

EDUCATIONAL TOYS ASSOCIATED WITH STORYTELLING USED WITH A CHILD WITH MULTIPLE DISABILITIES¹

BRINQUEDOS EDUCATIVOS ASSOCIADOS À CONTAÇÃO DE HISTÓRIAS APLICADOS A UMA CRIANÇA COM DEFICIÊNCIA MÚLTIPLA

Franciele Aparecida dos Santos FELÍCIO²
Manoel Osmar SEABRA JUNIOR³
Viviane RODRIGUES⁴

ABSTRACT: This study aimed to analyze the effects of educational toys associated with storytelling in the interaction of a child with multiple disabilities. A ten-year-old child diagnosed with multiple disabilities (cerebral palsy and visual impairment) participated in the study. The single subject design in the AB model was employed to verify and evaluate the study variables of the study, the dependent variable being the interaction abilities with the educational toys. The independent variable was characterized by the application of educational toys linked with storytelling and additional strategies. As resources, eight toys were selected and adapted from the kit of the LARAMARA institution for the blind, which met the research objective. The training was based on storytelling followed by the use of adapted strategies in different situations, totaling six sessions for each toy, divided into two stages, baseline (A) and intervention (B). All sessions were filmed, analyzed and scored according to the rubric gauging, to measure the participant's interaction with the toys. As results, it can be demonstrated that, in the baseline phases, the participant did not interact with the toy. However, when the intervention was introduced, there was a significant increase in the number of interactions with educational toys, as the participant was able to manipulate them and give function to all the toys. In summary, the use of educational toys associated with storytelling may indicate a possible intervention for people with multiple disabilities with the intention of offering more significant interaction with the toy.

KEYWORDS: Special Education. Multiple disabilities. Educational toys. Storytelling. Pedagogical strategies.

RESUMO: Este estudo teve por objetivo analisar os efeitos dos brinquedos educativos associados à contação de histórias na interação de uma criança com deficiência múltipla. Participou do estudo uma criança de dez anos com diagnóstico de deficiência múltipla (paralisia cerebral e deficiência visual). Foi empregado o delineamento de sujeito único, no modelo AB, para verificar e avaliar as variáveis do estudo, sendo a variável dependente as habilidades de interação com os brinquedos educativos. A variável independente caracterizou-se pela aplicação de brinquedos educativos associados à contação de histórias e estratégias adicionais. Como materiais, foram selecionados oito brinquedos do *kit* da instituição LARAMARA para cegos, que atendiam ao objetivo da pesquisa. O treinamento baseou-se na contação de histórias seguidas pelo uso de estratégias adaptadas em diferentes situações, totalizando seis sessões para cada brinquedo, divididas em duas etapas, linha de base (A) e intervenção (B). Todas as sessões foram filmadas, analisadas e pontuadas de acordo com a folha de registro, para mensurar a interação do participante com os brinquedos. Como resultados, pode-se demonstrar que, nas fases de linha de base, o participante não interagiu com o brinquedo. Entretanto, quando foi introduzida a intervenção, houve aumento no número de interações com os brinquedos educativos, pois o participante conseguiu manipulá-los e dar função a todos os brinquedos. Em síntese, o uso dos brinquedos educativos associados à contação de histórias pode ser uma possibilidade de intervenção para pessoas com deficiências múltiplas de modo a oferecer mais interação com o brinquedo.

PALAVRAS-CHAVE: Educação Especial. Deficiência múltipla. Brinquedo educativo. Contação de histórias. Estratégias de ensino.

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² Graduated in Physical Education from *Universidade Estadual Paulista Júlio de Mesquita Filho* - UNESP, Presidente Prudente - SP, Brazil. fran.aparecida90@hotmail.com.

ORCID <https://orcid.org/0000-0001-5679-9286>

³ Professor at the Graduate Program in Education and at the Department of Physical Education at the *Universidade Estadual Paulista Júlio de Mesquita Filho* – UNESP, Presidente Prudente - SP, Brazil. seabrajr@fct.unesp.br.

ORCID <https://orcid.org/0000-0002-8429-2180>

⁴ PhD in Special Education. Professor at *Faculdades Integradas de Jaú* - FIJ, Jaú - SP, Brazil. viviane_reb@hotmail.com.

ORCID <https://orcid.org/0000-0002-9351-5454>



1 INTRODUCTION

In different environments where children are present, there are the most possible diversified stimuli, whether they come from natural situations or from people who stimulate them in the midst of the relationship of interactive exchanges in playful contexts or in leisure situations. Stimuli are conditions with which children act, react, or even exchange possibilities for developing through what they feel or see under expected or unexpected conditions.

In the case of children with sensory and/or physical limiting conditions, interaction situations must be predicted, planned or even adapted to ensure that they are given stimuli and opportunities to include them and, consequently, to follow the development of their peers and to be appropriately matched.

