
The Magic Hat: A tool for intervention on language disorders

A Cartola Mágica: Um instrumento de intervenção em perturbações da linguagem

El sombrero de copa mágico: Una herramienta para la intervención en trastornos del lenguaje

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Abstract

ALanguage disorders are connected with a high risk of learning difficulties and may compromise the school and social integration of the affected children. When speech is not constituted as a way of expressive language, it becomes very important to provide to the child an early therapeutic intervention. For this purpose it was developed a pedagogic and ludic instrument, covering the five branches of speech, easily comprehended by children and supporting their learning. The instrument of gradual intervention entitled “The Magic Hat” is personified as a cat with a hat anatomically compartmentalized in drawers, symbolizing the five branches of language, intended for children of 5-8 years old. The instrument can be used in different ways to archive the therapy goals that the therapist has with a particular child. The portability of the macromodel created is a limitation of this instrument and its empirical lead is the fact

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Conflict of interests: No

Authos' Contribution: MRD - conceptualized and designed the study, drafted the initial manuscript, made a critical review and approved the final manuscript. Supervised the project orchestration. Coordinated research activities that resulted in published work. JCA- conceptualized and designed the study, developed and designed the methodology and created models, built the data collection instrument (including software development). Prepared and created the article, specifically writing the first draft, made critical review and approved the final manuscript. Coordinated research activities that resulted in published work.

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Received: 22/07/2014; **Accepted:** 27/11/2014

that it includes all the language areas and it is very easy to be implemented in limited therapeutic settings..

Keywords: Speech, Language and Hearing Sciences; child language; early Intervention (Education); health education; drawings.

Resumo

As perturbações da linguagem apresentam um elevado risco para dificuldades de aprendizagem e podem comprometer a inserção escolar e social das crianças afetadas. Quando a fala não se constitui como um meio de linguagem expressiva, torna-se muito importante proporcionar à criança uma intervenção terapêutica precoce. Com este propósito foi criado um instrumento lúdico-pedagógico para a terapia de fala, capaz de dar suporte conjunto aos cinco domínios linguísticos e que é facilmente apreendido pela criança, favorecendo a sua aprendizagem. O instrumento de intervenção designado por “A Cartola Mágica” é personificado num gato com uma cartola anatomicamente compartimentada em forma de gavetas, simbolizando os cinco domínios da linguagem, destinado a crianças com idades compreendidas entre os 5 e os 8 anos. O instrumento pode ser utilizado em várias vertentes linguísticas, de acordo com os objetivos terapêuticos pretendidos. O instrumento apresenta como limite a portabilidade do modelo criado e, como alcance empírico, o fato de incluir todos os domínios da linguagem e ser de fácil aplicação em settings terapêuticos restritos.

Palavras-Chave: Fonoaudiologia/Terapia da Fala, linguagem infantil, intervenção precoce (educação), Educação em Saúde

Resumen

Las perturbaciones del lenguaje presentan un alto riesgo para dificultades en el aprendizaje y pueden poner en peligro la integración escolar y social de los niños afectados. Cuando el habla no se constituye como un medio de lenguaje expresivo, es muy importante proporcionar al niño una intervención terapéutica temprana. Para ello se creó una herramienta lúdica y educativa para la terapia del habla, capaz de dar soporte a las cinco ramas del lenguaje, fácil de entender por los niños, ayudando su aprendizaje. El instrumento de intervención llamado de “La Chistera Mágica” es personificado por un gato con una chistera anatómicamente compartimentada en forma de cajones, simbolizando las cinco ramas del lenguaje, destinada a niños con edades entre los 5 a los 8 años. El instrumento se puede utilizar en varias vertientes lingüísticas, de acuerdo con los objetivos terapéuticos previstos. El instrumento creado presenta como limite la portabilidad del modelo creado y como alcance empírico la capacidad incluir todas las ramas del lenguaje, y ser fácil de aplicar en contextos terapéuticos limitados.

Palabras clave: Fonoaudiología; lenguaje infantil; intervención precoz (educación); Educación en Salud.



Introduction

According to the American Speech-Language-Hearing Association (ASHA) language is a conventional system, socially shared, which allows to represent ideas through the use of arbitrary symbols and rules that govern them. Thus, it can be stated that people communicate and reflects through language^{1,2}.

The acquisition of oral language is a natural process that occurs without formal learning^{3,4}. It is done through a process of interaction that involves manipulation, combination and integration of linguistic forms and rules that are intrinsic, enabling the development of perception capabilities of language (understanding language) and capacities to develop and produce language (expressive language)³. This process is determined by the interaction between environmental factors, psychosocial, cognitive and biological³.

