

## Augmentative Communicative Systems in Physical Education for Students with Special Educational Needs

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### Abstract

In modern society, known as the society of information and communication, it is surprising that we continue to limit the capacity of communication to certain parts of the population such as students with special educational needs. For them, communication restraints mean an obstacle to the development of their educational capacities. Thus, considering carefully the potential alternatives to improve the teaching-learning process should represent a major goal for Education as a whole. In this study, we will try to analyze the features and alternative resources to encourage communication and the educational process in this type of student.

**Keywords:** Communication; Education; Physical education; Special education; Diversity; Didactic resources

### Communication Systems

In a present-day society based on information and communication, it is surprising that certain sections of the population, such as students with special educational needs, continue to be limited in their communication capacities. For this reason, in this research we will try to study and analyze the features and didactic potential which certain resources have when used by this kind of students in Physical Education (P.E.) lessons.

Generally speaking, communication is defined as any process by which a message can be transmitted from one subject to another, whatever the means used. Thus, it is essential in any learning process establishing a mechanism to transmit students not only messages which include contents, but also those attitudinal and behavioral educational messages implying the learning of values and rules applicable in their training. If a person cannot communicate, he/she will not be able to take decisions relative to their life, which would cause isolation and a high level of dependence.

As a result, communication is not always verbal. It can also imply gestures, signs and non-verbal symbols, which allow the transmission of the required messages and values. This communication system is known as Augmentative and Alternative Communication Systems (A.A.C.S.) and it can be defined as: "The educational intervention tools, for people with different communication and/or speech disorders, and whose aim is teaching a structured set of non-verbal codes through specific learning processes, with or without a physical mean, allowing representation functions and to perform communication acts (functional, spontaneous and generalizable), by themselves or together with verbal codes, as partial support or with other non-verbal codes" [1].

Likewise, other authors define in a simpler way the A.A.C.S. as follows: "every communication system which does not use articulated words but with a satisfactory conventionalized structuring level to

transmit information. It is therefore language communication where the issuer does not articulate specific speech sounds" [2].

These systems can be of two different types: alternative and augmentative. Alternative systems are aimed at people unable to use the spoken language, either in the short or long term and therefore need to find another way of communication. Whereas augmentative systems do not delete verbalization or spoken language, but, since communication is not as satisfactory as it should be, some mechanisms are designed to increase and consequently improve it. Both systems have in common the increase of motivation towards communication in order to encourage communication skills of basic needs, as well as emotional states and opinions on specific issues.

The use of Augmentative and Alternative Communication Systems (A.A.C.S.) within students with speech impediments provides a number of advantages in the teaching process such as: improvement of socialization and interpersonal relationships, reduction of anxiety states by avoiding isolation, facilitating the learning process and improving quality of life thanks to the development of self-esteem and personal independence. However, it also carries some disadvantages such as: unidirectionality in the communication established, statements complexity, communication slowness, increase in costs, need of high memory capacity, limited teachers' training regarding design and implementation, and difficulty in use.

Lloyd and Parlan state two clearly differentiated basic types of classification for the A.A.C.S.: aided and unaided communication systems. The first one is known as "Aided Communication System", which requires supplemental materials in order to assist communication, such as BLISS system, PCS and PEC System which apply: pictograms, miniatures, photos, drawings, actual objects, etc; whereas unaided systems, also called "Unaided Communication Systems", do not use external supports and are closely related to reeducation, such as mime, fingerspelling, sign language, bimodal communication and Cued-Speech.

Among these communication support resources using pictograms we can find communication boards or notebooks, portable communicators or computer programs.

a) Communication board or notebook: Support in which the most common pictograms, letters, syllables, etc. are organized for effective communication and where boxes are ticked to form the message.

b) Portable communicator: Device which reproduces the sound of the words we want to express, through the selection of ideas with a previously-recorded voice. In the event that boxes cannot be pressed, an automatic scanning will be activated where images will be sequentially highlighted to stop in the desired box, either through the use of some access device such as mouse or keyboard, or through some pushbutton using any part of the body.

c) Computer program: These specific programs allow us to communicate through a computer, not only as a fixed format, but especially through mobile devices such as laptops, netbooks, PDAs, mobile phones, smart phones, tablets, etc.

In order to facilitate and provide a higher speed in the communication process, it is necessary that boards, notebooks, portable communicators and computers are grouped and presented according to regular subjects for each communication context, as well as questions and answers must be short, clear and precise. When augmentative and alternative communication systems are used, patience is required so that each person is given the necessary time to issue a message calmly and free from tensions. We should never assume that they already know what we want to say, but we need to learn to wait until they complete the message.

