

## Children with multiple disabilities and/or deafblindness in Latin America and the Caribbean: Educational practices analysis through video-films <sup>1</sup>

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### Abstract

The article reports on the ongoing research: “Practices that facilitate learning in children with multiple disabilities and deafblindness” by the Catholic University of Cordoba. The objective is to describe the characteristics of educational practices that facilitate the acquisition of a meaningful learning level in children from 6 to 12 years old, with Multiple Disability (MD) and with Deafblindness (DB). The study is carried out in educational institutions in Latin America and the Caribbean (LA&C) with the participation of students, teachers and families.

The information was collected through the analysis of videos that present professional practices, in formal and informal settings. The analysis was done under the guidance of a structured observation protocol and interviews. Based on the analysis done through this investigation, it was discovered that the categories of the Buchanan protocol are applied by most LA&C professionals, but also emerged new indicators. Besides, the importance of offering spaces in educational institutions for professionals to analyze their own practices is clear. Furthermore, it

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is imperative to have specific training and permanent educational programs to offer quality educational practices.

**Keywords:** Multi Disabilities, Deafblindness, Inclusion, Educational Practices, Learning.

## Introduction

The present study is based on the Convention on the Rights of Persons with Disabilities, United Nations (UN 2006) and its subsequent revision, as well as on the Sustainable Development Goals 2030 (UN 2015), which show a better approach to persons with disabilities, since it allows shifting from a medical-biological perspective to a rights-based one. This concept is a progress towards a model without barriers as stated by Victoria Maldonado (2013) when she highlights that "the essential values that underpin human rights such as dignity, personal freedom and equality" give birth to inclusion (2013, paragraph 1, Summary). On the same founding principle Ferioli expresses:

Persons with multiple disabilities are those who present a combination of needs. They can access education as subjects of rights if the environment is prepared to meet their needs. These persons encounter extreme challenges in relation to education, working life, social life, cultural activities and information. They must be recognized as individuals who require supportive configurations and/or reasonable accommodations in order to have access to knowledge (YouTube, 2019, 14 min 5 sec).

In parallel Deafblind International (DbI), states that:

Deafblindness is a condition that combines visual and hearing impairment in a variety of degrees. These two sensory impairments multiply and intensify the impact of each one on the other, creating a severe disability that is distinct and unique. All people who are deafblind experience problems in communication, access to information and mobility. However, their specific needs differ greatly according to age, the time of onset of the impairment, and the kind of deafblindness (Deafblind International, 2020).

The historical records compiled by Bertone et al. (2014) in the present century on the aforementioned population, state that LA&C made a significative advance as regards educational opportunities, due to the increase in the number of specialized institutions and state subsidies. On the other hand, the United Nations Committee on the Rights of Persons with Disabilities in 2016 (cited by Cipollone et al., 2020) put special emphasis on the risk run by some human groups such as those constituted by persons with multiple disabilities, deafblindness, autism and those who suffer humanitarian emergencies.

Likewise, the World Federation of Deafblind (WFDB) (June 7, 2021) reports that: "children with deafblindness are up to 23 times less likely to be in school than children without disabilities, and also less likely to be in school than children with other disabilities" (p.31). The authors agree on the absence of the data required to promote the analysis of the quality of educational practices as well as current teaching processes.

All this led the research team to wonder which characteristics have significant age-appropriate teaching practices in the education of people with MD and DB in the region.

The recognition of educational practices is considered a valuable contribution because it will help to disseminate new experiences in those spaces that still fail to identify significant formative processes for this population. According to Araque-Suárez, C., and Araque-Suárez, B. (2022): "educational practice encompasses the actions before, during and after the process of interaction with the students, which is where the purposes of education come together into play" (p. 95).

The different learning contexts and practices may either facilitate or hinder learning. In order to support this López Verdugo et al. (2004) assert that "the physical characteristics of the environment stimulate, inhibit and condition the activities that people develop" (p. 146). Formal contexts are those that offer a sequential education that covers all levels of the educational system, while non-formal contexts refer to organized, planned and systematic activities without a certain order (Trilla et al. in Martín, 2013). Learning will be meaningful when students are able to develop their own knowledge (Romero Trenas, 2009). From this perspective, the educational practices analyzed are understood as transformative practices, beyond the environment in which they are carried out.