Regarding children with multiple disabilities, this stimulation is fundamental due to the impairment caused by the disability. Multiple disabilities are characterized in the National Policy on Special Education in the Perspective of Inclusive Education (Política Nacional de Educação Especial na Perspectiva da Educação Inclusiva, 2008, p. 15) as: “association in the same individual of two or more primary disabilities (mental/visual/auditory/physical), with commitments that lead to delays in global development and adaptive capacity”. This characterization is reiterated by Decree No. 3,298, of December 20, 1999 (Decreto nº 3298, 2009), which points to multiple disabilities as an “association of two or more disabilities”. Thus, discussions about the concept of multiple disabilities are vehement, but there is no consensus in the literature regarding the aspects that define it (Teixeira & Nagliate, 2009).

Some authors advocate a deepening of the concept of multiple disabilities, since it is important to emphasize that this should not only be understood as the sum of two or more disabilities, “but rather as acute limitations in the cognitive domain, in the forms of interaction, communication, language, sensory-motor skills, social competence and the adaptability of the subject” (Bruno, 2009, p. 37). However, it should be noted that many diagnoses given to people with multiple disabilities are not based on assessments that verify each of these aspects described. It would be imperative to consider the means by which people with multiple disabilities perceive, know and interact with the environment. Thus, in order to consider the impact of multiple disabilities, it is not enough to understand only the disabilities that are associated, but rather their effects on the person’s functionality in relation to the environment in which he/she lives.

The association between visual impairment or blindness and physical disability is characterized as a type of multiple disability (M. Rocha & Pletsch, 2015). Children with motor and/or visual limitations may develop more slowly, but these limitations may be overcome or minimized by sensory, perceptive and motor stimulation, a preponderant factor in body schema construction, coordination, spatial orientation, laterality and balance, strengthening ties, physical performance and dexterity (Warren, 1994; Porreta, 2016; Lieberman, 2016; A. Silva, Valenciano, & Fujisawa, 2017).

The person with multiple disabilities, when given opportunities to play, improves the skills of motor coordination, cognition, language, socialization and attention (Peres, 2004; Lomônaco & Cazeiro, 2006; Bruno, 2009; Diretrizes de Atenção à Pessoa com Paralisia Cerebral [Guidelines for Attention to Persons with Cerebral Palsy], 2013). In this direction,

the focus is on the child to interact with the environment and with the objects and, in turn, to know, recognize and discriminate people, places and objects with motor skills, sensory and perceptual capacities. In the case of absence of vision, these actions potentiate the use of the remaining senses, which in result can put the child in a position to offer feedback in the face of varied stimuli (Bruno, 2009; S. Nunes & Lomônaco, 2010; Lieberman, 2016; Lieberman & Houston-Wilson, 2017).

The toy as an object of support for play (Kishimoto, 2012) and also understood as a cultural object (Lira & Rubio, 2014), with meanings and representations of social contexts with different understandings (Vygotsky, 1991; Friedmann, 1996; Negrine, 2002; Biscoli, 2005; Cordazzo & Vieira, 2007; Bruno, 2009) may, in the case of the child with disabilities, involve aspects such as environmental, cultural and social barriers that prevent or hinder that this action, so significant of the play, is in fact established.

In Spencer-Cavaliere and Watkinson's (2010) conception, it is of paramount importance that the child with disability has the feeling of being a legitimate participant in the activity. Relationships can only be established when they reach all students (Nacif et al., 2016). As it can be seen, most of the time there are inadequate playgrounds and toys, as well as the lack of friends/peers to interact with these people. The support offered and the necessary adaptation can make social relations, through cultural diversity, integrate the children with disabilities, in the moment of play, the perception of acceptance by the peers in face of their differences.

To meet this demand, educational professionals as well as therapists have used, adapted or acquired pedagogical resources in order to enhance the functionality, interaction or even the performance of these subjects in activities of daily living and, therefore, give subsidies so that they make best use of their functional potential in educational activities (Lieberman & Houston-Wilson, 2017; A. Rocha & Deliberato, 2012; Seabra, Fiorini, & Manzini, 2015).

In Brazil, many "educational toys", as Sialyus (2005) calls them, were proposed, in the *Brincar para Todos* (Play for All) guidelines, developed with the purpose of providing sensory stimuli, aimed at blind and low vision children to minimize existing barriers in conventional toys that limit exploitation, manipulation and the act of playing.

S. Silva (2009) used some adaptations of the educational toys developed by Sialyus (2005) to develop stimulation kits applied by parents to children with visual impairments. Six children with low vision of two years of age participated in this study. As a result, improvements in motor skills, use and increase of residual vision could be observed, in order to provide more independence and autonomy through the activities that involved the educational toys.

In the literature, there is a shortage of studies that involve the person with multiple disabilities (cerebral palsy and blindness) in situations of interaction with educational toys. However, some studies that approach this subject will be described, such as DiCarlo, Reid and Stricklin (2003), Lancioni et al. (2010) and Bataglion, Zuchetto and Nasser (2014).

