is necessary to have a protection, since the drawings indicate meanings of its thought¹⁴.

On the second main theme analyzed, meanings of graphic productions, children expressed themselves freely on a playful way, allowing access to their psychological content. The act of drawing expresses the symbolic representation system and projection possibilities of the body schema. It also reflects the self-image, the possibilities of meaning, transposing their feelings, to express subjectivity, their inclusion and participation in culture^{16,22}.

In P1 drawing, a picture of a giraffe seems to symbolize the voice for this child is something ample¹⁸ and flashy, according to it; Furthermore, the color red symbolizes that its voice is alive, strong, that stands out. Thus, it is understood that for this child its voice draws attention and stands - information confirmed by P1. Even on P1, the giraffe is eating leaves from a tree, which is healthy for it,

representing, according to P1, adequate food for the use of voice as well as proper care used for vocal health because some habits are inadequate, such as talking excessively, shout, speak with strong loudness, clear its throat, consume carbonated beverages, spicy foods or dairy products, among others, which are commonly present practices in cases of children dysphonia^{23,24}.

In P2's drawing, the figure of the butterfly represents lightness, softness. This design contains many colors, symbolizing the voice for it has several positive characteristics¹⁸, suggesting the production of an adapted voice. In addition, it makes the drawing close to the sun on the upper side of the sheet¹⁸, indicating the importance that the voice occupies in its life.

In P3's drawing, voice is represented by a large, strong and scary monster. Fragmented strokes with pointed formations indicate something that troubles and even physically and/or psychologically hurts¹⁸; furthermore, the size of the mouth may be associated with the production of a high-pitched sound.

The loud, strong sound pressure expressed by P3's drawing, when it happens during a long period and repetitive episodes, is regarded as an abusive and inappropriate behavior to the voice, which can overload the speech apparatus⁴. However, it can also be used as a compensatory strategy for children with laryngeal lesions and lack of glottal coaptation²⁵ as bilateral nodes, otorhinolaryngological diagnosis of P3.

Regarding the spatial orientation, P1' and P3's drawings used large spaces on the sheet, indicating symbolically the large space that the voice occupies in their lives and social relations¹⁸. In contrast, P2's drawing used only one part of the sheet, leaving the rest blank, showing that there is space for other things in its life.

However, considering that P2 represented on the top of the sheet, near the sun, it indicates that despite not being the main thing, the voice is also important in its life¹⁸. This may have been assigned by P2 for it is not aware of an altered voice, referring to the voice as something light and harmonic.

All these factors indicate that the three individuals were concerned with the graphical representation, full of senses. In this movement, the graphical representation shows the mental representation possibilities of the subject, because only after passing the mental representation it can demonstrate the graphical representation²⁶.

It also allows to highlight the complementarity between the drawing and the vocal self-perception as from the drawing the subjects were able to show how they perceive and what their voices represent^{13,27}.

It is therefore of utmost importance to consider every feature of the drawing, and that they are interpreted correctly, with the correct theoretical support¹⁸, considering also the participation of the children in the significance of their productions for the understanding the representation of their psychological, affective and emotional conditions²⁸.

For this to be possible, it is important interdisciplinary work between speech language therapy and art therapy, still little explored when it comes to the treatment of dysphonic children. It is believed that the integration between the therapeutic art concepts concerning the interpretation of the visual representations of children, and speech therapists, referring to vocal health habits, and the meanings given by children to their drawings, allow a better understanding of vocal self-perception expressed through the drawing tool.

Although some studies cite lack of children vocal perception²⁹ the vocal characteristics present in graphical representations indicate that the three subjects consider the voice as something important. Thus, it emphasizes the need to implement in clinical speech language therapy instruments that allow the representation of self-perception^{16,30} considering that children are still immature to interpret standardized instruments of vocal self-assessment, as protocols.

Thus, it is believed that the drawing is an important tool that enables the assessment of vocal perception, and possibly also the monitoring during the therapeutic process of the vocal modifications of the child's point of view, allowing the speech language therapists to direct their work for the subject, beyond the therapeutic work, seeking a normotensive vocal production.

The limitations of this study are related to the limited number of participants, the convenience sample and analysis of only one drawing per child. We suggest conducting further studies with randomization according to sex and type of dysphonia, thus seeking to determine whether the findings of this study can be replicated with other populations

Conclusion

By analyzing the two axes of this research it is observed that the child is capable of, although their psychological contents are in training, transmitting through drawing representation of its thinking, its psychic content, suggesting the deployment of graphical representation as a tool analysis of children's vocal self-perception.

