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ABC Traffic Light: A Health Education Tool

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Abstract

It is during the childhood period of one's life trajectory that the exponential increase of vocabulary acquisition occurs. In Portugal, language disorders are the most frequently seen child development impairments, affecting 3 to 15 per cent of children under six years. Because delays in the acquisition of basic vocabulary can compromise inter-peer relational communication, a timely therapeutic assessment and intervention becomes all the more crucial. A speech therapy ludic-pedagogic intervention tool—the ABC Traffic Light—was created so as to aid in promoting basic vocabulary acquisition in children aged between three and six years. It consists in a traffic light with three built-in pouches, each of which containing cards suggestive of activities of varying difficulty levels. The empirical range of the proposed tool in the context of speech therapy assessment and intervention sessions should be highlighted.

Keywords

language disorder, vocabulary, speech therapy, health education

1. Introduction

Language innateness is unique to the human species *Vocabulary*—an ability for which scholars and researchers alike keep on looking for a scientific or quantifiable explanation. Along with being the chief means of communication and socialization, language is also a though vehicle. In that Man is, essentially, a Social Beingand, communication skills are considered the basis of social interaction (Coutinho, 2012). Language assumes thus a crucial role in learning and development throughout life, and it does so from the child's very birth (Mousinho, Schimed, Pereira, Lyra, Mendes, & Nóbrega, 2008).

The predominant role assumed by language led to the emergence of various explanatory theories on the rules that govern speech acquisition and development. While genetic coding does endow human beings with a predisposition to language development, it is in the course of one's interaction with the environment that the need and the motivation to communicate will arise (Guerreiro, 2013). As to that interaction, it is in the dyad adult-child that linguistic models are nurtured and grow. There are several

aspects that influence language acquisition and development, namely, socioeconomic level, the child's insertion in multilingual contexts, mother's age at pregnancy, the order of the child's birth in relation to their siblings, school context, peer interaction and parent-child interaction, joint attention ability, the amount of speech directed towards the child, and also the input channels' competences (Hoff, 2006).

It being a complex system, linguist exercise follows a set of semantic (content), morphosyntactic and phonological (form) rules, as well as pragmatics (use) (Lima, 2012).

Language development is each individual's appropriation of the sociocultural experience the adult transmits to the child via symbolic verbal behaviour, built from individual and group experience (Aguiar, 2014). Simultaneously, the neuro development that supports and controls all perceptive and motor activity is also taking place (Aguiar, 2014).

ASHA (1982) states that contemporary points of view on human language lend support to the concept that language: (i) develops within specific historical, cultural and social contexts; (ii) *qua* behaviour governed by rules, language comprises five subsystems: phonology, morphology, syntax, semantics and pragmatics; (iii) its learning and use are determined by the interaction among biological, cognitive, psychosocial and environmental factors; (iv) its actual use for communication purposes requires considerable understanding regarding human interactions, including non-verbal (para- and extra-linguistic) aspects, motivation and social roles.

In Portugal, language disorders stand as the most frequently seen child development impairments, with a prevalence ranging from 12,2% to 14,9% (Aguiar, 2014), affecting circa 3 to 15 per cent of children under six years. Most studies indicate a higher prevalence of language disorders among male children, when compared with their female counterparts (Andrade, 2008). Some studies show that it is among 4 year-olds that the highest prevalence of language disorders occurs (Aguiar, 2014). It is also during their pre-school years that children experience, and benefit from, a vocabulary explosion.

In the course of their first years of life, some children, which is statistically significant (NATION, 2008)) experience serious difficulties in language acquisition, most commonly in the form of Language Impairments (LI) (Rodrigues, 2009) or Specific Language Impairments (SLI).

Language Impairment (or delay) is defined as impaired comprehension and/or production of spoken or written word, and it may involve the earlier mentioned five subsystems (phonology, morphology, syntax, semantics and pragmatics) (ASHA, 1993). It manifests as a set of persistent difficulties well below the expectations consistent with the age of language acquisition and use, and it can be due to changes in language comprehension or production, reduced vocabulary, limited sentence structure or speech difficulties (DSM-V, 2013).

Specific Language Impairment (SLI) is characterized by an abnormal acquisition of language reception and/or expression, where either all or some language levels may be affected (Lousada, 2012).

Children with language disorders do not acquire vocabulary easily or at the same pace, at their same-age peers. Delayed vocabulary acquisition leads to precarious peer communication and peer interaction (Lacão, 2015).