In the study conducted by Bataglion et al. (2014), the authors involved the performance of seven children with various disabilities, including cerebral palsy and visual impairment. The activities provided were: six on the ground: meeting peers, bunny out of

the hole, duck duck goose, dead lions, statues, *bate-manteiga*⁵. In the pool, they performed six more activities: shuffling spaghetti, volleyball, basketball, handball, treasure hunt, and *sai tainha*⁶. The intervention consisted of: giving additional information regarding activities, giving demonstrations and stimuli, moving aids, getting material aids, verifying the need for movement adaptations, and giving more time to accomplish the task. As a result, the authors pointed out that the intervention interfered positively in the motor performance of the participants and allowed more involvement in the activities, considering that it was essential to adjust the activities to provide, in addition to developing motor skills, improvements in self-esteem and physical conditioning.

Children with physical and sensory impairments engage less in play involving toys and need more support to engage in interaction with toys (Dicarlo et al., 2003; Lancioni et al., 2010; Bataglion et al., 2014). Thus, DiCarlo et al. (2003) aimed to increase the number of playful toys by participants in an inclusive classroom environment. Two intervention options were used: the choice of preferred toys only, and preferred toy choices plus suggestions and praise. Three children participated in the study, one child with developmental delay and two with cerebral palsy of approximately three years of age. The results indicated that there was increased play among children during the routine of an inclusive classroom. For a child, the choice of favorite toys showed an increase in the total number of plays with toys. For the other two children, the choice of favorite toys plus suggestions and praise had the biggest increase. However, it was concluded that when children are stimulated to play and, mainly, they can choose their toys, more interaction with the toys will occur, besides that if they are with a favorite toy, receive instructions and suggestions from another and, at the end, receive a praise, the chance of increasing interaction with the toy is higher, as observed in two participants.

As the study conducted by Lancioni et al. (2010), the choice of an interesting toy and its adaptation makes a difference in the engagement and manipulation of the person with multiple disabilities at the moment of interaction. The authors analyzed the manipulation of toys by two children of five and nine years old with multiple disabilities (intellectual deficiency and cerebral palsy) and could perceive the amount of manipulation through devices that detected the number of movements of the participants. The intervention consisted in offering positive stimuli (music, familiar voices, vibrating toys and light displays) to observe if there was more manipulation of toys by participants with the presence of stimuli. As a result, the intervention proved to be effective in increasing the responses of toy manipulation by the two participants when offered positive stimuli.

Based on that, it can be understood that the use of educational toys may be a possibility to stimulate the child with multiple disabilities and, consequently, reduce the physical and sensorial damages that are imposed during play. Thus, it is justified the academic

⁵ Two groups face each other. The palm of one of each participant's hands should face up. One of the participants goes to the opposing group and lightly slaps the hands of all the children and runs back to his/her group while being pursued by the one who received the strongest slap.

⁶ A group lines up singing a specific song (about a fish) and have to follow instructions, example: put your hand on your head and waist; put your hand on the body of the person in front of you. When you sing "put the mullet on the street" you make the movement as if you were throwing or pushing the peer who is facing the street - forward - and the one at the beginning of the queue (who does not push anyone) plays the role of the fish and goes to the "street". This one that was forward goes to the end of the line and the game begins again.

and social importance of this study, with the premise that few studies have been found that related educational toys aimed at people with multiple disabilities and also with the possibility of envisaging an intervention methodology focused on the interaction of children with multiple disabilities with educational toys associated with storytelling, which in this study was understood as a strategy used for the child to explore and interact with the toy. Hence, the purpose of this paper was to analyze the effects of educational toys associated with storytelling in the interaction of a child with multiple disabilities.

2 METHOD

2.1 ETHICAL PROCEDURES

This study was submitted and approved by the ethics committee of the university. The Certificate of Presentation for Ethical Appreciation (called CAAE) of the research has the approval No 40342414.0.0000.5402. The person responsible for the participant authorized the participation by signing the Informed Consent Form and the Photography and Filming Form.

2.2 PARTICIPANT


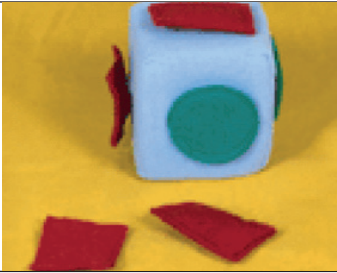
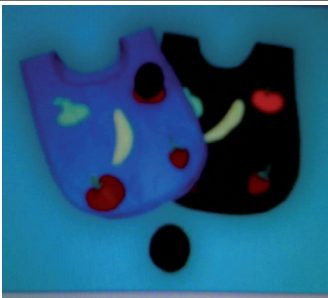

A ten-year-old male child with a multiple disability diagnosis participated in the study. In this case, it refers to the concomitance of congenital blindness, without visual remnants, easily recognizes familiar environments, sounds and objects. He was affected by non-progressive chronic encephalopathy (Spastic Diplegia), better known as cerebral palsy, a disability that has caused motor problems, such as difficulties in fine and gross motor skills of the upper limbs and locomotion, without cognitive impairment and verbal communication preserved. The participant is a wheelchair user with inefficient trunk control, he does not move the chair independently. This child is regularly enrolled in Elementary School, cycle I, of the municipal school network. The information about the characterization of the participant was taken from a report containing the diagnosis and other evaluations carried out by a multiprofessional team.