### Special Needs Education (S.N.E.) features

First of all, it is convenient to determine the type of students we refer to when posing communication problems of SNE students, since within the overall attention to the student diversity every teacher should follow in their teaching process, a number of difficulties and needs among students may appear. SNE students could be defined as those students who require, temporarily or permanently, very specific educational supports and/or services [3] and according to the Warnock Report [4], SNE are those needs that imply: a) the provision of special means to have access to the curriculum using equipment, facilities, and modifications of the physical surroundings or teaching techniques, b) the provision of a special or adapted curricula, and c) a specific attention to the social structure and emotional atmosphere.

Among those students that have limited communication skills in physical education lessons and therefore need to greater or lesser extent adaptation measures, we find students with different kinds of impairment, deficiency or disability, according to Barreiro [5].

The World Health Organization [6] grouped disabled people in three big blocks: people with cognitive disability, with sensory (hearing or visual) disability and with physical (cognitive or neuromuscular) disability.

### Communication in Physical Education

For the development of any learning process, it is essential to keep some type of communication between teacher and student so that the teacher is able to adjust the most advisable and efficient communication model and channel in each situation. Communication in Physical Education, contrary to what traditionally happens in other subjects, does not normally occur in one direction (univocal) so that students can listen to the information that the teacher seeks to transmit, not even in two-way direction by means of a dialogue (bi-univocal) for the student to obtain more information. It is most

advisable to keep a multiple communication, where all the participants in the learning process can contribute and enrich the information, becoming major actors of the teaching process. In this way, students not only receive communication but also become issuers of new information enriching and individualizing the teaching-learning process. Communication in Physical Education raises some differentiating features in relation to other curricular subjects, especially due to its dynamism and use of other less common communication channels such as the touch system, which may be banned or limited in other subjects where students remain in their seats, with no other type of social interrelation than the verbal communication.

Another differentiating feature of communication in Physical Education, is that whereas in other subjects this communication is mainly verbal, in our subject, non-verbal communication percentage is the highest, transmitting not only theoretical and practical knowledge, but also attitudes, values and ideologies. Thus, teachers must take into account not only the messages they want to transmit, but also, and mainly, the spontaneous answers and messages from the students which can continuously provide us with information about their motivation level, class atmosphere, need for rest, etc. Furthermore, verbal communication in Physical Education presents numerous interferences and difficulties, resulting from the noise issued by the students and objects hitting and scrolling, from the simultaneous verbal communication of a large number of individuals, and the lack of acoustic suitability in the spaces used to teach lessons, outdoor facilities, with echo problems or external noises.

Likewise, the emotional side results are quite important in Physical Education communication because the teacher must transmit a message and also provide students with confidence to carry out the different activities confidently and avoiding risky and insecurity situations.

The messages transmitted in Physical Education do not pretend to reach an identical level of assimilation in all the students, since they are often subject to different interpretations of the rules and standards that encourage creativity and originality of motor responses. When tasks are explained in class, instructions must be clear and concise and must not give rise to confusion, and be not too long, allowing students to look for the alternative possibilities in their implementation. Appropriate limits, clearly set out, must be established only for those aspects which could raise lack of control or risk.

The lack of physical or psychological barriers between Physical Education students and teachers, as in other subjects, makes communication more fluent, confident and close at an interpersonal level.

### Communication problems in Physical Education students

We do not communicate in a vacuum, we communicate to express affection, love or hate, or to teach or ask for something in a context of personal relations and people with communication difficulties are aware of their limitations. A blind person knows that the gestures of their interlocutor completing the message are beyond themselves; a deaf-mute person can be insecure about the message got from lip reading; a mentally handicapped person does not have the assurance of keeping their interlocutor's attention and a motor handicapped person is aware that their movements are not very skillful and can cause ambiguity in interpretation. All these factors cause in the disable a

permanent state of anxiety and insecurity when communicating, creating a constant fear of going wrong or being misunderstood. This makes them need more time to be sure about the correct interpretation of their message. This situation in customary environments may not be too difficult, but in Physical Education lessons, where messages and responses are continuously issued and in a faster way because of movement, difficulties are increased creating on the disabled feelings of isolation and refusing to perform physical-sport activities. Therefore, it is crucial for the communication of these students the way in which they assume their disability when establishing relations with other people. Whereas some of them communicate aware of their disability trying to overcome it, others try not to show that disability not to feel rejected by the group without accepting their limitation. In order to understand how a disabled person communicates with the others, it is not enough to know their difficulties and limitations, but also we must be aware of the attitude of this person to face their problem to improve communication, by helping them to overcome those limitations.

When they adopt this position of rejection towards physical-sport activities, the disabled begin to feel insecure, reducing the number and frequency of the relationships with others, which causes situations of social isolation and irregular school attendance.