Early detection of language deviations (associated with either language impairment or specific language impairment) is therefore a crucial step—one that allows the child to be referred to a specialised intervention team, preferably at a time when that child is still in their pre-school years. The main purpose of early intervention is that of tackling and overcoming those difficulties before the child starts attending school (Amorim, 2011). Considering the close interconnection between spoken and written word, it is understandable that deficits in the former (specifically, in phonological processing) can later occasion reading and writing disorders.

Speech therapy intervention with children affected by language disorders is crucial, for speech therapy is the resource that can significantly reduce detrimental consequences regarding the child's and their family's quality of life, by nipping in the bud eventual serious limitations to the child's social and educational participation and (later in his/her life) professional success (ASHA, 2011).

One of language's functions—and, incidentally, one that is highly resorted to in the context of therapeutic intervention for purposes of facilitating language acquisitio—is the ludic function. Language satisfies the need for play that is intrinsic to human beings in all stages of their lives. The need for play is all the more evident in children, for whom the need to resort to ludic elements is urgent and more recurrent than for adults (Rodrigues, 2009).

Playful activity advocates for and understands the act of playing as the child's natural means of expression, in that playing complements and structures thought, as well as the child's actions and speech. The act of playing is essential to any child's life; it is the art of living, of growing up, of expanding imagination and fantasy. In other words, it is voluntary, spontaneous, natural and exploratory, therefore recruiting the indispensability of reflection on the use and acquisition of ludic objects in health contexts (Dias, Soares, & Carrão, 2006). Playing, affection, motor skill, language, perception, representation, memory and other cognitive functions are all deeply interconnected. Children's engagement in playful activities favours their emotional balance and contributes to their appropriation of social signs (Beckert & Trenhago, 2015).

Health education ludic-pedagogic tools for speech therapy that focus on language acquisition and development are scarce, which makes the instrument we will now describe highly pertinent.

2. Description of the Instrument

The proposed tool was developed for children of both sexes, aged between three and six years—children in their pre-school stage of development.

It is a health education and promotion ludic-pedagogic instrument, to be used in individual therapy sessions, under speech therapists' guidance. It is intended as a prevention-oriented resource, to be used in early interventions focused on language disorders for purposes of, among others, vocabulary increase. It can furthermore be used as an informal language assessment tool.

The proposed tool is called "ABC traffic light" and it consists of a macromodel representative of a traffic light. It was fashioned from a cardboard box, lined with grey construction paper. To represent the

mouth, eyes, hair and the coloured circles of the traffic light proper, we used Ethylene Vinyl Acetate (EVA) of various colours. We have strategically attributed human features to an inanimate object, so as to render the object more inviting to children and thus more readily captivate their attention. This process is called "*animism*", and draws on the fact that children tend to consider non-living objects as living and consciousness-endowed beings (Carvalho, 1989).

On the back of the traffic light, we have attached three pouches, each coloured so as to mimic the colours of a traffic light (i.e., green, amber and red). Each colour corresponds to a different difficulty level of the tasks to be performed in therapeutic context. Inside the pouches, it's possible to find a combined total of ninety-eight cards, showing pictograms originally developed for this tool.

Pictograms are simplified pictorial representations of objects, actions, narratives or even abstract concepts. Pictograms should succeed in representing the object or concept they are meant denote in and of themselves (i.e., unaided by any text) and be easily identified and understood by anyone who looks at them (Dranka, 2012).

Cards contained in the *green* pouch introduce the easiest tasks. That is the pouch that therapists should begin with when they begin working with the child. It holds thirty-four cards that depict animals and transportation means; these cards can be used to exercise three different activities.

The first of those activities is called "*1, 2, 3… Find the same*" (Figure 1). The twenty-four cards depicting animals are placed, face-down, on a table (Should the child present serious memory difficulties, or should she/he be only three or four years old, this activity is to be carried out showing but six pairs at a time). The child should pick a card and, after looking at it, proceed to find the card exhibiting an image identical to the one she/he is holding. If she/he succeeds in finding the matching card, the child will move on to a different image, thus restarting the play. If she/he fail to identify the matching image, the child will lose his/her turn and the therapist begins his/her play. The player who finds the highest number of matching images wins the game.