The importance of language for human life and for the establishment of social and interpersonal relations is such that some authors pointed out that "language has a distinctive character, assuming it as the most powerful and known communication tool"⁵.

Language is a capability inherent in all human beings, which can only be exercised by the use of a language socially shared code that distinguishes us from other living beings^{3,6,7}.

There is an explanatory model of the language defined by three main areas, which in interaction create the linguistic phenomenon: the form, the content and the use³. Language has four components: phonology, phonetics, morphology and syntax. Phonology implies an understanding and production at the level of the phonetic system of the language in which the child is placed. Morphology and syntax, proceed to the analysis of how the child constructs words by combining units and the study of sentence structures and the relationship between its components³.

As regards the contents of the language, there is the semantic area which studies the lexicon, the meaning and the number of words that the child uses³. Finally concerning the use of language, there is the pragmatic area that focuses on the study of communicative and speech functions, such as the conversational skills, the fluency, among others³.

Language is a communication process that requires the participation of the brain in all its

activities, highlighting the importance of the brain development². The evidence indicates that the developing brain is plastic, with high reorganization capacity of the synaptic connections for the adequacy of the growth of the organism to new intellectual and behavioral capacities of the child, thus allowing access to learning⁸. Compared to the adult brain, these connections occur more quickly, especially between the birth and six years, and this period is marked by a major development and brain maturation^{7,9}. In these ages children acquire and learn more naturally and with less effort².

Children have a genetic predisposition to acquire language. However, to acquire language is essential that each child feels the need and wishes to, it is also crucial its interaction with the environment¹⁰.

According to some authors there are several aspects that strongly influence the acquisition of language namely, genetic, physiological, neurological, psychological, environmental, socio-cultural, educational and family^{2,6}. These factors do not occur in tight or segmented way, but interact with each other⁶.

Genetic, physiological and neurological factors involve any changes that occur in fetal development period until the moment of its birth, for example the chromosomal alterations, the mother's age during pregnancy, the child's birth order, pregnancy situations of twins, cerebral or facial birth defects, premature birth, low birth weight, among others⁶.

The group of health problems and oral habits are related to diseases or accidents affecting the anatomical structures or neurological development, which may occur during the birth, such as, lesions in the sensory system (hearing, low Apgar score, illnesses or accidents affecting the motor component and anatomical structures inferences in the neurological development, among others)⁶.

The family background and socio-cultural situation, weigh heavily on child development, particularly in its interpersonal relationships. Its influencing factors include the socioeconomic status, the inclusion in multilingual contexts, the school context, the interaction with peers and parents, the role played by the family in language development, among others⁶.

If all this linguistic system does not work harmoniously the child experiences a change of language development which corresponds to the

group of the most common developmental problems in childhood².

According to the Diagnostic and Statistical Manual of Mental Disorders, language disorder manifests itself in the child's development of the initial period and its language skills are substantially below the expectations for its age¹¹. It includes a reduced vocabulary, both at the level of word knowledge and its use; a limited sentence structure, with regard to the formation of sentences according to the morphological and grammatical rules; and a deficit in speech, i.e., a gap in vocabulary and grammar, and a limited speech¹¹.

The language disorder is strongly associated with other neurodevelopmental disorders, such as, disruption of specific learning, attention, autism, the development of coordination and social communication¹¹.

The changes that occur in communication development process, such as language and speech disorders, are seen as barriers at different stages and contexts of functioning. This is because people think through language and externalizes his thoughts through it. Language distorters are a concern for public health because of the impact that they have on children's lives and their family². These disorders can cause serious consequences in terms of social inclusion (school and education), access to knowledge and the perception that the individual has the world, which may lead to higher risk of future display, e.g., learning difficulties^{2,7}.

To promote a better prognosis, as well as, to reduce, or even eliminate the impact of language disorders, as possible consequences of psychiatric and psychosocial, is important to do an early identification and intervention².

Early intervention in speech therapy with children who have language disorders is crucial because it can reduce significantly the impact on individuals and their families' lives, avoiding serious consequences in social participation, educational and future professional field^{2,11}.

One of the functions of language is its playful function, where language satisfies the need for gaming, which is intrinsic to people during all their life. This characteristic is even more relevant in children as their need to playful actions is permanent and more frequent³.