2.3 LOCAL

The study was conducted at the participant's home because of the difficulty of transportation availability. The sessions took place in an airy and brightly lit room with tatami mats arranged so the toys could be exposed and accessible to the participant.

2.4 MATERIALS AND EQUIPMENT

Educational toys were selected from the LARAMARA Institute: Brazilian Association for Assistance to the Visually Impaired (Siauly, 2005). Of the 109 educational toys that compose the book, eight were selected that offered, among other purposes, the motor and sensorial stimulation in attendance to the conditions of the participant. The toys selected were as described in Table 1:

Toys	Description
Amassadinha (Smashed)	
	<p>Small colored rubber balloon, stuffed with wheat flour, shaped like a ball. This ball should be very flexible so that it totally changes shape when tightened. On one side of the ball elements that imitate eyes, nose and mouth are placed. At the top, wool yarn to imitate hair, which can be yellow or black, long or short. Objective: To awaken the desire to move and perform activities, to know and understand their body and the environment, to develop and integrate the senses.</p>
Geometric cube	
	<p>Cube made of foam, measuring 10 cm x 10 cm, lightweight and lined with soft fabric. In each face of the cube, there is a Velcro application where a two-dimensional geometric figure made in colored felt is attached; there are three pairs of different figures. Objective: To develop the touch for the recognition of shapes and textures, to develop organization temporal space.</p>
Cole Ball	
	<p>Two vests, one black and one blue, made of nylon fabric. On the back there are colored Velcro strips. At the front, there are applications of figures of five different fruits, covered with Velcro. Two white balls accompany them, covered with feather fabric. Objective: To awaken the desire to move and perform activities, to know and understand their body and the environment, to develop and integrate the senses.</p>
In one's ear	
	<p>Panel made of soft, quilted and colored fabric, measuring 100 cm x 80 cm. On the panel there are ten small cloth rings. In this, 15 cm elastic bands are attached. At the end of the elastic bands, there are sounded toys: tambourine, bugle, rattle, whistle, harmonica, accordion, etc. The elastic bands can be removed so that the toys can be used individually. Objective: To understand and identify sounds, to know and understand their body and the environment.</p>

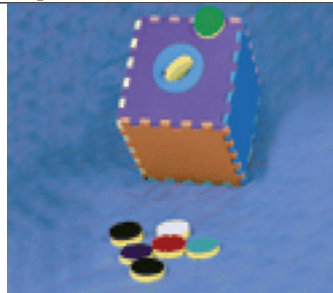



<p>Surprise cube</p> 	<p>Six square plates, 32 cm each side, made of varied colors. The plates fit together to form a cube; two sides of the cube have rounded openings through which the child can insert his/her hands. Inside the cube, there are ten circles, made of the same material of the box, covered on one of the faces by materials of different textures, forming five pairs of different textures. Objective: To develop tact in order to recognize textures, shapes, temperature, size, weight, consistency and materials of which objects are made, to develop structuring and spatial organization.</p>
<p>Groping</p> 	<p>Carpet made of colored fabric, soft, padded, rectangular, measuring 130 cm x 90 cm. On the carpet, different objects and toys are attached with elastic bands of 15 cm in length: a ring, a comb, a shuttlecock, a mug, a hairbrush, a bath sponge, a deodorant stick, a teddy bear, a bag containing glasses. The elastic bands can be removed easily, as the objects should not be used all at the same time, but two or three at a time. The elastic band makes it easy for the child to retrieve the objects. Objective: To understand and identify objects, to know and understand the environment.</p>
<p>Body ball</p> 	<p>Two panels of wood, of white color, measuring 85 cm in height and 62 cm of width. On the panels, the figures of a girl and a boy with the same height of the panel are glued. The dolls are made of feather fabric and wear brightly colored clothes, shoes and socks made with the same fabric and the skirt stands out from the panel. The dolls have hair, but the girl stands out from the panel and is tied with ribbon. Two black balls with Velcro elements that facilitate the adherence to the fabric of the dolls accompany it. Objective: To awaken the desire to move and perform activities, to know and understand their body and the environment, to develop and integrate the senses.</p>
<p>Latches and tricks</p> 	<p>It is a rectangular wooden box, measuring 29 cm x 15.5 cm x 22 cm, similar to a toolbox used by carpenters. On the four sides and at the top, there are eight little doors with various latches, locks, keys, handles, safety chains etc. Inside it, there are replicas of tools made of plastic, screws and washers, sandpaper, a wooden board, an architect ruler and tape. Special pencil for wood, used by carpenters. Objective: To recognize the objects of the environment, their names, use and function.</p>

Table 1. Presentation and description of the selected toys.

Source: Elaborated by the authors.

2.5 EXPERIMENTAL DESIGN AND PROCEDURES

In this research, the AB (Gast, 2009) design was used to allow the analysis of changes in the subject's behavior before, during and after the intervention, in order to infer the relationship between intervention and behavior change, that is, probable relationships between dependent and independent variables (Horner et al., 2005; Kratochwill et al., 2010).