According to the above, it is necessary to guarantee the right to education in different formal and non-formal environments, and promote quality educational paths, by supporting the organization of the specific space, both physically and socially, in order to promote the inclusion of the population in the system. From this scenario, the objectives of this article are to describe those educational practices that promote learning in children with MD and DB and to complement the protocol with the new categories that emerged.

## Methodology

The criteria applied to define the population to be studied in this qualitative analysis established that they should be children with DM and DB between 6 and 12 years of age, in formal and non-formal settings, and in Spanish-speaking LA&C countries, to be observed through video-films in learning situations and actual teaching. The video material was requested by email and the requirement was that they should show educational practices in formal and non-formal settings where significant learning was visible. The length of the videos should not exceed 8 minutes.

Sixteen videos were collected and from there we proceeded to analyze them qualitatively according to the protocol: "Operational Definitions of Best Practice" UTAH (Buchanan, 2015). Besides, we considered the observations of authors who have an average of 25 years of experience in education.

The aforementioned protocol was chosen after analyzing several documents such as "Optimal Quality Indicators: Environments for Students with Deafblindness" by the National Threat Assessment Center (NTAC, 2005), "Quality Indicators for Programs Serving Students who are Blind, Visually Impaired with Multiple Disabilities or Deafblind" by Perkins International (Riggio, 2010) and "Operational Definitions of Best Practice" UTAH (Buchanan, 2015). The idea was to systematize the observation of practical work.

A group of experts selected this last one as the most appropriate for the analysis of best practices because it takes into account and explores in depth the necessary aspects for developing meaningful learning, such as the establishment of a relationship between the child and the adult, the communication, and the organization of the environment, among others. Although it was designed for children and youth with deafblindness, its practical observations, which we will call categories, can be applied to students with multiple disabilities considering that both display, among others, their communication and access to learning and information needs (Best & Brown, 2000).

The aim of the Buchanan protocol is to guarantee quality interventions that promote meaningful learning in students. The instrument features 16 categories:

- "A: CI<sup>2</sup> prepares child for activity"
  - "B: CI announces who is interacting and what will happen"
  - "C: Student is involved in the entire process of the activity (from partial to full participation)"
  - "D: CI provides and uses special adaptations"
  - "E: Wait time and consistent prompting"
  - "F: Activity is useful in a variety of environments"
  - "G: The intervener models higher forms of communication"
  - "H: Student has multiple opportunities to communicate"
  - "I: There are opportunities for peer/sibling involvement"
  - "J: CI uses consistent cues"
  - "K: CI provides appropriate feedback"
  - "L: CI communicates the end of an activity"
  - "M: The activity develops concepts"
  - "N: Instructional planning"
  - "O: Professional Practice/Collaborations"
- (Zoppi, Comunicación personal, [Personal communication], May 20 2021).

## **Informant selection**

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<sup>2</sup> CI: Communication Intervener

The selection was based on LA&C institutions that had experience in working with children with DM and DB from 6 to 12 years of age, ready to play a role as trainers of trainers of other services.

## **Information Gathering**

The data were collected through the analysis of videos that were requested from institutions that work with the aforementioned population. Some ethical aspects such as confidentiality were previously discussed with them. The selected institutions are referents in AL&C, due to their trajectory in working with children and young people with multiple disabilities and deafblindness. To be selected, the videos had to respond to teaching and learning educational situations involving the population in focus. Fifteen of the total of sixteen videos received from Argentina, Brazil, the Dominican Republic, Ecuador, Guatemala and Panama were used, since one did not show educational practices.

The interpretative analysis of the data was organized into different phases that covered the reading of the information provided by the data collection tools. They were:

1. Observation of videos. All the team members took part in this activity.
2. Identification of categories. The Buchanan protocol (2015) was used for the reasons already mentioned.
3. Analysis of audiovisual material. After watching the videos, we analyzed their contents, put them together in relation to the coincidences that emerged in relation to Buchanan's categories (2015). All the members of this study participated in this process that led us to classify them into sub teams to implement a double review in order to confirm the data obtained and add other induced conclusions.

## **Outcome**

The video-films were organized in groups according to what they had in common with the categories. Tables were implemented to show the programs in which we observed practices that facilitate learning. The term "Present" means that the category is observable; "Absent" indicates that the category is not applied; "Non observed" means that the categories are not visualized due to an interruption of the sequence; and finally the term "Mixed" means that there are categories Present, Absent or Non observed.