Integrating the typical cultural practices, childhood is marked by playing, which is used by child to satisfy its interests, needs and desires, being a

privileged way of insertion into reality^{12,13}. There are several social groups advocating play as an essential activity for child development, as they can transform and produce new meanings. Play is considered one fundamental principle. It is defended as a right, a particular form of expression, thought, interaction and communication between children¹². Thus, play activities promotes the overall development of children, encouraging interaction among peers, as well as, allows to resolve conflicts and promote critical and reflective citizen^{12,13,14}.

When playing, children reaches more complex levels by the possibility of interaction in an imaginary situation and by the trading rules of coexistence and thematic content^{13,14}. It also allows the child to decide and assume roles, assign different meanings to objects and hypotheses¹⁴.

Playing is still a fundamental activity for the development of identity and autonomy. During play, the child may develop some skills such as attention, imitation, memory and imagination, maturing some social skills¹⁵.

As a sociocultural perspective, the play is defined as the way that children have to interpret and assimilate the world, objects, culture relations and people affections. Thus, it becomes a characteristic of childhood space to experience the adult world¹⁴.

Consequently, it is very important to use play activities in therapeutic intervention, as it allows the child to learn the desired tasks with pleasure and joy, optimizing its potential¹³.

In this instrument, it was also taken into account the importance of color in the interaction with the child. Colors have a capacity to emancipate many creative possibilities in the imagination of people, becoming a carrier of ideas, able to overcome spatial and temporal boundaries and not having national barriers. Therefore, the message can be understood by all¹⁶.

The choices of colors are influenced by psychological, sociological and even physiological factors. They may be chosen, not by personal preferences, but for its use in certain function¹⁶, having also the power to capture, in a fast and emotionally way. Therefore, it should be clear the colors adequacy¹⁶.

Regarding the colors used on the instrument, and corresponding them with chromatic sensations, it can be concluded that taking into account the emotional association of red, this color conveys strength, energy, passion, vulgarity, courage, leadership, among others¹⁶. As for white, it refers to

achromatic sensations and transmits cleanliness, peace, purity, and also remits to childhood¹⁶.

The use of educational games and projective techniques is an added value in health contexts¹⁷. Education and Health should be linked, articulating learning, knowledge and actions that promote the integral development of the individual^{18,19}. Since education influences and is influenced by health conditions, it establishes close contact with all everyday situations and its social, political, economic and cultural aspects¹⁹.

In 1969, the World Health Organization defined health education as “an action exerted on individuals in order to modify their behavior to acquire and retain healthy health habits, learn to use wisely the health services they have at their disposal and be able to take, individually or collectively, the decisions implying the improvement of the state of health and sanitation in which they live”²⁰. In short, education for health is a strategy, a promotional tool to health”²⁰.

As previously mentioned, language has a playful function and is in this context that the pictogram becomes important because in addition to the inherent entertainment component, it has a pedagogical power that captures the child’s attention and motivation^{3,21,22}.

Pictograms are extremely simplified graphical representations of objects, actions, narratives or even abstract concepts. Should by itself, without the use of texts, represent the object or concept and should be easily identified and understood by the beholder, surpassing the linguistic boundaries^{22,23}.

On this basis, a playful-pedagogical tool reveals a high importance in the area of language disorders as it serves as a tool for evaluation and intervention. It has an innovative component, namely by the fact that five dimensions of language are included in a single instrument, making the “The Magic Hat” instrument, described below, very pertinent in the area of language disorders.

This communication falls within the scope of the construction of recreational and educational tools aimed to reconfigure the therapeutic setting in Speech Therapy. Its main objective is to emphasize the importance of early intervention in children with impaired language, through the creation of an intervention instrument based on health education and the use of pictograms.

Descrição do Instrumento

The recreational and educational intervention tool developed, titled as “The Magic Hat”, is embodied in a cat with a hat-shaped anatomically compartmentalized in drawers (Figure 1). These drawers symbolize the five branches of language: semantics, phonetics and phonology, pragmatics, morphology and syntax.



Figure 1 – Instrument “The Magic Hat”

This instrument aims children to develop language in its five fields, and has the following objectives: i) describe the images presented semantically; ii) identify the existence of the images presented on the cards rhymes; iii) produce verbally rhymes; iv) identify the existence or not of the same initial sound of the pictures displayed on the cards; v) identify the word that results from the defragmentation of another word; vi) split syllabically the words presented; vii) complete with morphological elements the story “The Cat and the Magic Hat”; viii) create a spontaneous dialogue from the puppets, Leonor and Afonso and correct the action sentences illustrated by images.