Figure 1. Pictograms Representing Some of the Animals/Transportation Means, Featured in the Green Pouch's Activities

A second activity one can perform with the cards found in the green-pouch is called "*Which group do I belong to*?" (Figure 1). The child is initially handed two cards, one per category (animal and

transportation means). She/he will be asked whether those images belong to the same category and, should she/he answer "*no*", asked to set the cards on the table, separate from one another. The game proceeds with the therapist handing the child a new card (always one at a time), and asking him/her to decide to which group (animal *vs* vehicle) does the image belong.

With the contents of the green pouch, a further third activity—"*What am I*?"—can also be carried out (Figure 1). Twenty-two cards (twelve representing animals and ten depicting transportation means) are placed, faced-down, on the Table. The child picks a card, look at it and then put it away from the therapist's eyes. Then, the child provides clues as to the image depicted in the card she/he picked whilst never revealing the name of the animal/vehicle in question. Upon the Therapist's successful identification of the object, it will be his/her turn to pick a card and the child's turn to try to guess the object from the clues provided by the Therapist. The player that accumulates the highest number of correct guesses wins the game.

The amber pouch, corresponding to activities of intermediate difficulty level, holds forty cards: twenty images suggestive of plurals and twenty images suggestive of antonyms. Therapist and child can engage in an activity called "*Associate and Learn*" (Figure 2). The child is presented with four cards at a time and asked to correctly associate the images. She/he will then be asked to say the plural or, alternatively, the name of the object before him/her. Should the child exhibit great difficulty in performing the task, the Therapist is to present two (rather than four) cards, and work one plural at a time. The child should be stimulated to give further examples of plurals.

The activity concerning the naming of antonyms follows the same procedure as that described for plurals (Figure 2).

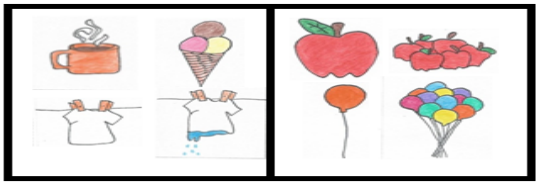

Figure 2. Example of Pictograms Used for Antonyms and Plurals

Lastly, the red pouch, corresponding to the activities with the highest level of difficulty, holds twenty four cards, representing six sequences of four images each. The activity here proposed is called "*Put the images in order and tell the story*" (Figure 3).

The child is presented with four images at a time (For children aged up to four years, the Therapist should begin by presenting only two images; later on, three images; and four images at once only if/when the child does not exhibit signs of difficulty in coping with the task). The Therapist will then ask the child to correctly sequence the images provided and then to tell a story—*one that describes what is happening in those images*.

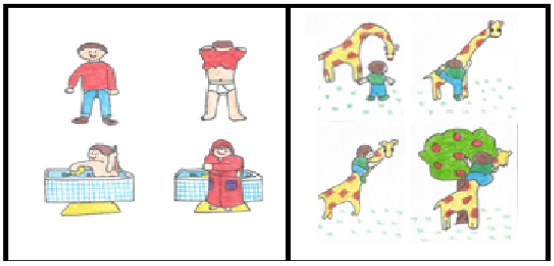

Figure 3. Example of Pictograms Where Sequences of Images are Presented

3. Final Considerations

The "*ABC Traffic Light*" is a Health Education tool, symbolically represented by a macromodel of a traffic light with anthropomorphic features. The model is complemented with a set of pictograms specifically designed for this project. The instrument's target-group is pre-school children of both sexes, three and six years old.

The instrument described in the current paper can be used at any of the three levels of prevention maintained by the WHO, via ludic and educational activities of varying difficulty levels. It also follows the guidelines for prevention in speech and language therapy issued by the Prevention Commission of CPLOL (2000), which puts forward three main guiding principles for prevention interventions, *viz.*: (i) Health information and Education; (ii) counselling and guidance for parents and professionals; (iii) early screening for language disorders in children.

The macromodel's portability could be pointed out as a vulnerable aspect of the instrument; and it may be that the amount of sequence-of-images cards presently included in the red pouch is not as plenty as needed. That said, it is worth highlighting that the "*ABC Traffic Light*" is an instrument that can be used both as Prevention and Intervention resource, and also a ludic and educational tool that can be easily adapted to other type of activities to be promoted in speech therapy interventions.

The next step, to be carried out opportunely, is to develop assessment grids that will enable that instrument to be further used as an informal intervention resource of language disorders.

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