The attitude towards those people, whose disabilities limit their communication, is essential to help them improve their socialization. If interlocutors show a permanent, patient and continuous effort to better understand them, they will encourage these disabled people to go on persistently without giving up their attempts to communicate. Only taking a positive attitude by those around the person with communication limits, will the latter create their own positive attitude and establish satisfactory personal relationships with others.

There are many situations where physical education students can face some communication problems in their classes, which may cause isolation and dependency conditions affecting their quality of life. In order to balance these difficulties, alternative and augmentative communication systems are used, common in the market nowadays, thereby facilitating their communicative interaction. Nevertheless, there is a deficient number of systems developed taking into consideration the specific context of physical education and sports. These resources are therefore designed to prevent and balance, control, mitigate or neutralize communication restrictions and limitations, encouraging their personal autonomy.

The use of A.A.C.S. with disabled students in physical education classes enables a number of benefits for communication such as: developing spoken language, improving autonomy and self-esteem, providing added safety by eliminating communication risks, reducing anxiety, and improving socialization, avoiding isolation. However, there are also some drawbacks, such as that they still have a certain communicative unidirectionality, damaging the development of verbal communication because of comfort, a high amount of memory effort, slowness and the interlocutor needs to know its know-how.

As a result of this revision, it is proved the prime role of communication in human relationships in physical education, giving it much greater relevance to that given at present, especially with SNE students. Conversely, the teachers' disengagement and, in many instances, the lack of knowledge about the possible alternative and augmentative communication techniques are still deficient, so that they should be developed in the next few years. However, communication pedagogy in physical education should not be restricted to improving communicative techniques but also to the

motivation of SNE students to learn to communicate more and better towards a greater social integration and therefore avoiding isolation. But this is a mutual work and not only responsibility of disabled students, since the rest of the students should take part in this integration process, by accepting differences positively and understanding difficulties.

## Conclusion

With regard to the overall characteristics and possibilities of SNE students with limited communication abilities in physical education lessons, and in order to foster their educational integration in the normal development of the teaching process without any kind of risks or dangers for their physical safety and their classmates' safety, leading to a real integration of SNE students, we should take into consideration the following aspects when applying A.A.C.S methods:

### Students with hearing disabilities:

- Start each session explaining individually all the activities to be developed and the order in which they will be implemented
- Talk face to face, ensuring that there are no obstacles impeding the correct perception of the information by means of your lips movement and without emitting messages back turned to them
- Instructions and rules must be given in short sentences and vocalizing slowly
- Transmit implementation rules and instructions preferably by means of visual examples, drawings or schemes, rather than verbally
- Use signs and signals which foster a better and quicker understanding of the messages during the activity implementation

### Students with visual disabilities:

- Implement tasks in pairs in which these students can always have their classmates' help
- All the spaces used must be known and safe so that they can move independently
- Verbalize previously and in detail all the rules and instructions for the activities and games to be developed
- Use clear language adapted to the students' level of development, checking that they have received the messages correctly
- Avoid ambient noises which could lead to disorientation
- Keep doors and windows closed to avoid dangers and noises
- Adapt material resources to the space and vision conditions of these students, using colors clearly visible from the floor and background of that space
- Mark in a visible and consistent manner without any risks, the sign or point they must identify during the activity implementation
- Use material resources in bright colors, soft and with comforting textures and smells, which emit sounds and allow an easy holding if possible
- Address these students by their names and, if possible, with direct contact so that they know who is speaking
- Limit the spaces to enhance control and provide them with security
- Establish assessment criteria or reinforcement measures to motivate and equate them with the rest of their classmates; in basketball for instance, awarding points just because the ball touches the backboard without entering the basket
- Involve at any time the compliance with the rules ensuring security

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**Students with cognitive disabilities:**

- The difficulties found in this type of students can be grouped in two main categories: those impeding them to get in contact with other people and those hindering the correct perception or emission of a verbal or sign message. In order to correct those problems, they must also develop their affective and social competences
- They must build structures that would enable them to generalize the understanding process of intellectual, psychomotor and affective learning
- Their speech is poorer because thought can also be poorer and slower, especially in physical education, where the message exchange is much faster. This aspect should be taken into consideration to avoid rejection when being unable to cope with the comprehension rhythm

**Students with motor disabilities:**

- These students can also present some other communication problems, either due to muscle-skeletal disorders, voluntary

mobility problems, or social inhibition problems arising from their reduced mobility. In those cases, some assistance will be required to improve their better physical development, facilitating the access to the environment where they move, motivating them and adapting certain types of material and equipment resources to their needs

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