The results of this analysis are presented below. In a first group of five videos we observed:

**Picture 2. “References and categories studied in the first matched group”**

Reference	Categories
Present	A - C - F- M - O
Absent	G
Non observed	-
Mixed	B - D - E - H - I - J - K - L - N

**Note:** The categories that appear in the first common group have been highlighted as Present, when they are observed; Absent, means that the categories are not visible; and Non observed are those categories that cannot be analyzed. (Own compilation).

**Picture 3. “Categories analyzed by video-film in the first matched group”**

Observable practices	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>Video 4</b>	Green	Green	Green	Red	Green	Green	Red	Green	Green	Green	Green	Green	Green	Red	Green
<b>Video 6</b>	Green	Green	Green	Green	Red	Green	Red	Green	Green	Green	Green	Red	Green	Red	Green
<b>Video 7</b>	Green	Green	Green	Red	Red	Green	Red	Green	Green	Green	Green	Green	Green	Red	Green
<b>Video 10</b>	Green	Red	Green	Green	Green	Green	Red	Green	White	Green	Red	Red	Green	Green	Green
<b>Video 15</b>	Green	Green	Green	Red	Red	Green	Red	White	White	White	Green	White	Green	Red	Green

**Note:** Green indicates Present; Red means absent and White, that they are Not observed. (Own compilation).

As regards the category Present, the following is observable:

A: The teachers apply appropriate positioning techniques that facilitate students' attention and participation. In one of the videos, the student is positioned in a postural wheelchair in front of a reading desk with graphic material placed at eye level to perform the recognition of the drawing of three faces. During the activity, a headrest made of foam rubber is offered as a reasonable adjustment to promote attention and comfort. Techniques are also applied to improve the child's functional movements with the head and upper limbs, guided by the adult.

C: The professional presents the topic "Collection" to a group of students to be developed in a class. He uses pancakes and fruits to introduce the concept. Each student is given reasonable support and adjustment for participation; some cut the fruits and others assembled the set.

F: The activity presented in the mathematics class assembling pancakes sets, is a task that may be developed in different environments.

M: We can see the different ways in which the intervener develops concepts by means of activities that are meaningful and motivating for the student. In some cases, food is used to work on mathematical concepts; in others, the drawing of their own and their teachers' faces is used to address social science topics.

O: In some situations, teachers assumed an active intervention role, while in others they played an advisory one. Likewise, collaboration between professionals and family or in a teaching partnership was observed. When shopping for food in a neighborhood pantry, the intervener shared the activity with a member of the family, providing guidance on how to approach the process of moving and selecting food.

With regard to mixed categories:

B: Different ways of presenting oneself were observed, such as standing in front of the student at his line of sight or among others with the support of words and pictures. For example, in a class, the student recognized the teacher by the shade and length of her hair and pointed out between three drawings of the professional's face.

D: Interveners applied the strategies by effectively using adapted equipment such as reading desks. For example, when working on fixation and image recognition, he placed the device at  $80^\circ$  or  $90^\circ$  of inclination while for an action such as cutting, they set it with an inclination of approximately  $45^\circ$ .

E: In the described sequence of the identification of the professional's image, the time given for the student to locate, fix, identify and point out the correct image is evident. In situations where the student did not respond in the given time, among other ways of assistance, verbal support or models were provided.

H: During an image association activity, the professional created exchange situations by asking: What color is the hair, who has that hair color? etc., pausing and taking turns, in order to attract the student's attention.

I: In all videos coming from the same Central American country, family members participated actively. At snack time, the family demonstrated the use of a straw and how they guided the student in drinking.

J: This practice was evident in an activity where the student was on a swing and the practitioner used tactile signs, objects, and movement cues for him to continue swinging.

K: In one of the films the professional gave feedback to the student while he was assembling the set of strawberries by saying "You assembled a set, a set of strawberries" and "A" (name of a student) "assembled the set of bananas".

L: In one of the videos, the professional announced verbally the end of the shopping activity and invited participants to return to the classroom.

N: The video showed the elaboration of drawings of faces according to the visual condition, functional profile and the contents to be worked on.

In the second group of five videos, we observed the following:

**Picture 4. "References and categories analyzed in the second group of matches"**

References	Categories
Present	C and M
Absent	H, K and N
Non observed	
Mixed	A, B, D, E, F, G, I, J, K, L, M, O

**Note:** The categories that appear in the seconde common group have been highlighted as: Present when they are observed; Absent when the categories are not visible; and Not observed are those categories that cannot be analyzed. (Own compilation).