The variables of the study constituted a dependent variable as being the interaction abilities with the educational toys. The independent variable was characterized by the application of educational toys associated with storytelling. In this sense, to measure the variables of the study, the rubric gauging sheet was used as a data collection instrument that presented the scores from zero (0) to four (4) points. Thus, 4 points meant that the subject gave more than one function to the toy - example: when the participant played the expected game for that toy and added another function; 3 points when the subject gave function to the toy - example: when the participant performed the expected game for that toy; 2 points when he interacted with the toy - example: when he took the toy in his hand and manipulated it; 1 point when he had contact with the toy - example: only when he took it in his hand; zero point when he had no contact with the toy - example: totally ignored the toy.

The participant had 10 to 20 attempts to interact with the toys. In this sense, the score of each attempt was from zero to 4 points. The total of points reached by the participant in the session was divided by the total of possible points, multiplied by 100. The result of the calculation generates the percentage of responses of the participant's interaction with the toy associated with the storytelling.

After defining the variables of the study and its measurement, the data collection was started in two weekly sessions with duration of approximately one hour each. Each day, two toys were used, one at a time with a 20-minute interval between sessions. After finishing, two other toys were started, and so on. The data collection in the phases of the AB design was divided into two steps, baseline (A) and interventions (B). The baseline consisted of three sessions for each educational toy. It consisted of the contact of the participant with the toy without the presence of storytelling and without the use of verbal or physical aids, that is, without any interference of the researcher, being a moment free of interaction or not with the toy. The observations were recorded in order to consider the aspects presented in the rubric gauging sheet.

The intervention was introduced after the baseline. Three sessions were held for each educational toy associated with storytelling. At that moment, the researcher used some strategies that consisted of physical and/or verbal assistance to stimulate the participant, providing different and new interactions with the toys. Table 2 presents a description of the intervention in order to consider the use of educational toys, storytelling and strategies used.

Educational toys	Storytelling “I’ll tell the story, you’ll tell the story”: subjects of the child’s interest, in which the researcher told a part of a story and the participant continued to complete the story with the use of educational toys.	Strategies used	
		Physical assistance	Verbal assistance
Amassadinha (Smashed)	Theme suggested by the participant: tell stories about the trajectories of the artists of his/her favorite songs.	Put the toy in the child’s hand and assist the movement in the hands.	Different situations were presented in the story so that the child introduced the toy and used the imagination to give function to it.
Geometric cube	Theme suggested by the participant: tell stories about favorite songs and excerpts from these songs that make him/her admire the writers.	Assistance to detach and attach the pieces.	Verbal assistance to find the pairs. Example: turn up, turn down, turn once more.
Cole Ball	Topic suggested by the participant: tell stories about shopping at the supermarket.	Assistance to glue and take off the Velcro to wear; put it on the body correctly.	Through the story, stimulate and awaken the imagination of the child.
In one’s ear	Theme suggested by the participant: tell stories from his/her imagination about being a singer and a teacher.	Hold the base mat so that it does not slip; uncoil objects.	Verbal assistance to use all the instruments present in the toy.
Surprise cube	Topic suggested by the participant: tell stories about his/her difficulties with the wheelchair and about transportation.	Hold the box to get the pieces.	Verbal assistance to find the holes in the box and identify the pieces.
Groping	Theme suggested by the participant: to tell stories about school activities as if he/she were the teacher: what would he/she do?	Hold the base mat so that it does not slip; uncoil the objects.	Verbal assistance (through a story) to use all the instruments present in the toy.
Body ball	Theme suggested by the participant: to tell stories about country songs and their characters.	Hold the frame; remove the ball from the figure’s clothing; move the toy.	Emphasis on the story to arouse interest in using the toy; assistance to place the ball in the correct place.
Latches and tricks	Topic suggested by the participant: to tell stories about school and peers: how to get help and what would he/she do if he/she were the principal.	Assistance to open the wooden roof to remove the pieces and to fix the toy.	Help finding the sides of the house.

Table 2. Description of the intervention: educational toys associated with storytelling and strategies used.

Source: Elaborated by the authors.

The storytelling was named “I’ll tell the story, you’ll tell the story” because of the characteristics of the proposal that involved the joint construction of the researcher and the participant, in order to promote the interaction of the participant with the toys and awaken his imagination to give varied functions to certain toys.

For this to be possible, the stories were constituted from themes of interest pointed out by the participant him/herself. The following questions were asked: What do you like to do in your free time? In which places do you like to walk? What do you like to eat the most? From these questions, the storytelling that led the participant to imagine and create a “make-believe” was proposed. In this way, one of the places that the participant liked to walk was the supermarket. Consequently, the supermarket was one of the themes proposed, identified in the issues described above. For example: Researcher: Once upon a time there was a woman named Joanna, her and her children went to the supermarket to shop, when, suddenly ... Participant: The son wants to buy a fruit ... Researcher: What fruit would it be, my dear, a banana? Participant: No, a mango (he picks up a fruit from the educational toy Cole Ball).

