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Original Article

# Alternative communication training of interlocutors for children with cerebral palsy[1]

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**Abstract:** Introduction: Children with complex communication needs benefit from alternative communication when their interlocutors make good use of this resource. Objective: Describe the process of alternative communication training of interlocutors for children with cerebral palsy. Method: The participants were children with cerebral palsy and their interlocutors in the respective environments: teacher (school), mother (home) and physiotherapist (clinic). We used instruments to characterize the participants, analysis of mime dynamics, selection of figures, analysis of the footage and perception of participants on the implementation of alternative communication. The data collection and analysis were organized in five stages: knowledge of communicative skills, theoretical and practical training, preparation of the communication board, and evaluation of the training. Results: In the theoretical formation, the sensitization allowed the interlocutors to understand the child's daily difficulty to communicate without the use of oral communication. This resulted, in the course of the practical training sessions, in the increase of the strategies offered by the interlocutors during the activities, therefore, increasing the child's chance of responding with the use of alternative communication figures. Conclusion: The training of three interlocutors for a child with cerebral palsy favored that alternative communication in three contexts of the child's development. The theoretical-practical support offered to the interlocutors in three natural contexts can provide greater independence and social participation of a child with non-speaking cerebral palsy in the accomplishment of daily activities.

**Keywords:** *Communication Aids for People with Disabilities, Cerebral Palsy, Occupational Therapy.*

## Formação de interlocutores de uma criança com paralisia cerebral para o uso da comunicação alternativa

**Resumo:** Introdução: Crianças com necessidades complexas de comunicação se beneficiam da comunicação alternativa quando seus interlocutores fazem bom uso desse recurso. Objetivo: Descrever o processo de formação de interlocutores de uma criança com paralisia cerebral para o uso da comunicação alternativa. Método: Os participantes foram: uma criança com paralisia cerebral e seus interlocutores nos respectivos ambientes de atuação: professora (escola), mãe (casa) e fisioterapeuta (clínica). Foram utilizados instrumentos para caracterização dos participantes, análise da dinâmica de mímica, seleção das figuras, análise das filmagens e percepção dos participantes sobre a implementação da comunicação alternativa. A coleta e análise dos dados foram organizadas em cinco fases: conhecimento das habilidades comunicativas, formação teórica e prática, confecção da prancha de comunicação e avaliação da formação. Resultados: Na formação teórica, a sensibilização permitiu aos interlocutores compreender a dificuldade diária da criança para se comunicar sem o uso da comunicação oral, o que resultou no decorrer das sessões de formação prática no aumento das estratégias ofertadas pelos interlocutores durante a realização das atividades, aumentando, assim, a chance de resposta da criança com o uso das figuras de comunicação alternativa. Conclusão: A formação de três interlocutores de uma criança com paralisia cerebral favoreceu que a comunicação alternativa fosse implementada em três contextos de desenvolvimento da criança. O suporte teórico-prático ofertado aos interlocutores em três contextos naturais podem proporcionar maior independência e participação social de uma criança com paralisia cerebral não falante na realização das atividades de vida diária.

**Palavras-chave:** *Auxiliares de Comunicação Para Pessoas com Deficiência, Paralisia Cerebral, Terapia Ocupacional.*

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# 1 Introduction

Supplementary and/or Alternative Communication (SAC) is characterized by the use of gestures, facial and body expressions, graphic symbols, photos, objects, digitized or synthesized voice, whose purpose is to promote face-to-face communication of individuals with severe communication disorders (VIANNA; GRECA; SILVA, 2014; KRÜGER et al., 2015).

The occupational therapist can use the SAC as an intervention strategy not restricted to the implementation of resources (PELOSI, 2005, 2009; MANZINI; ASSIS; MARTINEZ, 2013).

> This professional provides services in SAC to evaluate the subject considering their physical, cognitive, sensorial and emotional abilities; tracing the patient's occupational profile; identifying the occupations and activities required for the SAC development; identifying the communication partner; selecting the most appropriate resource; empowering communication partners; and following up on the involvement of the processes with constant reevaluations (MANZINI; ASSIS; MARTINEZ, 2013, p. 61).

