Augmentative languages, general characteristics and practical applications

Prof.univ.dr.DoruPopovici[1]
Asist.univ.dr.Viorel Agheana[2*]
[1]University of Bucharest, Faculty of Psychology and Educational Sciences
[2]University of Bucharest, Faculty of Psychology and Educational Sciences

ABSTRACT

The article highlights the main characteristics and practical applicability of augmentative and alternative communication. As a new area of interest, especially because of the high practical applicability in the educational field, the therapeutic approach of augmentative and alternative communication is a topic which can be widely extended. The article achieves distinctions in terminology and describes few systems and augmentative communication devices and techniques used worldwide.

KEYWORDS: *augmentative, alternative, communication, device, language, system*

1. Augmentative and alternative communication-conceptual delimitations

Some disabled people can't use speech as a primary means of communication and they are forced to use specific techniques and means. The idea of augmented communication is to use all the available skills of the disabled person, in order to compensate for impairment of verbal communication. With the technology that is continuously developing, new opportunities open to the disabled people, in order to reach an increasingly better level of functional communication. Augmentative and alternative communication refers to all methods and means of communication intended for helping/replace speech (and / or writing) when they are affected.

With the apparition of the80s augmentative and alternative communication as a discipline of its own, researchers and specialists in psychology and communication have begun to use new technologies available at that time to improve the communication skills of the subjects, their vocabulary level and achievement complex tasks related to communication. (Beukelman & Mirenda, 2005)

"Augmentative communication refers to any form of communication that replaces or expands the speech. Every single individual uses some of the techniques and means of augmentative communication. Long before having access to oral language, healthy children interact with adults by means of augmentative non verbal techniques such as smiles, visual contact or differentiated vocalizations. Such communication is evidence of an intention early interaction and is very strong through communicative effect"(Vanderheiden et al., 1986).

We can define an augmentative and alternative communication system "an integrated group of components, including symbols, communication auxiliary, strategies and techniques used by the individual to support communication" (ASHA, 1991, p.10), this definition emphasizing the use of multiple ways and components and also incorporating all residual communication skills of the child. These skills can mean any remaining speech or vocalization capacity, gestures, hand signs,

---

* Corresponding author. Tel.:
E-mail address: agheana_viorel@yahoo.com

the ability to use communication boards and electronic devices for issuing voice. That's the reason why the AAC is a form of communication.

AAC is also a way of intervention that uses manual signs, communication boards with symbols and devices that emit multimodal synthesized voice communication, allowing to children to use any means to express their thoughts, and also all communication methods fated to help / replace speech and writing when they are affected. (eg in cases of: cerebral paralysis, stroke, movement disorders such as neuronal, dysphasia, aphasia or learning disorders)

AAC is required when a child doesn't normally acquire speech and there is a significant delay in development. Ideally, the AAC includes more than one communication system, the child using the most appropriate depending on the people who communicate with the circumstance and activity that is involved in.

2. Classification

From the point of view of the means used, it defines two categories - direct and intermediate augmentative communication.

Direct augmentative communication – gesture based - relies on gestures, body postures and facial expressions. It does not require additional equipment or material and relies on gestures, for example, MAKATON manual system. Since imitation of signs requires a rather low intellectual level, these methods can be applied to subjects with severe mental delay. Another advantage is that they are available anywhere and anytime, requiring no materials or equipment. The disadvantage is that it can be communicate only with people who are familiar with this type of communication, because this system does not enable understanding by subjects who have not been taught those signs.

Mediated augmentative communication refers to using graphic symbols in communication, that are present in books / brochures or boards, which the child carries, or involves a very complicated software system with an extensive vocabulary, which can be used in various situations. Symbols are based on very realistic icons such as system designs MAYER-JOHNSON, up to abstract code symbols as BLISS symbol system or alphabet. Therefore, this type of communication is addressed also to subjects with severe delays (autistic spectrum disorders - TSA, genetic disorders, cerebral paralysis, etc.). The advantage of mediated communication is represented mainly by higher productivity and flexibility that these techniques ensures, which can be based on portable equipments such as, for example, synthesizers. It has, however, some disadvantages, because they depend on the availability of computers; they can lock or stop working when the batteries are discharged.