**Picture 5. "Categories analyzed by video-film in the second group of matches"**

Observable practices	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Video 1	Red	Red	Green	Green	Red	Green	Green	Red	Green	Red	Red	Red	Green	Red	Green
Video 5	Red	Red	Green	Red	Green	Green	Red	Red	Green	Red	Red	Red	Green	Red	Green
Video 8	Red	Red	Green	Green	Green	Green	Red	Red	Green	Red	Red	Red	Green	Red	Green
Video 12	White	White	Green	Red	Green	Red	White	Red	White	Green	Red	Green	Green	Red	White
Video 16	Red	White	Green	White	Red	Green	Red	Red	Green	Red	Red	Red	Green	Red	Green

**Note.** Green indicates Present; Red means absent and White, that they are not observed. (Own compilation).

As regards the category Present, we observe the following:



**C:** In an overall class, the student must get inside a hoop with the adult and structure a yellow hoop. He received physical support and verbal guidance to participate in the activity.

**M:** In a class, the professional developed the concept of sets, by means of a game with hoops by asking the students to form color groups.

As regards mixed categories:

**A:** We observe the beginning of the school day when the work agenda to be implemented is organized. They used posters to represent the moment of greeting, praying, and so on, according to the student's profile.

**B:** It should be noted that this practice is not observed.

**D:** In one of the videos, the student agreed to drink autonomously by using an adapted bottle at lunchtime.

**E:** When working with the date and the weather, the teacher offered the student some waiting time and consistent support to complete the given task. In both cases he used sign and verbal languages.

**F:** When a student began to write his name, he associated it with his own photo.

**G:** This practice was induced when the student, while working with the adult in cutting and pasting of figures, requested to continue the activity through body movements and finger pointing. The adult modeled a higher form of communication by using a conventional sign.

**I:** This procedure is absent in the analyzed videos.

**J:** The practitioner consistently used different forms of communication (signs, gestures, pictograms, speech, written words and changes in tone of voice) for the student to put together his agenda for the day.

**L:** In the video, you see that the professional expresses in sign and oral language "it is finished" at the end of the date setting activity.

**O:** The intervener guided and oriented the teacher's assistant and parents to make color sets by playing a game.

In a third group of three videos:

Picture 6. “References and categories analyzed in the third group of matches”

References	Categories
Present	G, H, O
Absent	B, D
Non observed	
Mixed	A, C, E, F, I, J, K, L, M, N

**Note:** The references that appear in the third group of matches mean: Present (the categories can be observed); Absent (the categories are not evident; Non observed (categories that are not analyzed). (Own compilation).

Picture 7. “Categories analyzed by video in the third group of matches

Observable practices	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Video 2	Green	Red	Green	Red	Red	Red	Green	Green	Red	Green	Green	Red	Red	Red	Green
Video 3	Red	Red	Green	Red	Green	Green	Green	Green	Red	Red	Red	Green	Green	Red	Green
Video 14	Green	Red	Red	Red	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green

**Note:** Green indicates present; Red means absent and White, that they are not observed. (Own compilation).

As regards the present categories:

G: At a moment of group greeting, we observed that when the student expressed: "sing" through body movements and vocalizations, the intervener showed the natural gesture for that term.

H: A group greeting session offered each student the possibility of choosing who he wanted to greet.

O: In the greeting scene you may observe that the teacher's assistant received guidance in modeling higher forms of communication.

As regards the mixed categories:

A: In the group class during the greeting session, the teacher used appropriate positioning techniques for the student, to facilitate a comfortable posture to access

the learning and focus his attention on the activity. The student was provided with an appropriately sized chair that enabled him to let his feet rest on the floor.

C: In a video-film presentation where the student was working on the parts of the face, he used adhesives and participated in the activity by placing those in the corresponding part according to the instructions received.

E: In a group class, during the greetings, the teacher gave time to the student to respond and then provided verbal support for him to indicate which of his classmates he was going to greet.

F: In activities such as shopping, it is evident that in real situations, the student puts into practice social skills and other competencies.

I: At the moment of greeting, the student had the opportunity to interact with his classmates which promoted individual communication.