The literature states that SAC resources can positively impact the activities performed in the daily life (NUNES; DELGADO; WALTER, 2011), providing acquisition and development of functional communicative skills (LIGHT; MCNAUGHTON, 2013, 2014), favoring the participation in social activities and the expression of needs, desires and information exchange (KENNEDY, 2010; MANZINI; MARTINEZ; ALMEIDA, 2015), benefiting independent, autonomous and functional communication(CESA; MOTA, 2015; LIGHT; MCNAUGHTON, 2012, 2015), establishing and maintaining social relationships (PELOSI, 2009), promoting improvements in quality of life (BRASIL, 2013).

In this perspective, it is essential these resources be used in all social environments that these children are involved. Tetzchner (2009) affirmed the need for a competitive environment, emphasizing that SAC patients, family and health and education professionals should understand the meaning and function of SAC resources, as well as acquire theoretical and practical knowledge about this area.

Children with cerebral palsy and erectile dysfunction may present communicative disorders (ROSENBAUM et al., 2007; BAX et al., 2005). This target audience benefits from SAC intervention programs aimed at the orientation, training, and instrumentation of the patient and his/her interlocutors (DUTRA; FAGUNDES; SCHIRMER, 2007; MANZINI, 2013).

It is important to highlight some studies that have worked with the formation of interlocutors through the use of SAC with children with cerebral palsy: with families in the clinical setting (NUNES; DELGADO; WALTER, 2011; MANZINI, 2013; PIRES; LIMONGI, 2007), with teachers in the school environment (ROCHA; DELIBERATO; ARAÚJO, 2015; SILVA, 2011; COSTIGAN; LIGHT, 2010) and with therapists in the therapeutic environment(BORTAGARAI; RAMOS-SOUZA, 2012). Most of the studies point out the importance of a family member participating in the intervention procedures employed during the implementation of alternative communication resources. The results of the above studies also revealed the need for health and education professionals to use alternative communication with children with cerebral palsy, emphasizing the need for these professionals to acquire theoretical and practical knowledge to use the SAC resources.

It is justified that, although the literature reviewed brings research that employed the implementation of the SAC with families, teachers, and health professionals, programs have not yet been developed with the participation of the family, school and therapists at the same moment in the life cycle of children with nonverbal cerebral palsy. The studies focused on analyzing these themes with the focus on the child, in isolation from their development contexts.

# 2 Objective

To describe the process of forming interlocutors of a child with cerebral palsy for the use of alternative communication.

# 3 Method

Descriptive research characterized by the use of the qualitative approach (MINAYO, 2013) to describe the theoretical and practical procedures adopted in the process of training three interlocutors of a child with nonverbal cerebral palsy and to evaluate the intervention procedures employed during the implementation of the "Individualized Program of Alternative Communication for children with non-verbal Cerebral Palsy, their families, health professional and teachers" (MANZINI; MARTINEZ;

ALMEIDA, 2015), entitled "Comunica_ PC" (MANZINI, 2015).

## 3.1 Ethical considerations

This study was approved by the Ethics Committee[2]. The research participants received and signed the informed consent form with all the information about the project.

## 3.2 Participants and location

A 12-year-old child[3] with a diagnosis of nonverbal cerebral palsy and his interlocutors in his respective environments participated in the study: teacher (school context), mother (home context) and physiotherapist (clinical context). Table 1 presents the characteristics of the research participants.

Table 2 characterizes the communicative abilities of the child in the perception of each interlocutor.

## 3.3 Instruments of data collection

**Protocol of participants´ characterization**: it identifies the characteristics of the participants regarding gender, age, education level, profession, and diagnosis. It was elaborated by the researcher and composed of four open and multiple-choice questions (MANZINI, 2015).