2.1. Hand sign language- Makaton sign system

The Makaton system contains 200 signs with semantic equivalences in basic lexical fund, is divided into 8 stages of growing complexity, pursuing normal pattern of language development in ontogenesis. The first steps include essential signs, so that an individual who, because of neuropsychological deficit can't move forward, to have a means of communication, although limited, yet functional. A 9th stage presents additional vocabulary, which can be inserted into any of the eight previous steps as needed. The beneficiaries of this way of communication are children with severe mental disability, those with Down syndrome or genetic disorders, autistic spectrum disorders and even those with varying degrees of cerebral paralysis.

2.2. Communication through graphic symbols

Communication through graphic non-oral symbols is mediated methodology, which requires a device that consists of a set of icons. These symbols can be portable or placed in a

computer or synthesizer, high-tech device that adds name written and oral to symbol, recorded on magnetic tape, forming the so-called lexigrams. Standardized pictograms systems are black and white drawing and represents nouns category, verbs, adjectives, usual adverbs. They included or not their name shown, and is designed for children with lower mental age. Nowadays are used systems such as symbolic communication by icons Mayer Johnson, Rebus system, Makaton and Picsyms symbols. As ground rule, graphic symbol systems are recommended for children with neuro-psycho-motor disorders, and also for those with mental disability and those with autism spectrum disorder. At the same time, they are also used for adults with aphasia after stroke.

2.3. The pictographic system

Augmentative pictographic systems differ depending on the type of subjects who use it and their communication needs. The most common pictographic systems are PECS (Picture Exchange Communication System) and PCS.

Graphic symbol system (PICTURE COMMUNICATION SYMBOLS - PCS, Mayer-Johnson, 1981) is like a kind of album with a set of detachable sheets, comprising over 3,000 images in three different sizes, in squares with different sides of 1.8 cm, 2.3 cm and 5 cm. Images caught in springs can be removed, Xeroxed, and desired symbols can be cut. The designs with bold black and white border lines can also be colored as similar to reality.

The role of the therapist in the communication process is to interpret the message of the speech impaired person, but also to extend it in different contexts and situations.

2.4. Communication via electronic devices

Over time, especially American and British specialists have developed and tested various types of electronic communication devices, including: Hawk system; Cheap Talk; Teach Speak; Teach Talk (AMDI); Go Talk; Portable voice; Super Wolf and Wolf (+ portable voice words) etc. to facilitate communication of children with severe disabilities.

Nowadays, electronic communication devices are being connected to a computer or are portable with embedded software; both are intended to generate verbal language. Thus the child with severe disabilities selects either a symbol or a picture or a word / phrase and the computer turns synthesized voice message through verbal-oral statement.

3. Intervention strategies by AAC

The multidisciplinary team involved in the education and therapy of children with communication disabilities (teachers, therapists, doctors, social workers, parents) must build a communication system adapted to each case. Even if an alternative learning communication can follow certain steps, recommended by specialists internationally - the result - the communication system - it will be strictly individualized according to the possibilities and needs of each child.

3.1. Creating motivation for communication and awareness of child to the fact that the adult is his partner in communication, are the first steps you should take to begin implementing the program. The motivation for the child communication is very important because without it the child will not be interested to communicate. The first attempts to change the message should be focus on what the child likes and interest.

Adults will be able to interpret the signs of child: vocalizations, stretching hands, smile, eye fixation, or conversely, crying, agitation, in order to establish what he likes and what he does not like. Things are more complicated in children with severe disabilities, because they can show what they like by subtle clues: change of muscle tone (muscle tightness) or respiratory rate (acceleration).

