

# THE IMPORTANCE OF A TOY IN THE DEVELOPMENT OF CHILDREN WITH VISUAL IMPAIRMENT<sup>1</sup>

**Carla Rosane da Silva Tavares Alves**

Doctor in Letters – Compared Literature (UFRGS),  
Coordinator of the Graduate Program in Sociocultural Practices and Social Development (Unicruz),  
Cruz Alta, Rio Grande do Sul, Brazil.

**Maihara Pereira Franco Andrade**

Master in Sociocultural Practices and Social Development (Unicruz). Teacher of the state education  
network of Rio Grande do Sul.  
Santa Maria, Rio Grande do Sul, Brazil.

*The educational toy defines itself [sic] as a methodical transmission agent of knowledge and skills that, before its emergence, were not transmitted to children by toys. It symbolizes, therefore, a deliberate intervention in children's leisure in order to offer pedagogical content to the children's entertainment (OLIVEIRA 1984 apud BUENO, 2010, p. 25).*

## **Abstract**

*This text summarizes a qualitative bibliographic research that aims to discuss what visual impairment is, highlighting the difference between blindness and low vision, as well as highlighting the importance of the toy associated with playing, in the learning of children with Visual Impairment-VI. The exploration of the toy expands the possibilities of the child's development in his/her multiple dimensions, cognitive, psychomotor and social affective, among others.*

**Keywords:** Joke; Learning; Child with Visual Impairment;

## **1. Initial Considerations**

The school is the institution of collective character prepared for offering the necessary conditions for the construction of knowledge and development of cognitive, affective, biopsychosocial and psychomotor potentialities, in the different phases of the human being, but notably in childhood, considering that it is the basic period in which the child goes through the process of construction and socialization, so significant for his/her life.

In this sense, it is worth remembering that, "To care is necessary first of all to be committed to the other, with its uniqueness, to be sympathetic to their needs, relying on their abilities. This depends on

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<sup>1</sup> This text was produced from the article "The contributions of the toy in the significant learning of children with visual impairment, of our authorship, published in Eduardo Scheidt; Luis Gutiérrez Sanjúan; Elian Araújo. (Org.). Integration in Latin America from an interdisciplinary perspective. Ied. Curitiba: Prismas, 2017, v. 1, p. 367-384.

the construction of an affective bond between those who care and are cared for" (RCNEI –Vol. 1, p. 75, MEC/SEF, 1988).

In historical terms, it was from the 17th century that schools were considered as a place where everyone, teachers and students, transmit and acquire new knowledge and are in a constant learning process, and teachers are conceptualized as mediators of this new knowledge. The school is very important in the lives of all students, being, therefore, one of the main ways to mediate the relationships and interactions between students-students/students-teachers, thus promoting new significant learning in the lives of both parts.

Taking a leap to contemporaneity, currently, schools are experiencing a process of major changes and adaptations, to receive students with Special Educational Needs – SEN, and today these students have the right to guarantee their enrollment in the public school system and these schools must be prepared to receive such students and assist them in the teaching-learning process.

Based on these considerations, this research seeks to discuss what visual impairment is, highlighting the difference between blindness and low vision, as well as highlighting the importance of the toy associated with playing, in the learning of children with Visual Impairment-VI. In this direction, the notion of an inclusive education is also discussed and is imperative to the contemporary scenario, as something naturalized and unquestionable to relations, not only educational, but also social.

It is important to highlight that visual impairment -VI, in the educational context, has undergone many mutations, as well as other deficiencies, conceptions and concepts about Visual impairment have improved over time through school inclusion. The inclusive approach understands that school is an environment common to all, where knowledge is constituted; in inclusive school, all people resemble by their own differences.

## **2. What constitutes Visual Impairment - VI: low vision and blindness**

First, it is necessary to remember that low vision is a disability that needs to be diagnosed as soon as possible, so that the child obtains better development conditions, and in the school environment, this child will need the proper use of accessibility resources for students with this disability.

In terms of classification, blindness is seen in two groups: a) congenital blindness and b) acquired or adventitious blindness. Congenital blindness is particularly defined by the lack of vision, a fact that can occur from birth to five years. Acquired blindness is evidenced by vision loss at any stage of life, which may be due to some infectious diseases, systemic diseases or traumas.