**Questionnaire on the communicative abilities of the children**: it identifies the communicative abilities used by the child before the intervention from the perception of the mother, health professionals, and education professional. It is composed of three multiple choice questions about the characterization of the child's communication (use of gestures, body and facial expressions); communication partners (family, friends, teachers); what it communicates (pain, fear, sadness, happiness, wishes) and an open question about the child's routine (MANZINI, 2013).

**Questionnaire for the perception of the participants on the implementation of alternative communication:** it is composed of four open-ended questions that analyze the perception of the interlocutors on the importance of the implementation of the SAC; the skills that the child acquired through the intervention program; the positive and negative points of the intervention program and the intervention aspects that could be modified (MANZINI, 2013).

**Protocol for the figures selection to compose the communication board:** elaborated by Manzini (2013) based on the items of the Canadian Occupational Therapy Measure - COPM (LAW et al., 2009) and the Picture Exchange Communication System - PECS (BONDY; FROST, 2001). The protocol was structured by three areas and subareas: self-care (clothing, food, bath and hygiene);

**Table 1.** Characteristics of the research participants.

| Participant | Age | Context studied | Participants´ Characteristics |
|---|---|---|---|
| Child | 12 years old | Home, school ad clinic | Non-verbal CerebralPalsy GMFCS level V |
| Mother | 42 years old | Home | Incomplete High School<br>Housewife |
| Teacher | 45 years old | Special school | 15 years graduated<br>Master´s in Special Education |
| Physiotherapist | 33 years old | Clinic | 5 years working in the area |

**Table 2.** Characterization of the communicative abilities of the child in the perception of each interlocutor.

| Characteristics | Mother | Teacher | Physiotherapist |
|---|---|---|---|
| Communicative abilities | Facial expressions, body movements, smile and babbling | Facial expressions, body movements, smile and babbling | Facial expressions, body movements and smile |
| Communication Partners | Family, health, and education professionals | Family, health and education professionals | Family, health and education professionals |
| Expressed needs | Pain, sadness, happiness and the desire to go to the bathroom | Pain, sadness, and happiness | Pain, sadness, and happiness |
| Assistance type | Occupational Therapy, Physiotherapy and Equine Therapy | | |

productivity (playing) and leisure (recreation and socialization). At least three figures can be selected to compose the communication board for each subarea, not establishing a maximum number of items (MANZINI, 2013).

**Protocol for analysis of mimic dynamics**: elaborated by the researcher, describing and analyzing the dynamics of mimics through five open questions, referring to: information transmitted by the interlocutor in the dynamics, strategies used to transmit information, speech use during the dynamics, difficulties and facilities reported by the participants during the experience of the dynamics (MANZINI, 2015).

### 3.4 Materials and equipment

A computer, a recording camera, camera, computer, EVA sheet, contact paper, spiral, sulfite sheet, a notebook for a continuous record of information, figures and graphic symbols of Boardmaker software.

### 3.5 Procedures for collecting and analyzing data

The data collection and analysis were composed of 05 phases, which will be detailed as follows:

**Phase 1**

Objective: To evaluate the communicative abilities of the child and the characteristics of each participant. Collection instrument: Protocol of characterization of participants and interview script of children's communicative abilities. Analysis carried out: Characterization of the participants and description of the communicative abilities of the child before the intervention. A number of sessions: A 30-minute research meeting with each interlocutor in their respective environments - teacher (school context), mother (home context) and physiotherapist (clinical context).

**Phase 2**

Objective: To offer theoretical knowledge on Supplementary and/or Alternative Communication and to experience the dynamics of mimics. Collection instrument: Protocol for the analysis of mimic dynamics. Analysis: Analysis of the dynamics of mimics performed by the interlocutors in the three contexts (home, school and clinical). A number of sessions: one session of occupational therapy of 60 minutes with each interlocutor in their above-mentioned environments of performance.

**Phase 3**

Objective: To elaborate an alternative communication board for each researched context, through the pictograms available in the Boardmaker software, figures selected by Google and/or photos[4]. At least 3 figures were selected for each category of the figure selection protocol, and no maximum number of figures or pages were specified for each board.