To learn what motivates the child or draws his attention, we need to do test cases by choice. Place the child in front of one or two types of food or toys and see the reaction. (Reichle, York, & Sigafoos, 1991). Another effective way of finding out the type of motivation can be done by noting the child's reactions, when and who / what are caused: smile, cry, laugh, restlessness. Watching the coincidence of certain undesirable objects / persons can deduce what arouses interest of the child.

Often, children do not communicate simply because they do not need (needs are met before they get to communicate), is not expected to do this or not given enough time to do it. Therefore is very important the strategy of "my turn, your turn", in which the child is told that is his turn to communicate, stopping us from what we do looking at him and waiting him to give the answer.

3.2. Intentional communication

For a child with disabilities who's not yet communicate intentionally, the purpose of this study should be to obtain intentioned communication. More specifically, the child should learn that certain behaviors (those through he communicates something) will be answered specifically and by using them deliberately he can obtain some control over his life. In this moment the child is in pre- symbolic development stage, so photos or other graphic symbols are not indicated to be used. It is recommended to start from existing behaviors in the child's repertoire (eg, gestures). For example, the extent of hand, fixing his eyes or facial expressions may be used regularly by the child, and the aim should be to learn to use them for communication purposes. We mean, we should give to the child an immediate response (offering object) for each communicative gesture that he performs, in order to connect the responses it receives from the environment as a result of his reactions (Van Tatenhove, 1987). Gradually, the child will learn to produce behavioral response to get that response. It is useful as an adult to comment aloud all reactions of the child, giving him gestures significance (ex. you raise your hands, it means you want to take you in my arms) to increase the child's ability to understand spoken language (receptive language).

Game activities and daily routines are very suitable for learning intentioned communication. Structured routines should be created, predictable around each daily activity such as dining, bath, and dressing, going to the toilet or to sleep. The goal is that the child to gradually anticipate the different steps of various activities and respective routines. Also, simple games based on repetitions (ex. Boo, the old man passes by salon) are indicated for initiating an intentional communication answer from the child; periodically the game stops and we are waiting for the response / reaction from the child. These types of activities lead the child to understand the cause-effect relationship. The basic functions of intentional communication are: make choices, demand and rejection, request of adult attention. These will have to be formed to the child before proceeding to the next step.

3.3. The introduction of graphic symbols / icons

Once the child masters non-symbolic communication (ex. requires something by showing or looking at the object, or removes an unwanted object, choose between two objects), the next

step is learning how to use symbols. This is very important because it allows the child to communicate about objects, people, events which are not present at the moment of speaking about them. Also, symbolic communication is essential for the acquisition of academic skills.

A child, who is in the stage of pre-symbolic communication, will have to start learning and interaction by using concrete objects and then move to other symbols with increasingly higher degree of abstraction. Van Tatenhove (1987) recommends for intentional symbolic communication development, training in child the capacity to ask, to reach for an object in the visual field. It will put two identical objects that make the child happy, and when he reaches for one, will be given identical pair, thus forming ability object-object representation. When the child understands that indicating an object gets his pair, he is already starting to develop understand symbols.

After the child learns to indicate an object to get the identical pair, it is time to place a picture under each object the child requires. Whenever he asks for the object, it creates and strengthens the link between object and image. Gradually, their position will be changed so that the photograph is in the spot light and the object is in a secondary place. The object may even be covered by hand so that child rather guesses its presence. Then it will remove the object altogether, leaving the child to show only the image when he wants that object. Strengthening the connection will be done by giving immediately to the child the object he requested. From the pictures it moves to the images that are similar in size, shape, colors to the indicated object and after that to gradually reduce the size, then the colors, using eventually icons. Similarly it will be done for learning sign language, another system of symbols, along with the graphics symbols. If a child is already capable of intentional symbolic communication, you can skip the steps above and you can jump on learning the icons and hand gestures and, if possible, to acquire letters and reading-writing skills.