J: In a video clip where the purchased items are shared, we observed that the intervener used consistent techniques and accompanied the speech with signs of objects for the student to list the items that have been bought.

K: During the class on the parts of the face, when the student placed the sticker in the corresponding place, the adult offered feedback and confirmed that he had done it correctly.

L: In one of the video-films, at the end of the shopping activity, the teacher announced verbally that they have finished and were returning to the classroom.

M: In the class on parts of the face, the student was able to recognize each one of them by placing the sticker in the corresponding place following the teacher instructions.

N: At the moment of greeting, the professional oriented and guided his assistants in the modeling of higher communication signs.

In the fourth group of two videos:

**Picture 8. "References and categories analyzed in the fourth matching group"**

References	Categories
Present	C, D, E, F, G, H, J, K, M
Absent	-
Non observable	B, I, O
Mixed	A, L, N

**Note:** The references that appear in the fourth group of matches mean: Present (the categories can be observed); Absent (the categories are not evident); Non observed (it refers to categories that are not analyzed). (Own compilation).

**Picture 9. “Categories analyzed by video in the fourth matching group”**

Observable Practices	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Video 9															
Video 13															

**Note.** Green indicates Present; Red means absent and White shows that they are not observed. (Own compilation).

As regards the Present category, we observed:

C: This practice was evident when the student participated in the game with peers, and requested the repetition of the activity.

D: A the miniature swing was used to anticipate that it was time to play in the playground. The miniature was identical to the real object.

E: During the swinging activity on the playground, time-out was offered to the student, but when he did not respond, the teacher used a miniature object presentation and spoken words as consistent support.

F: As described above, the activity of playing with peers on a swing is functional in different environments because it can be practiced in other surroundings such as home and the community. Additionally, it is age-appropriate and peers are able to recognize it.

G: Higher forms of communication were modeled, as the student used pre-symbolic forms (smile, body movements) to communicate that he wanted more of the swing movement. The teacher modeled and confirmed that behavior, by making the student touch the object and initiating its movement immediately.

H: The student had multiple opportunities to communicate, when at he end, the professional presented different options so that he might choose which activity to continue with.

J: Consistent signals were used: the teacher always applied the same techniques to convey messages and anticipate the activity of playing that is to be performed. To do so, he used object signals accompanied by the spoken word.

K: As the student organized his calendar, the adult congratulated him by speech accompanied by signs and gestures.

M: In the previous example, the student developed temporal and other concepts since they were related to activities that he would perform.

We observed mixed categories in:

A: This category applied when the adult presented the topic to be worked on via the calendar system.

L: In a video clip, the professional was seen signaling "finished" when the student put an end to organizing his calendar.

N: In the previous example we saw that the professional prepared and organized materials (notebooks, cards with pictograms) to support and facilitate the teaching and learning process.

## Discussion

This section will emphasize the common and the emerging elements that resulted from the film analysis. The data obtained show that most of the participating programs apply the author's theories except two of them: The student recognizes with whom he is interacting and there are opportunities for parents and siblings to be involved. Regarding the categories that refer to communication, there are a significant number of services that implement a disciplinary approach, so that the speech therapist was the one who dealt with this issue without leaving it into the scope of the classroom and other environments. The situation described would be limiting the development of communication, as well as the opportunity to promote language by means of interaction outside therapy situations. According to Deliyore (2018):

Despite disability, communication must be adjusted as much as necessary to generate real opportunities of interaction. Everyone has something to express and communicate as long as he has the means, attention and respect of the parties involved (Introduction section, paragraph 3).

In those programs the interveners, among others, use anticipation and completion of activities, turn taking, waiting time, modeling of higher forms of communication and feedback practices in accordance with the communication level of the student, to facilitate his access to learning. The following statement enriches the above: "It is important that we, teachers, consider this multimodal approach, in order to give each student what he needs" (Antezana. YouTube, 2020, 18m:17s.).

It is relevant to highlight the importance of the waiting time that Buchanan (2015) points out in order to encourage the processing of information by the student. This strategy allows the professional to know how much he is understanding and, additionally, promotes decision making and initiative. Those who do not apply it use physical or verbal guidance, among other strategies, perhaps motivated by

cultural aspects or lack of training. Likewise, a probable incidence of Governmental regulations on the contents to be developed in the educational programs and the length of each class is likely to have influence on this issue. This fact would lead teachers to implement their classroom task in a schedule predetermined by the authorities, without considering the time students need to process learning. From this point of view, Cajal (2016) expresses, "it is relevant to point out that the school's organizational structure is an obstacle to the practices that this approach requires in terms of the length of the class, which is less than expected" (p. 57). It is possible to affirm that it is necessary to change this feature in the entire educational system so that the diverse students are equally considered (UNESCO, 2017).