Number of sessions: two sessions of occupational therapy of 60 minutes with each interlocutor in their already mentioned environments of action.

**Phase 4**

Objective: To teach the interlocutors to use the communication figures during the planned activities and to implement the alternative communication in the school, home, and clinic. Collection instrument: Protocol for the analysis of filming. Analysis: Intervention at home, at school and clinic.

Number of sessions: 15 sessions of occupational therapy of 30 minutes with each interlocutor in their respective environments of action.

**Phase 5**

Objective: To evaluate the perception of the interlocutors before the training program. Collection instrument: Questionnaire to analyze the perception of the interlocutors about the SAC. Analysis: Analysis of the perception of the interlocutors on the implementation of the training program.

A number of sessions: a 30-minute research meeting with each speaker in their already mentioned working environments.

The transcriptions were in full of the filming of all the phases and incorporated to this data the information collected through the continuous recording of information. The meetings were planned according to the availability of the participants and took place in the following order: school, clinic, and house. The sessions took place once a week with an approximate duration of 30 minutes.

It is noteworthy that in the research meetings there were no therapeutic interventions.

## 4 Results

The development of data collection took place over 5 months. The results were organized into two sections, considering that the focus of this research is in the process of training the interlocutors:

(I) implementation of actions to train the interlocutors and (II) evaluation of intervention procedures.

I – Implementation of actions to train the interlocutors

The training of the interlocutors was divided into (a) theoretical training and (b) practical training.

a) Theoretical training

This topic includes the following information: data on the lecture on the theme of Alternative Communication, that is, the dynamics of mimics, reflection on the dynamics and importance of using alternative communication resources.

To describe the interlocutors' report, this item was subdivided into two moments: 1st moment, the dynamics of Mimics and 2nd moment, the reflection on the dynamics.

*1st Moment: Dynamics of the Mimics*

The Dynamics of Mimics was programmed for the speakers to experience "transmitting and guessing information" through the use of gestures, facial expressions, and body movements, but without using oral speech.

The activity happened as follows: (1) the participants drew a paper with information, (2) this information should be transmitted to the researcher through the use of mimics, and (3) after the researcher got the message right, he also performs this activity.

The proposed activity was carried out in 30 minutes and the information drawn by the interlocutors was:

- Mother: "In the past, the stars guided the travelers" (phrase);
- Teacher: "Woman digs snow to find the car buried in the United States" (news);
- Physiotherapist: "Chocolate cake" (recipe).

In order to express the drawn message, the interlocutors frequently used:

- Body movement: a resource used for the purpose of expressing action verbs, characterization in the drawn message;
- Facial expression: a resource used to convey whether the divination was right or wrong;
- Representative gesture: a resource used for the purpose of expressing concrete objects.

**2nd Moment: Reflection on the dynamics**

Participants were asked about what was most difficult in carrying out the proposed activity: expressing or understanding a message?

> **Mother:** *I think both are difficult, there is a difficulty on both sides. But, the harder it is to talk than to guess because you're going to say it and then you're going to hit. But, talk is harder.*
>
> **Physiotherapist:** *I think both. But it also depends on whether the person is more likely to be able to gesticulate, maybe it will be easier for those who are trying to guess. I think so too, it depends on the context, that even the cake recipe was much easier. Sometimes I get easier, but I wonder what I'm going to do, how I'm going to gesticulate that word. I had this feeling now as the child, because really, we sometimes have that will that they do, that they develop, and sometimes we fill them with questions and want to show everything. At the time of playing, the person gives much information so we are a little lost. So, I think it's that feeling that students can have with us. Sometimes we do not pay attention to certain details, that is, people did not give the opportunity or did not wait for the child to give the answer, and then suddenly we started to mix several things.*
>
> **Teacher:** *So for us, we already have language, we will use another form of language, but we already have interpretation, we know what we are doing, the resource that we will use in the gesture, We think fast, we can, it's not so abstract, so it's not difficult. Now for those who do the reading, I think it is more difficult because then you depend on what that object represents, I think it is much more difficult to interpret.*

The speakers were also asked what they thought of the dynamics.