The degrees of vision cover a wide spectrum of possibilities: from total blindness to perfect vision, also total (GIL, 2000). The expression "visual impairment" refers to the spectrum that goes from blindness to subnormal vision. Visual impairment is understood in two distinct groups: a) blindness and b) low vision, as Bruno (1997, p. 07) points out, from the educational point of view, these groups are characterized as:

Blind people, who present 'from total absence of vision to loss of light projection', whose learning process will take part through the integration of the senses: tactile-sinesic- auditory-olfactory-gustatory, using the Braille System as the main mean of reading and writing.

People with low vision, who present 'from conditions to indicate light projection to the degree to which the reduction of visual acuity interferes or limits their performance'. The educational process will be developed by visual means even if the use of specific resources is necessary.

From the medical perspective, Visual Impairment-VI is identified according to the International Statistical Classification of Diseases and Related Health Problems (ICD-10), the description of VI uses as indicators the values of visual acuity and visual field.

Low vision consists of a significant change in the functional capacity of vision, resulting from some factors, such as lowering of visual acuity, significant reduction of the visual field, changes in color vision and sensitivity to contrasts, which interfere with or limit visual performance (HONORA AND FRIZANCO, 2008). In the educational field, the student with low vision is the one who has useful vision for the purposes of the classroom, but who needs optical aids (glasses, magnifying glass, lenses, among others) and magnifications to read and write.

Low vision results in visual impairment of both eyes, making it difficult to perform the daily routine of some individuals, which can be improved with the help of optical and non-optical aids. In Sierra's view (2011, p. 36-37), such aid can be defined as:

Optical aids: glasses with special lenses: spartoprismatic, microscopic, bifocal or monofocal; hand, table, support, neck and illuminated magnifying glass.

Non-optical aids: enlarged materials (books, texts, games, handouts, etc.), inclined plane for reading, adequacy of the environment (natural lighting, use of lamps that provide greater clarity to the environment without the incidence of reflection, use of yellow acetate to reduce clarity and reflection on paper), materials that assist in better visualization (4B or 6B pencils, porous tip pens, notebooks with bold staves and with greater spacing between lines, type scopes, word separator) and electronic and computer equipment (closed circuit television - CCTV, apparatus that, coupled to a television, often enlarges the image and transfers it to the monitor, electronic magnifying glass, software that magnify the screen and programs with voice synthesizers).

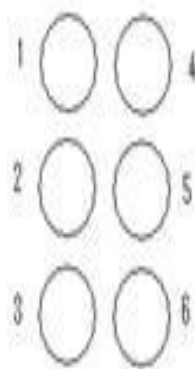
The five senses are naturally fundamental to life, each of them (vision, hearing, smell, taste and touch) has its valuable contribution in the process of relation of the human being, specifically with the environment. Vision, in turn, represents one of these senses and, certainly for the one who has reduced it or is deprived of vision, is the most important meaning, because, as poetically can be referred to, the eyes represent the window of the soul.

Blindness, therefore, results in total loss of vision, it is null, nor is light perception existing; according to some medical experts in the field, the expression zero vision is used to define blindness. In contemporary society, there is a culture in which reading and writing is indispensable and, for people

with Visual impairment - VI and especially blind people to be part of this same culture, the use of the Braille system is essential.

Blind students are literate using the Braille system, which is essential for them to learn to read and write, as Sierra (2011) points out, "[...] being defined as: a universal code of reading and writing for blind people and was created by the French Louis Braille (1809 – 1852) in 1825".

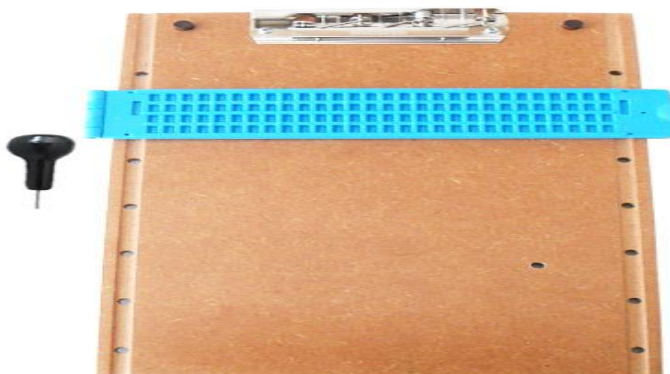
The composition of the so-called braille cell is given to a matrix, formed by six points divided into two vertical columns. On the left, from top to bottom are points 1, 2 and 3 and on the right, in the same arrangement, points 4, 5 and 6. The combinations of these six points form the 63 symbols representing the letters of the alphabet, the numbers, the accented vowels, the punctuation, the musical notes, the mathematical, chemical and computer symbols and other graphic signs. The following is the arrangement of the dots in a braille cell that is still empty:



Available in:

<https://movimentoculturalgaia.wordpress.com/2010/10/16/braille-%E2%80%94-pontinhos-de-luz/>

For the effectiveness of braille writing there are two types of support: the manual composed of a clipboard, a crimp (plastic or metal ruler composed of several leaked cells) and a puncture. And the mechanical support that is known as braille typewriter. The pictures below illustrate the statement:



Wooden clipboard, with a blue plastic crimp and a black metal-tipped punch.