2.6 INTEROBSERVER AGREEMENT

The reliability index was measured by the second author in 25% of the sessions of each phase, that is, a baseline session and an intervention session was watched for each game. The final calculation was performed by the number of agreements divided by the number of agreement plus disagreement, multiplied by 100 (Hersen & Barlow, 1982), thus obtaining 81% agreement.

3 RESULTS AND DISCUSSION

The data collected at the baseline A and intervention B are represented in Figure 1. The X-axis represents the number of sessions associated with the baseline (A) as well as the interventions (B) of each toy. In the Y-Axis, the percentages of responses regarding the participant’s interaction with the toys are represented. The data were demonstrated by means of the relative frequency distribution for better analysis.

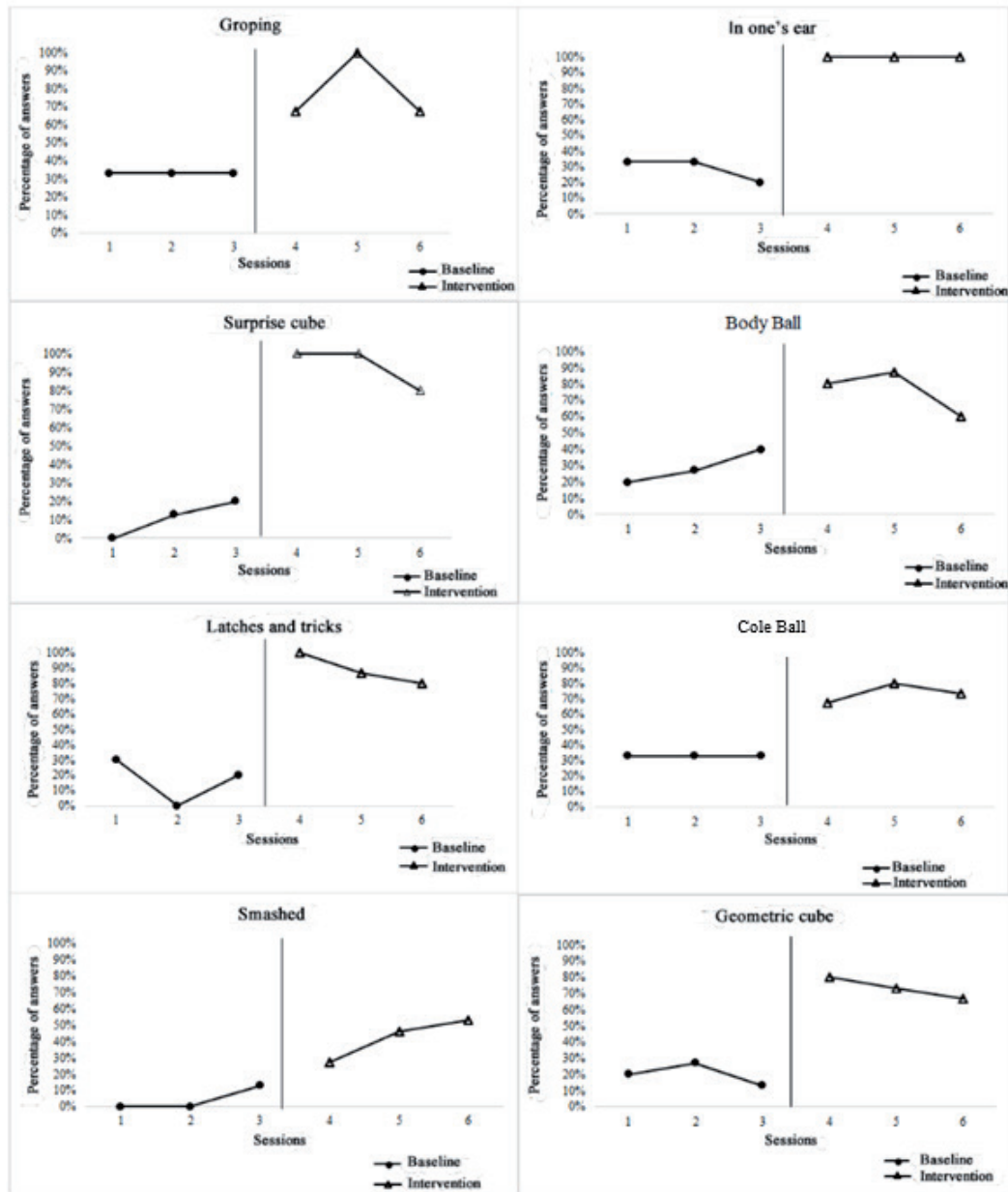


Figure 1. Performance of the participant in the Baseline sessions and intervention according to each toy.

Source: Elaborated by the authors.

The graphical representation of the Groping educational toy (Figure 1) shows that, at the baseline, in three consecutive sessions, the participant scored 33%. With the introduction of the intervention, the average was 78% (range: 67% to 100%). Thus, three baseline sessions

were conducted with five attempts in each session, and in each of them, the participant obtained five points, totaling 33% in each session. In the intervention, three sessions were performed. In the first session, 10 points were achieved in five attempts, obtaining 67% of hits. In the second session, five attempts were made and the participant obtained 15 points, reaching 100%. In the third session, in five attempts he obtained 10 points, reaching 67% of hits. It is observed that the score was much higher than the baseline. However, the variation of the score was due to the limitation of the toy itself, which at times made it difficult to be manipulated, since the toy base, consisting of a padded rug, impaired the participant's mobility and influenced the exploration of all elements contained in the resource.