> **Mother:** *It's difficult, but in this game, we put in his place. How difficult it is for him to want to show or speak something and then we do not understand.*
>
> **Physiotherapist:** *I think it was a challenging situation. I think it was a bit easier because I had no charge to detail everything, but if it was to detail the message, I think it would be more difficult. The cool thing is in the end when people guess what happens, there is a total satisfaction is independent of anything.*
>
> **Teacher:** *I thought it was cool. The way you go I think it's not that difficult right because we already have a language training. The point is that sometimes we need to have a little more patience so the child can communicate.*

The interlocutors understood the difficulty of transmitting a message only with the use of gestures,

facial expressions, body movements, indicative and representative gestures. Also, disagreements, anguish, agony, and stress were also variables that emerged during the course of the dynamics.

In this perspective, the dynamics were presented as a means of raising awareness in the formation of the interlocutors. They understood the purpose of the dynamic and were able to experience through the body in motion that children with severe disorders in oral communication need alternative resources to communicate. This sensitization enabled the interlocutors to compare this moment with the daily difficulty they have to understand what the child with cerebral palsy wants to express.

b) Practical training

The goal of the practical training was to teach the interlocutors to use the Boardmaker software selecting pictograms and making the communication boards for each context (family, school and clinical). Also, the practical training consisted of guiding the interlocutors to increase the communicative abilities of the children during the ludic activities.

In this topic, the data regarding the construction and the implementation of the alternative communication board with the mother, teacher, and physiotherapist were analyzed. Table 3 describes the figures that were selected by the three interlocutors.

The boards were constructed through the protocol of selection of figures, addressing the activities of self-care, productive activities and leisure activities. The mother selected figures related to the child's routine in the family environment, that is, items of the child's center of interest. The teacher 's board was built through the routine of the school environment, selecting items related to everyday situations experienced in the classroom from the student' s arrival at school until the mother 's arrival at the time of leaving. The board developed by the physiotherapist was built through the routine of the clinical environment, eventually choosing

**Table 3.** Figures selected to compose the board of each context.

| Activities | Categories | Center of interest in the home environment | Center of interest in the school | Center of interest in the clinical environment |
|---|---|---|---|---|
| Self-care activities | Food | Banana, yogurt | Utensils (Dish and spoon) | - |
| | Drinks | Milk, water | Blue mug | - |
| | clothing | Blue underwear, white sleeveless, t-Shorts, diaper | diaper | - |
| | Personal hygiene<br>Blue sponge, shampoo of Tralala<br>Comb, brush, paste, tooth, wash hands | | | - |
| **Productive activities** | Toys, jokes or objects interest | Santa claus, dog and pet | Ball, soap bubble, Teddy bear, bladder, Ball for pilates, rug, Sensory instruments, Musical instruments (keyboard, Rattle, drum), Rollers, standarte, price,Info | - |
| **Leisure activities** | Favorite activities | Watch TV, stay with the Belly down, move the wheelchair | Changing of decubitus (sitting, lying down), wheelchair, School chair, swimming pool, Packing the backpack and writing in the child's notebook | Ball, musical instruments (guitar, drum, rattle), sensory garden, Tactile stimulation toys (water, clay, gouache paint), Change of decubitus (roll, pilates ball, platform) |
| | Places he likes visiting | Grandmother's, APAE and Equine therapy | - | - |
| | Socialization (people who knows) | Mother, father, brother, grandfather, grandmother | - | - |

items referring to the daily situations experienced in the therapy environment.

After selecting the figures, a communication board was created for each context. It should be noted that some figures were taken from the Boardmaker software and other from Google, which was selected because they are closer to the daily life of the child participating in the study.

Table 4 shows the characterization of the alternative communication boards made.

Figure 1 shows examples of made boards. It is important to emphasize that the boards made were in the operating environment of each interlocutor. The figures of the green board were selected by the mother, the figures of the board were selected by the physiotherapist and the figures of the red board were selected by the teacher.