<http://www.cirurgicaexpress.com.br/prod,idloja,2027,idproduto,3124021,conforto-do-paciente-reglete-de-mesa-em-plastico-com-prancheta-madeira-e-puncao-bengala-branca>



Braille laramara machine, manufactured in Brazil, composed of nine keys: a space key, a backward key, a line advance key and six keys corresponding to the points.

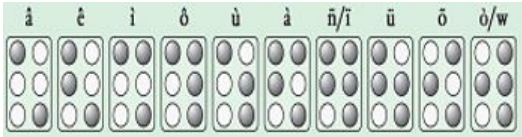
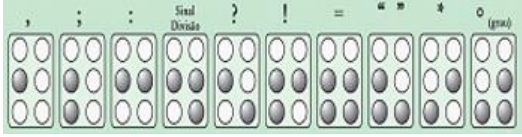
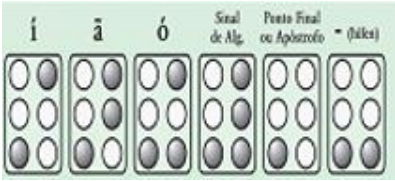

Available in: <http://www.laratec.org.br/MBrailleLM.html>

Continuing, the braille alphabet (in the reading position) is presented:

Braille Alphabet

Universal Layout of the 63 Simple Braille Signals

<p>1<sup>st</sup> series - upper series - uses upper points 1245</p> <p>2<sup>nd</sup> series is the result of adding point 3 to each of the 1<sup>st</sup> series signals</p> <p>3<sup>rd</sup> series is the result of adding points 3 and 6 to the 1<sup>st</sup> series signs</p>	<table border="0"> <tr> <td>a</td><td>b</td><td>c</td><td>d</td><td>e</td><td>f</td><td>g</td><td>h</td><td>i</td><td>j</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>k</td><td>l</td><td>m</td><td>n</td><td>o</td><td>p</td><td>q</td><td>r</td><td>s</td><td>t</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>u</td><td>v</td><td>x</td><td>y</td><td>z</td><td>ç</td><td>é</td><td>á</td><td>è</td><td>ú</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	a	b	c	d	e	f	g	h	i	j											k	l	m	n	o	p	q	r	s	t											u	v	x	y	z	ç	é	á	è	ú										
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<p>4<sup>th</sup> series is the result of adding point 6 to the 1<sup>st</sup> series signs</p>	
<p>5<sup>th</sup> grade is formulated by the 1<sup>st</sup> grade signs positioned at the bottom of the cell</p>	
<p>6<sup>th</sup> grade is formulated with the combination of points 3456</p>	
<p>7<sup>th</sup> grade is formulated by signs that use the points in the right column of the cell (456)</p>	

Available in: <https://especialdeadamantina.wordpress.com/2011/07/04/alfabeto-braille/>

As Gil (2000) points out, the main causes of visual impairment (subnormal vision and blindness) are: "[...] retinopathy of prematurity; congenital cataract; congenital glaucoma; optical atrophy; retinal degeneration and cortical visual alterations; and due to diseases such as diabetes, retinal detachment or eye trauma." The illustrations below show how people with some of the pathologies mentioned above see daily.



Normal vision and glaucoma vision.

Available in:

<http://www.hospitaldeolhosdoparana.com.br/noticia/428/dia-nacional-de-combate-ao-glaucoma-o-que-voce-sabe-sobre-esta-doenca#.Vp6BemcUX4g>



Normal vision and cataract vision.