People learn to communicate, just by communicating in situational contexts. In order to develop the children speech, we have to give them the context of social communication and means of communications with the important people in their lives. Naturally, AAC systems used by different persons are strictly individualized based on age, level and type of deficiency, the abilities and communication needs. For example, some children with severe and associate disabilities can benefit from AAC: gaining a greater ability to concentrate attention, to increase mobility and to play, to use a switch, to acknowledge the relation between cause and effect, and to make a choice between several options - representing a set of transferable skills useful for communication, before the formal communication system to be introduced to the child and used effectively by this. Using AAC and speech development should be simultaneous purposes for therapeutic intervention. Classic speech therapy and speech stimulation and AAC intervention is good to be done in the same time. The degree to which the focus is more on one or the other must be determined by evaluating the child in various communication situations and daily routines specific to his age. In the same time, the therapist, with all the multidisciplinary team should pay attention to the difficulties that children with special needs encounter when interacting with alternative communication means used in therapy and to adapt the strategy to the specific needs of the child, managing to overcome its communication limitations and the progresses to be considerable. (Beukelman & Mirenda, 2005).

Conclusions
In conclusion, when a child has a disability that affects his verbal and communication skills, using ACC leads to significant communication opportunities at school, social, supports

and develops communication skills of children in the context of normal social networking, even if by other means than speech. The aim is to empower children with a functional communication mean and the system AAC is only one way to achieve the goal.

It should be permanent considered that language and communication are by nature fundamental aspects of social life, so they must be permanently extended the ways of communication using AAC system to help integrate the most of children with special communication needs. And here we are referring both to the development of the techniques we listed above and the inclusion of language issues, cognitive and social aspects of communication in specific programs. In addition, easier access to communication for people with special needs requires a whole series of circumstances that facilitate communication, which we could create both with the technology and with professionals and the family help.

The adjustments the educational system and society need to make to facilitate the inclusion of people with disabilities should be part of a national strategy that would help find the most appropriate methods and techniques to achieve social inclusion of the people with disabilities, so they could benefit from active participation in social life. And is very important to do that because there are so many examples of nonverbal people with multiple disabilities who succeed to live independently.

REFERENCES

[1] American Speech-Language-Hearing Association - ASHA (1991) *Report:Augmentative and Alternative Communication*, 33, pp 9-12, suppl. 5

[2] Beukelman, D.R., & Mirenda, P. (2005) *Augmentative & Alternative Communication: Supporting Children & Adults With Complex Communication Needs Hardcover*: Paul H Brookes Pub Co; 3rd edition

[3] Kraat, W., Arlene (1986) *Developing Intervention Goals*. In: *Augmentative Communication - An Introduction. American Speech- Language-Hearing Association*, Rockville, Maryland.

[4] Popovici, D.V., Racu, A., Creţu, V., Dani, A., (2009) *Intervenţia recuperative-terapeutică pentru copiii cu dizabilităţi multiple*, Editura .Ruxandra, Chişinău

[5] Popovici, D.V., Ţuţu, A.S, (2014) *Comunicarea augumentativa – o cale deschisă spre integrare*, Revista de psihopedagogie, 1, 127-135, Editura Universităţii din Bucureşti

[6] Popovici, Doru-Vlad (2000) *Dezvoltarea comunicarii la copii cu deficiente mintale*, Editura Pro – Humanitas, Bucuresti

[7] Reichle, J., York, J., & Sigafoos, J. (1991). *Implementing augmentative and alternative communication*. Baltimore, MD: Paul H. Brookes

[8] Van Tatenhove, G. M. (1987) *Teaching power through augmentative communication: Guidelines for early intervention* (pp.185-199). Journal of Childhood Communication Disorders, 10

[9] Vanderheiden, G.C., & Yoder, D.E. (1986) *Overview.In Augmentative communication: an introduction* (pp. 1-28).Rockville, MD: American Speech, Language and Hearing Association