To define the instrument’s implementation procedure it was taken into account the places where occur the application and its specific objectives. In order to ensure its successful use, it is necessary that the speech therapist maintain a dialogue consistent with the child’s age and socioeconomic status, to ensure that the child understands what is explained. This instrument can be used entirety or separately, depending on the difficulties experienced by the child.

When preparing the instrument “The Magic Hat” there were defined rules and the instrument

application mode. This is an instrument that does not present an array of fixed tasks, and can be used depending on the child and the therapist needs, as well as, taking into account what the therapist wants to work. The child may work alone, following the rules of the instrument, work in a group session, or even in conjunction with the therapist.

The first drawer, corresponding to semantics, contains cards with pictograms, which are divided into three categories: animals, means of transport and objects in the house (Figure 2). For the use of these cards, the therapist places each card separately in the forehead, with the pictogram facing the child. Only with semantic clues the child should make the speech therapist to find out what is on the card.

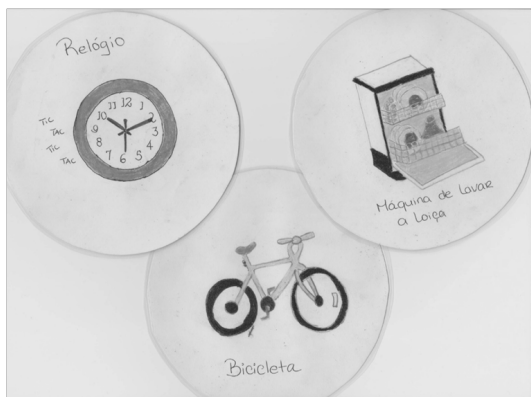


Figure 2 – Examples of 3 cards allusive to the drawer of Semantic

The second drawer concerns phonetics and phonology and covers the categories of syllabic awareness, chants (Figure 3), the word that results, rhymes and the same sound, each of which consists of 6 cards with pictograms. The exception is the syllabic consciousness which consists of 12 stamps with several pictures, aiming child to divide syllabically each image drawn by the stamp. For the use of these cards and stamps it is associated a board game with houses divided in 6 colors, lilac, pink, blue, green, orange and yellow, one dice and 4 pins.



Figure 3 – Examples of 3 cards allusive to the drawer of Phonetics and Phonology (verbally rhymes)

In the rhymes, with orange color, there are 6 cards with 2 images each that may or may not be related according to its termination. In this color it is intended that the child identify whether the words rhyme or not. The blue color corresponds to chants, consisting of six cards, each with an associated image (Figure 3). It is intended that the child read, or repeat the chant correctly. For the same sound it is associated the pink color, existing 6 cards each with two images, that may or may not be related in accordance with the initial sound of the words. It is intended that the child identifies whether two images get or not the same sound. The green color is associated with the word that results, being made up of 6 cards with a word that turns into another word. It is expected that the child identifies the remaining word, if some parts are removed. Finally, the yellow color corresponds to Stop (2 houses), Back (1 house), Next (1 house) and the End (1 house).

To play the game are required at least two players. They throw the dice, advancing with the pin corresponding with the number of houses that is indicated. Depending on the color of the house it is withdrawn a card and it is necessary to respond to what it is asked.

The phonological awareness, that is, the ability to reflect on the sound structure of speech and handling its structures, through activities such as rhymes, alliterations, syllables and phonemes produce important gains in developing concepts and skills that are pre- requirements in the literacy process 4.

In pragmatic drawer, in the third position, there are two hand puppets, which embody a boy, Afonso and a girl, Leonor. Its objective is to create a free

and spontaneous dialogue between the child and the therapist (Figure 4). This area can be worked in several ways, the speech therapist can be one of the characters and the child the other, or the child can be the two characters simultaneously, depending on what is intended to be developed.

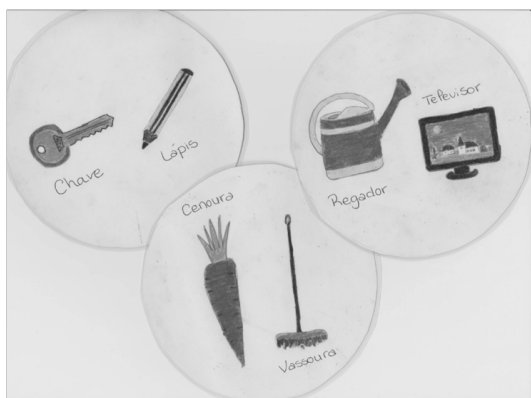


Figure 4 – Examples of 3 cards allusive to the drawer of Phonetics and Phonology (rhymes)

The puppets, Leonor and Afonso, correspond to a symbolic child, working as a driver of imagination, encouraging the child to develop not only its imagination, but also the creativity and the improvement of visual-motor perception¹⁷.