The studies by C. Nunes (2008) and Amaral, Saramago, Gonçalves, C. Nunes and Duarte (2004) show that children with multiple disabilities need to be exposed to the most diverse experiences and activities in order to guarantee the development of learning. For this, it is essential that they receive information about the external environment and may interact. It is necessary to respect the time it takes them to understand and respond to a stimulus offered to them.

In the *Surprise cube* toy (Figure 1), in the baseline, it was verified that there was a small increase in score, with an average of 10% (variation of 0% to 20%). This result occurred because the student, at the beginning of the baseline, showed a lack of interest in the toy and lack of previous experience. In that sense, in the first baseline session, five attempts were made - the participant did not get any score. In the second session, the participant reached only two points in five attempts, reaching 13%. In the third and last baseline session, he got three points in five attempts, reaching 20%. During the course of the day, his interest increased, but in a very restricted way for being a toy with equal parts and formats. In the intervention sessions, this interest was aroused through stimuli (storytelling) and strategies (physical and verbal assistances) used. He obtained an average of 93% (variation from 80% to 100%). In the first intervention session, five attempts were made. He obtained 15 points, as he reached 100% accuracy; the same occurred in the second session. In the third session, the participant got 12 points in five attempts, reaching 80% of hits.

To G. Preisler (1993) and Lieberman (2016), blind children show a greater interest in semi-structured play, that is, there was an orientation of what should be done, such as painting. When it comes to free play as "make-believe", they have difficulty understanding the meaning of play, which makes them interact less. Consequently, as explained by S. Nunes and Lomónaco (2010), strategies and programs that ensure adaptations to promote participation of these people should be developed, as the blind person will use other mechanisms, especially tactile-kinesthetic exploration, to explore and know the world.

However, when they are in the presence of an adult, they can play more interactively. This can be decisive so that the participant has not interacted with this toy in a baseline. Troster and Brambring (1994), Lancioni et al. (2010), Bataglion et al. (2014) also point out that blind children when exposed to free situations with predetermined toys end up having less interest. Having said that, agreement with the study in question is established, as it is consistent with the fact that storytelling and strategies used by the researcher were fundamental to the interaction and manipulation of the educational toy.

In the toy *Latches and tricks* (Figure 1), in the baseline phase, there was an average of 17% (variation from 0% to 30%). Thus, in the first baseline session, five attempts were made, the participant obtained five points, reaching 30% of hits. In the second baseline session, five attempts were made and the participant did not get any hits. In the third baseline session, in five attempts, he scored 3 points, reaching 20% accuracy. With the introduction of the intervention, the participant obtained an average of 89% (variation from 80% to 100%). Thus, five attempts were made and he obtained 15 points, reaching 100% of hits. In the second session, five attempts were made and the participant obtained 13 points, reaching 87% of hits. In the third session, in five attempts, he got 12 points and reached 80% of hits. The hits occurred at the first moment, in which the participant showed great interest in the toy. Nonetheless, during the course of the study he presented difficulties in manipulating, but with the stimuli, these difficulties were overcome, demonstrating that the strategies and the stimuli were efficient for the participant's interaction. Gallahue and Ozmun (2002) emphasize the importance of providing resources, equipment and time, as elements of great importance to enable children to practice their motor skills in development.

In the toy *Smashed* (Figure 1), the average score in the baseline phase was 4% (range 0% to 13%). In the first and second baseline sessions, the participant did not get any score, only in the third session in five attempts, he obtained two hits, characterizing 13%. In the intervention phase, he obtained an average score of 42% (variation from 27% to 53%). In the first session, five attempts were made, obtaining four hit points, totaling 27%. In the second session, he scored seven points in five attempts, totaling 46%. In the third session, it reached eight hit points, 53%. Educational toys are adapted proposals of toys; however, some needs are peculiar to each individual, especially when it comes to a person with multiple disabilities. Children with multiple disabilities "have varied functional potentialities and concrete needs that need to be understood and considered. They sometimes have unusual interests, different levels of motivation, unusual ways of acting, communicating and expressing their needs, desires and feelings" (Associação de Assistência à Criança Deficiente⁷ [AACD], 2006, p. 13).

In the toy *In one's ear* (Figure 1), at the baseline, the mean was 29% (range: 20% to 33%). Three baseline sessions were held. In the first and second sessions, the participant obtained, in five attempts in each session, five hit points, reaching 33% in both sessions. In the third session, he obtained, in five attempts, three points of success, totaling 20%. In the intervention, there was stability, obtaining 100% in three sessions. All sessions were conducted in five attempts each. This score is due to the strategies used, since it allowed the participant to explore all the space of the toy and its objects, besides using the imagination to give the most varied functions. The most necessary strategies were some adaptations in order to provide greater mobility in their manipulation.