Available in: <http://www.drbarella.com.br/catarata.html>



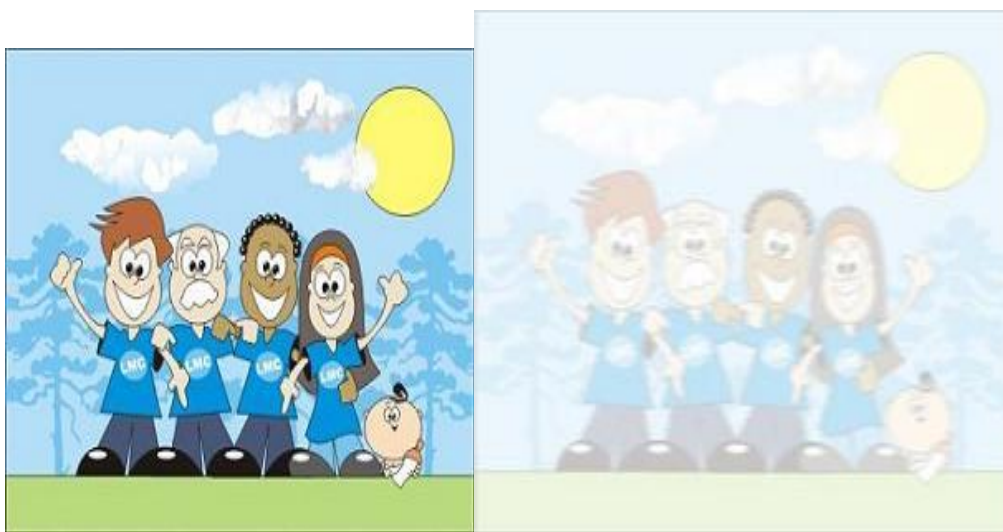
Normal vision and vision with diabetic retinopathy.

Available in: <http://manualdadiabetes.com.br/retinopatia-diabetica-o-que-e-e-como-evitar/>



Normal vision and vision with retinal degenerations.

Access at: <http://www.umani.com.br/index.php/degeneracao-macular-relacionada-a-idade-dmri/>



Normal vision and vision with retinal displacement.

Access at: <http://stargardtbrasil.blogspot.com.br/2010/05/como-enxergamos-parte-2.html>

Like all children, children with visual impairment - VI need a concrete routine with repetitions of touch, to catch, to play, to know themselves and others. For VIs, all these experiences are a different way of looking at them. The playful routine, in turn, is a fundamental ingredient for the development of all children in their first years of life.

Students with visual impairment, according to Brazil (s/d), "[...] they do not constitute a homogeneous group, with common learning characteristics, and [...] it is a mistake to consider them as a group apart, since their basic educational needs are generally the same as those of normal-vision children" (BRAZIL, s/d, p. 7).

Students with visual impairment - VI should be adequately stimulated in the improvement of their tactile discrimination, which is a primary skill for blind people, and this stimulation takes place through playful activities with the help of toy and play.



### **3. The importance of toys and playing for visually impaired children – VI**

As Gabaglia (2008, p. 1) points out, children with Visual Impairment - VI should be stimulated from an early age with regard to the exploitation of the haptic system. For this it is important to work with playful activities, exploration of toys and games, with the purpose of "[...] develop a set of tactile skills and basic concepts that have to do with the body in motion, with spatial orientation, motor coordination, direction, among other skills."

Domingues (2010) dialogues about the importance of tactile discrimination, understanding it as: Tactile discrimination is understood as "[...] a basic skill that should be developed in children with blindness in a contextualized and meaningful way. Touch is an alternative route of access and processing of information that should not be neglected in education" (DOMINGUES, 2010, p.35). As the author points out, "The haptic system is composed of cutaneous and kinesthetic receptors in which information from the medium is conducted to the brain to be interpreted and decoded. Thus, cold or heat and pain and pleasure are involuntary and consistent sensations [...]" (DOMINGUES, 2010, p.35). On the other hand, such sensations "[...] they can be regulated or controlled by artifice and outdoor conditions, while the touch in motion can be directed and oriented voluntarily to detect stimuli and information about the characteristics of an object (DOMINGUES, 2010, p.35).

The stimulus to the exploitation of the haptic system in blind children, in the playful culture, is realized through activities developed with toys and games. As Lewi-Dumont (apud JALBERT, 1997) points out, hands are essential instruments of knowledge for a blind person. For him, the child with blindness uses his/her hands, not only to pick up, throw or give objects, but also to perceive his weight, his shape and texture.

The Visually Impaired should be free to explore the objects with his hands in order to have the possibility to know the shapes, the weight, the texture of everything around him, because the hands are the main way to know the world around. This tactile stimulation should start early, so that you get a good development and tactile refinement through the handling of objects and toys that are part of your daily life. According to Vigotsky (1997, p. 112), "[...] the education of the blind child should be organized as the education of the child capable of normal development [...]"

Siauly (2005) "[...] emphasizes the need for toy and play, as a simple and pleasant way to stimulate the integration of the remaining meanings and the constitution of a non-visual perceptual reference."