The educational days are undergoing a process of change and are no longer closed door classrooms with limited participation of peers and siblings. Inclusion processes now allow schools to be open to families, friends and other members of the community. This will not only meet the needs of the student and his family, but will become a future support network (González Vides, 2020).

As regards adaptations to access learning, their use for both communication and correct posture facilitates comfort, predisposition and participation in the classroom. In those programs where these are not applied, it might be due to the socioeconomic situation of the families, the scarce or absence of public policies and the limited opportunities for training human resources (interveners, family members and the community). In relation to this issue, the World Federation of Deafblind (WFDB) (2021, June 7) states: "Because deafblindness in children and young adults is rare, most education professionals receive little or no training or support to work with these students" (p. 30).

On the other hand, Buchanan (2015) speaks about the implementation of functional activities in different environments. The analysis of this category shows that the reporting programs largely share a functional approach in the education proposals, with some exceptions where there are approaches from a clinical point of view. In others, it is complex to define the purpose of the activity. This suggests that this is a consequence of a professional training anchored in a rehabilitation paradigm which considers that the person has a deficit. This lack of training could be due to the scarce offers of academic programs or to attitudinal barriers caused by the lack of belief in the contributions that people with multiple disabilities and deafblindness can offer. In this regard, "A great teacher must always believe in the students' potential..." "We must believe in the students' talent to be able to help them" (Tabichi, 2019, Identidad of Corrientes). Another possible cause for the non-application of functional activities, could be the lack of authorization by the educational authorities who would be using as a guide the functional curriculum centralized in the acquisition of habits applied in the 90s. This curricular model would be far from the current principles that guide educational policies based on an inclusive prescribed curriculum, under a paradigm of rights. In those cases, where professionals apply it in their practices, they are aware of the possibility that it offers the interweaving of different academic contents (mathematics, science,

language, among others). Functional activity is the one that allows the acquisition of concepts that the student will apply now and in the future. (Jacob 2021). This approach would be allowing the deepening of the contents prescribed in the different educational levels with meaningful, more complex learning for life which would cover the different areas of the curriculum and be appropriate to their chronological age. Besides, we understand that they recognize the need for the repetition of skills to acquire concepts to be transferred to other environments.

Another indicator to highlight is Partial Participation/Total Participation. A significant number of sources incorporate this indicator in the educational task, because it allows the participation and the acquisition of learning, while modeling higher communication forms like showcasing. Participation in the development of the whole activity allows the student to understand the global process and prevents the acquisition of erroneous or partial concepts. There are some professionals who seem to feel that indicators are a challenging task, and this leads them to not applying it. One might wonder how the culture of our schools is influencing this, since we observe practices with excessive support from adults that limit full participation of students and makes them feel dependent. According to Shevde: "Both culture and training opportunities weigh in professionals and family members. Mainly, the common problem we find in rural areas is poverty and illiteracy leading to a lack of awareness of children, their skills and needs, since education is not a priority for them" (personal communication, December 29 2021).

In terms of the categories Teaching Planning and Professional Practice/Collaboration, there is a significant number of professionals who present challenges to carry out personalized educational programs in group proposals and in collaborative team work including therapists and families to offer a proposal from a holistic point of view. Although in LA&C, the academy and the bibliography validate these aspects, when it comes to practice, it seems that these institutions do not allocate the human and material resources to plan as a team. As regards this, Ferioli (2015) states that government authorities and educational institutions must guarantee the availability of material and human resources so that professionals can offer personalized guidance in terms of augmentative and alternative communication methods, strategies and curricular alignment for the student to access knowledge. Likewise, material resources must be guaranteed to facilitate access to the environment and the curriculum. Cajal (2016) affirms that: "lesson plan provisions are general in nature, and result insufficient to guide classroom activities; in the same way, class records include indications of content while activities or strategies remain absent" (p. 55).