In the second moment of the training was for the interlocutors (mother, physiotherapist, and teacher) using the resources made directly with the child. The researcher carried out guidelines with the aim of encouraging the interlocutors to offer the activities that would be carried out for the children.

**Table 4.** Characterization of communication boards made together between researcher and interlocutors.

| Board characteristics | Board for home | Board for the school | Board for the clinic |
|---|---|---|---|
| Board format | Vertical plank in A4 format in spiral, with removable stimuli and plate for Individual use with velcro | | |
| Format of the figures | Figures 8x8 em EVAe Velcro | | |
| Technique taught for The child shows an interest in the activity | Use of smile and hands to remove individual plate shape | | |
| Quantity of figures | 26 | 33 | 13 |
| Categories selected by the people to assemble the board | Favorite food and drink<br>Clothing Accessories<br>Personal hygiene<br>Places<br>Preferred Activities<br>Family | Routine activities<br>Personal Care Activities<br>Personal hygiene<br>Places for positioning<br>Activities related to playing<br>Sensory stimulation activities<br>Auditory stimulation activities | Stimulation activities<br>Activities with the hands<br>Positioning objects |
| Board position | Board arranged horizontally, close to the reach of the child's hand | Board arranged vertically next to the child's gaze | Board arranged horizontally, close to the reach of the child's hand |
| Strategy for using the resource | Use of daily activities such as food, leisure, and self-care | Use of daily activities such as food, leisure, and self-care | Use of daily activities such as food, leisure, and self-care |

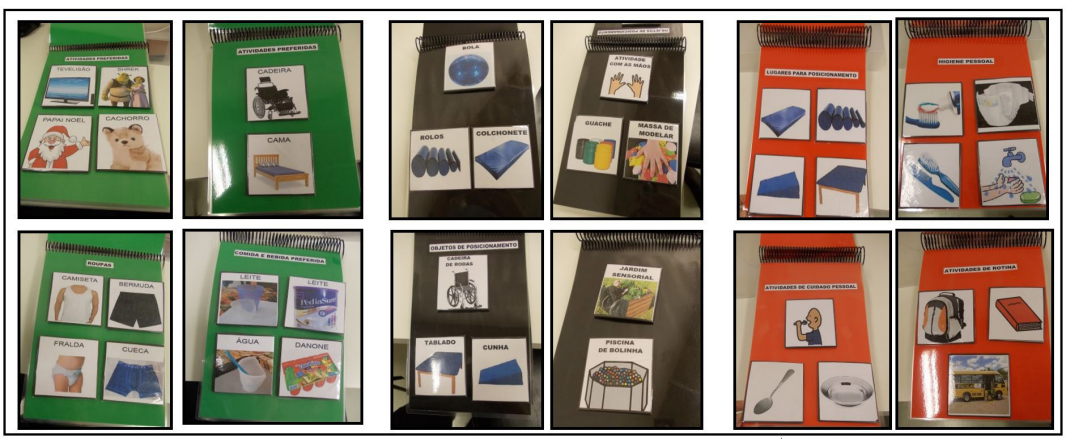


**Figure 1.** Boards made for each studied context.

In order to use the alternative communication figures, the interlocutors were trained through the following steps:

1st Step: Showing the concrete object to the child. Eg: teddy bear;

2nd Step: Using the stimuli (tactile, visual, auditory, verbal) that the object provides to present the characteristics and function. Eg, the teddy bear provides tactile stimuli;

3rd Step: Comparing the communication figure with the corresponding object. Eg compare the teddy bear and the figure of a teddy bear;

4th Step: Offering the activity to the child through aids (verbal, physical, model) for the child to take the picture of communication or demonstrate an interest in the activity. Example: Aninha (fictitious name), now we are going to play with this teddy bear. For us to play, you have to take the figure and put it in my hand;

5th Step: Providing time for the child to respond to the stimulus offered. Observing carefully the reactions of the child (body movements, gestures indicative, facial expressions, vocalizations).