The exploration is considered one of the most important motor actions for the development of children with multiple disabilities, regarding the visual changes, since the manual motor actions that involve shaking, strumming, transferring and manipulating potentiate significant changes in the motor development (Schmitt & Pereira, 2014).

⁷ Association for Assistance of Disabled Children.

In the *Body Ball* toy (Figure 1), the average score in the baseline phase was 29% (range: 20% to 40%). In the first baseline session, in five attempts, he scored three hit points, reaching 20%. In the second session, in five attempts, he scored four points, totaling 27%. In the third session, he reached six points, obtaining 40% of hits in five attempts. At that moment, the participant began to show interest in the toy and to use the imagination in relation to the function. In the intervention phase, this score increased, due to the possibilities offered by the toy with a mean of 76% (variation: 60% to 80%). In this sense, five attempts were made in the first session and the participant got twelve points, totaling 80% of hits. In the second session, he scored 13 points, reaching 87% in five attempts. In the third session, he obtained 9 points, achieving 60% of hits in five attempts.

In the *Cole Ball* toy (Figure 1), the score remained stable for the baseline reaching 33% in all three sessions. Five attempts were made in each session, and in each one, he obtained five points, making a total of 33%. In the intervention phase, the mean was 73% (range of 67% to 80%). Thus, in the first session, he got 10 points, achieving 67% of hits in five attempts. In the second session, he obtained 12 points, reaching 80%; and, in the third session, 11 points, obtaining 73% of correct answers. The strategies used made it possible to reduce the difficulties of the participant, as he was able to explore and use his imagination to use the toy.

C. Preisler and Palmer (1989) studied children of two and three years old and found that they had greater interaction with the toy and with games when there was adult participation, in order to increase the interaction between them after the proposals of games made by the author. This demonstrates the importance of stimulation to occur from the earliest years of the child so that this interaction becomes visible in other phases of life. The same occurred for the toy referred, greater interaction when he was stimulated and played with the researcher.

In the last toy, *Geometric Cube* (Figure 1), it was found that, in the baseline phase, an average of 20% was obtained (variation from 13% to 27%). In the first session, he reached three points, 20% of hits. In the second session, four points, 27% hits. In the third session, two points, 13% of hits. This oscillation occurred because the participant did not demonstrate motivation for the toy, besides that the varied functions (recognition of the three different geometric forms, texture differentiation, organization, temporal space) that the toy demanded could have hampered the performance of the participant who was not familiar with the toy. In the intervention phase, he obtained an average of 73% (variation from 67% to 80%), due to the strategies used that stimulated the participant to feel the most varied functions that the toy could provide. In the first session, he scored 12 points, 80% of hits. In the second session, 11 points, 73% of hits. In the third session, 10 points, 67% of hits. All sessions were performed with five attempts.

It is emphasized that the child, for various opportunities, felt insecure to manipulate, explore and give any function to the toy, which confirms the findings of Revuelta, Andrés, Rodríguez-Porrero and Escudero Pérez (1992), who say that the child with multiple disabilities, in the case of blindness is one of them, when in the presence of an adult, the child feels safer due to the motivation, support and control over the environment, which ends up causing the child to have different attitudes towards the interaction with the toy and his/her way of playing.

Considering the results obtained in this study, it can be verified that the difficulties encountered by the participant are associated with the lack of knowledge and previous stimuli (physical experience). Manzini and Santos (2002), Basto and Gaio (2010), S. Nunes and Lomónaco (2010), Masini (2011), Lieberman (2016), Porreta (2016) highlight the importance of the stimuli of the remaining senses in the life of the person with visual impairment, as well as the strategies, evaluation and intervention for the development (Pletsch, 2015) are fundamental to the lives of people with multiple disabilities. Bruno (2009), Masini (2011) and Kishimoto (2012) report the importance of the child's contact with toys in the early stages of life, which may give subsidies so that, in other phases, he/she can have direct interaction in the environment in which he/she lives and with equal opportunities.

4 FINAL CONSIDERATIONS

In summary, these data denote that, in the baseline condition, the participant did not demonstrate evolution in the interaction with the educational toys, which presupposes that the physical and visual limitations added to the insecurity to maintain contact and to be autonomous in the interaction and function of the toy deprived the child's performance. In the intervention condition, the participant interacted and assigned function to the toys, which shows that the selected educational toys, as well as the storytelling and strategies used were adequate.

Thus, in the area of special education, this study can demonstrate that the resource alone was not enough to stimulate and promote the development of participant interaction skills. Consequently, only after the use of strategies (physical and verbal assistance) as well as the use of storytelling, the interaction of the participant with the educational toys was superior. The support offered in the use of the resource made a difference in the quantity and quality of the participant's interaction with the educational toy.

In this sense, the use of educational toys associated with storytelling may be a possibility of intervention for people with multiple disabilities in order to offer greater interaction with the toy, but only with the direct interference of the researcher/teacher can the training be considered functional. It can be suggested that future research involve a greater number of participants and different ages for generalization of the results.

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