It is to be noted that the analysis of practices such as the participation of families in the classroom work led us to ponder about the importance of training human resources (professionals, other staff of the institution, family and community members) to extend the work carried out in the classroom to the home, the community and vice versa. Rosenfeld says: "The degree courses marked a turning point. We now apply the training in the family and with other children in our Foundation. Our training allows our children to progress" (personal communication,

August 5 2019). For this reason, every implied person should receive training on what, how and why to carry out a certain process and not just replicate what professionals tell them to do.

In addition, we were able to evaluate the need to incorporate other categories to Buchanan's (2015) observation protocol: "Working with the family in the classroom context", "Universal design for learning (UDL)" and, "Play as a resource for teaching".

- Working with families in the classroom context. In the analyzed videos, family participation is especially observed in Central American programs. In one of them, strategies that facilitate learning such as waiting time, anticipators, augmentative and alternative methods of communication, positioning, accessibility and organization are evident. Working with families in the classroom favors the transmission of what has been learned at school to the home and vice versa as well as collaborative work. For example, in one of the videos, this category is observed when working on the topic of matching; the teacher and a member of the student's family offered support, table utensils, according to the student's profile, so that they can place the fruit inside a cake to participate in the formation of a set of strawberries.
- Universal Design for Learning. Five of the videos show the three principles as a working philosophy. *Principle I*: It provides multiple forms of engagement; for example, in a group greeting class, music is used to sing and start the day, following the student's interest and motivation. This allows him to organize his mental schemes, anticipate what will happen, and maintain readiness for the activity. *Principle II*: It provides multiple forms of representation. During the development of a class, a daily calendar with pictograms is used for each student to organize his daily activities. The pictogram is accompanied by gestures, conventional signs and verbal language in appropriate ways according to the needs and possibilities of the student. This approach facilitates the understanding of concepts, as well as participation and achievement of the necessary skills to be able to function in other situations. *Principle III*: It implies multiple forms of behavior and expression, as in a scene in which the student recognizes the parts of the face. He uses stickers to paste on the relevant parts that the professional indicates, as this marks a sign of respect for diversity in the resolution of the activity.
- Game as a teaching resource: Four videos show this category. It facilitates participation, exploration and interaction with the environment, promoting motivation, interest and the acquisition of new concepts. In one of the videos, the teacher proposes to his students a game through the use of rings of different colors to form sets of people. Upon the instruction given by the adult, the child entered or left the hoops, showing pleasure in the activity by taking the object, smiling and asking to continue the game.

The categories pointed out by Buchanan (2015) are mostly present in the professional practices of the reporters in this study. These antecedents reaffirm the



competencies that anyone who works with a focus on population should have. However, there are others, such as those mentioned above, which, in the authors' opinion, follow Buchanan's (2015) findings in order to minimize the risks of exclusion in students with multiple disabilities and deafblindness.

## Conclusions

The data obtained show that the categories described by Buchanan (2015) are applied in a significant number of LA&C programs. Likewise, others emerged such as: "Working with the family in the classroom context", "Universal Design for Learning (UDL)" and "Play as a resource for teaching". The categories of Buchanan's protocol (2015) and those that emerged, guarantee spaces to respond to students' needs, interests, potentialities and learning styles within formal and non-formal educational environments. These categories make it possible to analyze professional practices, evaluate whether students are learning, determine whether adjustments are needed, evaluate cooperative collaborative work and the role of families in the process.

Moreover, the data show that there are aspects that require attention. In the academic area, the higher education centers should enrich their "Human Resources Training", with career proposals to provide competencies, quality practices and research thanks to academic and systematic training of professionals. Likewise, it is expected that they offer permanent training courses to update human resources (professionals, family and community) in the area of Public Policies. It is necessary to analyze the regulations in relation to the development of the prescribed contents under a functional perspective, the organization of class schedules so that they are consistent with the student's needs, the provision of support such as nursing services for children with fragile health, cognitive, architectural, communicational, programmatic, methodological, sensory accessibility among other factors, so that they can have equal access to learning. All this allows us to affirm the importance of interministerial cooperative work to provide efficient responses to the needs described.

The authors are aware of the need to continue studying this topic in depth, as there may be other categories besides the ones mentioned here. Likewise, the dissemination of efficient practices will no doubt reduce the risks of exclusion and make significant changes in those incipient educational programs in favor of this population. Finally, the authors recommend the adaptation of Buchanan's (2015) protocol, to include the new categories that emerged from the present study and its validation in order to have a tool that allows us to look at the regional practices that facilitate access to learning.

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