REFERENCES

1. Park K, Behlau M. Perda da voz em professores e não professores. *Rev Soc Bras Fonoaudiol*. 2009;14(4):463-9.
2. Behlau M, Dragone M, Nagano L. A voz que ensina: o professor e a comunicação oral em sala de aula. Rio de Janeiro: Revinter; 2004.
3. Connor NP, Cohen SB, Theis SM, Thibeault SL, Heatley DG, Bless DM. Attitudes of children with dysphonia. *J Voice*. 2008;22(2):197-209.
4. Behlau M, Azevedo R, Pontes P. Conceito de voz normal e classificação das disfonias. In: Behlau M, editors. *Voz: o livro do especialista*. Rio de Janeiro: Revinter; 2001. p. 53-79.
5. Maia AA, Gama ACC, Kummer AM. Características comportamentais de crianças disfônicas: revisão integrativa da literatura. *CoDAS*. 2014;26(2):159-63.
6. Takeshita TK, Aguiar-Ricz L, Isaac ML, Ricz H, Anselmo-Lema W. Comportamento vocal de crianças em idade pré-escolar. *Arq Int Otorrinolaringol*. 2009;13(3):252-8.
7. Takeshita TK, Ricz LNA, Lima WTA, Isaac ML. Comportamento Vocal de crianças pré-escolares atendidas em uma creche do Campus de Ribeirão Preto da Universidade de São Paulo. In: 13º Simpósio Internacional de Iniciação Científica da Universidade de São Paulo - SIICUSP; 8 a 9 de novembro de 2005, Ribeirão Preto. São Paulo: 13º Simpósio Internacional de Iniciação Científica da USP, 2005.
8. Behlau M, Pontes P. *Voz: o livro do especialista*. 2nd ed. Rio de Janeiro: Revinter; 2005.
9. Silvério KCA, Gonçalves CGO, Penteadó RZ, Pichirilli TPAG, Libardi A, Rossi D. Ações em saúde vocal: proposta de melhoria do perfil vocal de professores. *Pró-Fono R Atual Cient*. 2008;20(3):177-82.
10. Silva SMC. A constituição social do desenho da criança. Campinas: Mercado de Letras; 2002.
11. Hurtado MMT, Gonzalez FS, Iglesias VF, Barandian UA. Voz del niño. *Rev. Med. Univ. Navarra*. 2006; 50(3):31-43.
12. Araújo CCM, Lacerda CBF. Examinando o desenho infantil como recurso terapêutico para o desenvolvimento de linguagem de crianças surdas. *Rev Soc Bras Fonoaudiol*. 2008;13(2):186-92.
13. Fritsch AV, Oliveira G, Behlau M. Opinião dos pais sobre a voz, características de comportamento e de personalidade de seus filhos. *Rev*



- CEFAC.2011;13(1):112-22.
14. Roy N, Holt KI, Redmond S, Muntz H. Behavioral characteristics of children with vocal fold nodules. *J Voice*. 2007; 21(1): 57-68.
15. Pereira PFA, Penteadó RZ. Desenhos e depoimentos: recursos para investigação da percepção e do conhecimento vocal. *Rev CEFAC*. 2007;9(3):375-82.
16. Araújo CCM, Lacerda CBF. Examinando o desenho infantil como recurso terapêutico para o desenvolvimento de linguagem de crianças surdas. *RevSocBrasFonoaudiol*. 2008;13(2):186-92.
17. Luchesi KF, Reily L. O papel do desenho na clínica fonoaudiológica: profissionais falam de suas práticas. *DistúrbiosComun*. 2007;19(1):51-61.
18. Góes MCR. A abordagem microgenética na matriz histórico-cultural: uma perspectiva para o estudo da constituição da subjetividade. *Cad CEDES*. 2000;20(50):9-25.
19. Cornai S. Percursos em arteterapia: ateliê terapêutico, arteterapia no trabalho comunitário, trabalho plástico e linguagem expressiva, arteterapia e história da arte. São Paulo: Summus; 2004. p. 297-309.
20. Natividade MR, Coutinho MC, Zanella AV. Desenho na pesquisa com crianças: análises na perspectiva histórico-cultural. *Contextos Clínic*.2008;1(1):9-18.
21. Castro PF. Reflexões sobre o conteúdo do desenho livre em crianças entre seis e dez anos de idade. In: *Anais do 2º Congresso Brasileiro de Ludodiagnóstico*, 2011, São Paulo. São Paulo: Escola Paulista de Psicologia Avançada; 2011.
22. Simas DL. Riscos e rabiscos: a contribuição do desenho infantil para a alfabetização [trabalho de conclusão de curso]. Salvador: Universidade do Estado da Bahia. Graduação em Pedagogia. Departamento de Educação; 2011.
23. Maia AA, Gama AC, Michalick-Trigineli MF. Relação entre transtorno de déficit de atenção/hiperatividade, dinâmica familiar, disfonia e nódulo vocal em crianças. *RevCiênc Med*. 2006;15(5):379-89.
24. Paixão CLB, Silvério KCA, Berberian AP, Mourão LF, Marques JM. Disfonia Infantil: hábitos prejudiciais à voz dos pais interferem na saúde vocal de seus filhos? *Rev CEFAC*.2012;14(4):705-13.
25. Cielo CA, Conterno G, Carvalho CDM, Finger LS. Disfonias: relação s/z e tipos de voz. *Rev CEFAC*.2008;10(4):536-47.
26. Vygotsky LS. A formação social da mente. 3rd ed. São Paulo: Martins Fontes;1989.
27. Carneiro PR, Teles LCS. Influência de alterações posturais, acompanhadas por fotogrametria computadorizada, na produção da voz. *Fisioter Mov*.2012;25(1):13-20.
28. Behlau M, Madázio G, Feijó D, Pontes P. Avaliação de voz. In: Behlau M, editors. *Voz: o livro do especialista*. Rio de Janeiro: Revinter; 2001. p. 118- 20.
29. Oliveira RC, Teixeira LC, Gama ACC, Medeiros AM. Análise perceptivo-auditiva, acústica e autopercepção vocal em crianças. *J SocBrasFonoaudiol*. 2011;23(2):158-63.
30. Penteadó RZ, Camargo AMD, Rodrigues CF, Silva CR, Rossi D, Silva JTC, et al. Vivências de voz com crianças: análise do processo educativo em saúde vocal. *DistúrbiosComun*. 2007;19(2):237-46.