“The Cat and the Magic Hat” is a playful story that is in the fourth drawer, corresponding to the morphology (Figure 5). This story is not complete, presenting empty spaces to be filled by the child with elements related to morphology, such as, names, adjectives, determiners, among others. The story considers two children, Leonor that has a language disorder and that is receiving a huge help from his friend Afonso. The adventure begins when the cat with the magic hat appears and solves the language problem. This drawer can also contain a CD with the full story in audio.

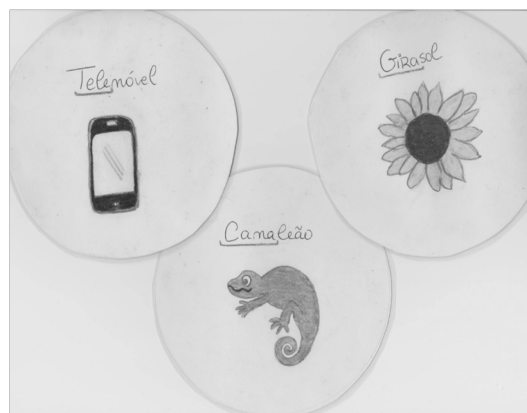


Figure 5 – Examples of 3 cards allusive to the drawer of Phonetics and Phonology (defragmentation of another word)

In the fifth and last drawer, related with syntax, there are 6 cards illustrated with pictograms actions and the corresponding sentence written incorrectly under the image so that the child can put it correctly and in logical sense (Figure 6).



Figure 6 – Examples of 3 cards allusive to the drawer of Phonetics and Phonology (the same initial sound)

This intervention instrument has been developed for the child population with language disorders aged between 5 and 8 years, which corresponds to the age of preschool and school development²³.

The normal language development follows a pattern of evolution and improvement of verbal skills. The linguistic performance depends on the interaction of the components of language (syntax, morphology, semantics, phonology and pragmatics), in order to facilitate communication with its peers to acquire the adult standard of oral language⁷.

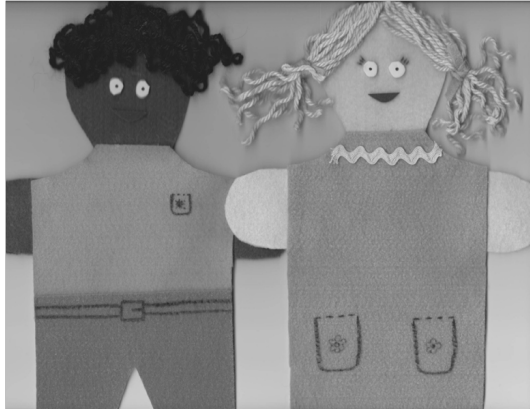


Figure 7 – Puppets representing Leonor and Afonso

The various stages of language evolution and acquisition are well established, functioning as growing milestones. It is known that with 5 years it is expected that the child make complete sentences using a speech applicant, and at age of 6 is able to learn to read and write²⁵.

Children who have disorders in terms of language in the beginning of school are more likely to develop difficulties in literacy and learning throughout their academic career^{2,7,25}.

Final consideration

“The Magic Hat” is an instrument of education to health, which consist in a hat with a hat-shaped anatomically compartmentalized into drawers. They represent the five branches of language, designed to deliver a health promotion message through the use of pictograms. During the therapy session, the exercises cards included in the hat can be used independently in different contexts.

The use of games has a very pronounced pedagogical relevance and is a valuable resource for clinical practice, because in addition to captivating and keeping the child’s attention in the activity, it will motivate it to collaborate with the intervention. Playing turns out to be important as it helps the child development in the proposed activities, entering its “world”. The use of pictograms is an added value for the construction of the instrument, both for its didactic character, and also because it enables the child to understand easily what is intended.

The instrument developed has as limits the portability of the macromodel created and, as empirical scope, the fact that it includes all areas

of language, to be attractive and easy to apply in narrow therapeutic settings and to have an easy renovation and addition of materials.

Based on the assumptions of health education, this instrument reveals a relevance to intervention, as well as, being a material that allows rehabilitating children with impaired language. It is also a playful instrument that allows the therapist to interact with the child, creating a connection and acting on early intervention.

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