The literacy of children with Visual Impairment - VI is done with the support of teachers, trained and specialized in VI. In the turn of the class, this student should receive specialized educational care - SEC in the multifunctional resource room type II, room that provides the appropriate materials for the realization of specific care for the Visually Impaired - VI.

Type I multifunctional resource rooms are designed and embodied to receive students with various types of disabilities, except visual impairment. The type II multifunctional feature room differs by being specially planned to receive only students with visual impairment, with all the features of the type I room.

Until now, the Brazilian government has made available to schools, in the public school system,

two types of multifunctional resource rooms, according to Ropoli (2010), which are characterized as follows:

The Type I Multifunctional Feature Rooms consist of microcomputers, monitors, headphones and microphones, scanner, laser printer, keyboard and mouse, mouse and pressure trigger, laptop, accessible educational materials and games, software for alternative communication, hand magnifying glass and electronic magnifying glass, inclined plane, tables, chairs, cabinets, melanic frame.

[...]

Type II Multifunctional Resource Rooms consist of Type I room features, plus other specific resources for the care of blinded students, such as Braille printer, Braille typing machine, table crimp, punch, Soroban, signature guide, accessible globe, accessible geometric drawing kit, sound calculator, graphics and tactile production software (ROPOLI, 2010, p. 31-32).

The appeal room provides the appropriate materials for the performance of specialized educational care and also the performance of a teacher trained to work in this place. This teacher differs from the others, because, in order to meet students with visual impairment, there is a need to know the braille system and how to properly use the other resources available in the type II resource room.

The playful in educational actions plays a fundamental role as a mediator method of child learning and, thus, contributes greatly in the promotion of the health and well-being of each child. According to Winnicott (1995), "the playful is considered pleasurable, due to its ability to absorb the individual intensely and completely, creating an enthusiasm atmosphere".

In line with the discussion made, Pinto & Tavares's argument (2010) points out that it is through play that "children channel their energies, overcome their difficulties and modify their realities, all this provides conditions for the release of fantasy and transforms it [sic] into a great source of pleasure". In other words, "[...] play is a source that helps in improving results by educators interested in promoting change" (PINTO & TAVARES, 2010, p. 226).

Every game has a purpose, and every child sees play as a new pleasurable challenge to be overcome. As Brougère (2004) states, "play is a space in which fabulous learning is allowed and, even if at times it becomes uncertain, it is an environment of relationships between children, providing the knowledge of the "self" and the other".

Over time, games and plays followed the evolutions. "But the pleasure of playing has not changed. When we look closely at children's play, two characteristics stand out immediately: the pleasure that surrounds the game is opposed to moments of tension, to a serious penetration of the players involved" (FRIEDMANN, 1996, p.11).

Toy and play are the main source of concrete material for literacy and the development of distinct skills of children with Visual Impairment - VI. It is also interesting to use scrap materials with which children with VI can prepare some toys, because, in addition to motivating them, it also helps in the development and tactile refinement.

## 4. Methodology

The methodological references that conducted this article are based on qualitative research with a bibliographic approach. Bogdan and Biklen (2003, p.49) point out "The qualitative research approach requires that the world be examined with the idea that nothing is trivial, that everything has the potential to constitute a clue that allows us to establish a more enlightening understanding of our object of study". Bibliographic research, in turn, is the basis in the construction of a scientific work and, according to Michel (2009), is characterized by the consultation of bibliographies pertinent to the article and, in this process, the researched contents are used for the analysis of the theme.

In this direction, the main theoretical contributions of this work focus on authors such as: Brougère (2004), Bruno (1997), Domingues (2010) Gabaglia (2008), Gil (2000), Honora e Frizanco (2008), Pinto and Tavares (2010), Ropoli (2010), Siaulys (2005), among others.

## 5. Conclusion

Play is a key ingredient in the meaningful learning of any child, but toy and play are essential mainly in the learning of children with Visual Impairment, it is through the toy that children with VI go groping and, thus, learning to identify how are the shapes, weight and texture of objects that are present in the routine of their daily life.

Toy and play expand the possibility of developing certain skills in children, such as: perceptual, motor, intellectual, affective and social skills. These skills acquired through play stimulate the interaction of social practices of the visually impaired.

The fundamental ingredients in the life of any child are the toy and the act of playing, and these become essential in the lives of children with Visual Impairment - VI, because, in addition to improving all their development, the toy also becomes an inexhaustible source of pleasure and, thus, contributes to the promotion of the health of these children.

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