The steps mentioned above were carried out in the consultations as an intervention strategy with each one of the interlocutors to promote the functional use of the SAC resources.

During the training, the interlocutors were taught to use one figure at a time, that is, the interlocutor selected the programmed activity, removed the board from the figure and placed it on the individual board with velcro. The child showed interest only in the figure related to the activity through the use of the smile and/or hands to remove the figure from the individual board. It should be noted that before the introduction of the SAC resource, the child communicated only through looks and smile.

Through the protocol for analysis of the footage (MANZINI, 2015) and continuous recording of information, it was possible to identify that at the beginning of the meetings with little understanding of what would be done, the results indicated that the interlocutors: (a) mother: presented spontaneity to use resources; (B) physiotherapist: showed fear of using resources in the wrong way; (C) teacher: showed great interest in learning new intervention strategies.

At the beginning of the intervention, they offered the activities to the child mechanically, meaning that they did not give the child the opportunity to express their desires. Throughout the meetings, the child and the interlocutors were satisfied with the understanding of the strategies, the interlocutors understood the strategies taught and provided time for the child to respond to the stimulus offered. It was also noticed during the sessions that the greater the number of strategies offered and the actions performed by the interlocutors, the greater the chance of the child's response. At the end of the training, the results showed that the use of the resources and the strategies to perform the exchange of the figure by its corresponding object became effective.

II – Evaluation of training procedures

The alternative communication program was evaluated by the interlocutors and the data were measured through the transcription of the interlocutors' perception of the supplementary and/or alternative communication implementation.

The interlocutors were asked about the importance of research and alternative communication for the child. The answers were positive and diversified as can be seen below.

> **Mother:** *I think it was good because it's an added stimulus for him, right, things he does not do at home. It is good to have activities here at home because of this, because here at home he does not do activities, he stays alone with me, stays in bed and cannot vary with him, and it's good because of that, because they are new things for him And for Eduardo[5] as well.*
>
> *It will also be better, help him, help me too. I do not know if I talked to you about this, I did it once with him. I asked him: did you poop? If yes, you blink, if do not blink, then he took it and blinked and he had done it. I think he's paying more attention to things.*
>
> **Physiotherapist:** *It was very satisfying because I could see that he had gains in attention, perception, and reaction of faster response.*
>
> **Teacher:** *I see this as a resource that assists in that moment of the activity and that gives more conditions to it and more possible to increase knowledge of it.*

The interlocutors were asked about the negatives of the research or what could be improved.

**Mother:** *None, there's nothing to improve right. The cool thing is to do in the teacher, right, but you already do that.*

**Physiotherapist:** *It did not. At first, I was slow to understand what his goal was, but after the lessons, his intervention, and his training, I began to understand. One thing I want now is to read more about this subject, which was unknown to me.*

**Teacher:** *So, in relation to the research I did not find any negative points, I think it was a short time, I think we should have used a specific/directed moment. For example, I think it could be that way more directed to the day by day, we got very much the question of the activity, the play, and the music.*

*Now, we are at this level of communication with him, so in that sense, I think it is useful if we continue, we cannot lose everything we can get from him in the communication part.*

## 5 Discussion

Children with cerebral palsy may have severe oral communication disorders, which may limit their communication with the closest interlocutors, such as parents and/or family members, professionals in the area of education and health (DELIBERATO, 2010; MANZINI, 2015).

The various daily contexts attended by the child, such as home, school, and therapies, are Microsystems that promote basic interactional situations, with stable and significant face-to-face relationships (DELIBERATO; SAMESHIMA, 2007), factors that justify intervention in the area of supplementary communication proposed in this study.

It was evidenced the need to be attentive to the process of formation of interlocutors of a child with cerebral palsy and severe disorders in oral communication for the use of alternative communication. The study by Nunes, Delgado and Walter (2011) and Manzini (2013) showed the lack of ability of the interlocutors to recognize the needs and desires of non-speaking children. The authors also pointed out that children with oral communication difficulties can be misunderstood and interpreted by their closest interlocutors, needing alternative communication resources.

In this perspective, Deliberato (2010) discussed the need of the interlocutor to be attentive to the different oral and non-oral expressions and also attentive to the occasion experienced to systematize the meaning attributed to the expressive abilities of children with limited oral communication.

The results found in the dynamics of mimics are highlighted in this research. The interlocutors understood the difficulty of transmitting a message only with the use of gestures, facial expressions, and body movements. The research of Manzini, Martinez and Almeida (2015) corroborates these results since it showed that disagreements, anxieties, and stress are present variables between the communication of the child with cerebral palsy and his mother.

Studies point to the importance of inserting the interlocutors of non-verbalized children in the intervention process from the stage of confection of the resources of alternative communication to the direct implementation with the children (WALTER; ALMEIDA, 2010; MANZINI, 2013). This participation is essential, since they live daily with the children, knowing the desires, the interests and the routine (MANZINI; MARTINEZ; ALMEIDA, 2015; ARAÚJO; BRACCIALLI; DELIBERATO, 2009).

Intervention procedures proved to be successful, which may be related to the concept of meaningful learning, that is, the use of previous knowledge was determinant for the new learning of the interlocutors (ALEGRO, 2008). The study shows that success has occurred because the interviewees have gone from being passive to understanding each other's position and seeing as legitimate actors and communication partners.

In the training process for the use of alternative communication, the participation of the closest interlocutors allows the development of a partnership, which allows the activities carried out in the service to be reinforced and kept at home and generalized in the different daily environments (OMOTE, 2003). Finally, the training should also allow the interlocutors to feel competent to understand the communicative skills of children without oral speech (TETZCHNER, 2009).

Supplementary and/or alternative communication resources added to the training of interlocutors can help in inclusion in social environments, in the acquisition of new communicative skills, in the increase of interaction during daily activities, in the development of language, in the elevation of self-esteem and in quality of life (LIGHT; MCNAUGHTON, 2012, 2014; PELOSI, 2005, 2009; TETZCHNER, 2009; KENNEDY, 2010).

## 6 Conclusion

The study had as a peculiar characteristic to describe the theoretical and practical training on the SAC for the main interlocutors (mother,

teacher, physiotherapist) of a child with cerebral palsy in the most common environments of each interlocutor (home, school, and clinic).

Intervention procedures enabled the SAC to be implemented in daily activities carried out in three developmental contexts experienced by the child, which may provide greater independence and social participation of the child with non-speaking cerebral palsy.

It is believed that the training process was effective because it was anchored in theoretical references that used meaningful learning knowledge, involving the adults in the construction of the solution of the problems to the application in their daily life contexts, revealing motivation for learning.

Despite the positive results, some limitations were found throughout the study. Due to the research was performed in the environment of each interlocutor, there were intercurrences, such as at home (telephone, company, another child), special school (school routine) and clinic (meetings). Other factors that limited the study were: participant absenteeism, child health problems (flu, colds), and difficulty of interlocutors in using the computer.

It is recommended to test the training procedures of the interlocutors described and presented in this study, providing contributions for future research in the field of training and qualification of interlocutors for the use of supplementary and/or alternative communication.

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## Author's Contributions

Mariana was responsible for collecting and analyzing data, designing, preparing, organizing and writing the text. Bárbara and Gerusa were responsible for data analysis, interview transcription and article writing. Claudia was responsible for the orientation of the paper and the writing of the article. All authors approved the final version of the text.

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## Notes

[1] This study presents a cut of the data of the doctoral research of the first author.

[2] Approved under nº 922.817/ 2014.

[3] Through the study of the medical record, the child's hearing, vision, and cognition were verified in medical reports as normal.

[4] If the speakers considered the pictures of Boardmaker software difficult for the child to understand, the picture could be selected on Google or the child's personal object could be photographed.

[5] The fictitious name of the child sibling searched.