

# Physical activities and special educational needs

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## ABSTRACT

Rio, L., Damiani, P., & Gomez, F. (2015). Physical activities and Special Educational Needs. *J. Hum. Sport Exerc.*, 9(Proc1), pp.S447-S454. The Ministerial Directive dated December 27, 2012 and the subsequent Circular dated March 6, 2013 for the identification of students with special educational needs (SEN), have planned a school that knows how to respond appropriately to all the difficulties of students by preventing them, in the perspective of a deeply inclusive school. Ianes & Cramerotti (2013) stated that in order to recognize the real needs of a student, it is necessary to understand their current and general situation of functioning; ICF (WHO, 2001), in fact, being fundamentally organic-psycho-social, obliges to consider the totality and complexity of the functionings of the people and not only organic and structural aspects. From this perspective, the didactic setting that is built during Physical Education and Sport, is an excellent valuation framework for the identification of SEN, because physical activity has always been recognized as a disciplinary area that allows students to express their personality, build dynamics of relationships, express motor behavior, etc. (IN 2012). The Personal Factors, in fact, were considered key elements for the construction of instruments with indicators and qualifiers, because according to the latest neuroscience research (Caruana & Borghi, 2013; Damasio, 2009; Gomez Paloma, 2013), they are particularly influencing into the learning process. The research involved 34 schools (2500 students) from four different regions. For data collection has been activated an online platform which allowed to the teachers to download the necessary tools for the assessment and enter the results at the end of the process. From the data analysis it was possible to understand that there is a significant and positive correlation between indicators encoded by ICF and indicators that detect situations, attitudes, behaviors and postures specially created for the identification of difficulties and special educational needs, affirming the validity and reliability of the tool and giving teachers the opportunity to apply strict criteria to identify pedagogically students and act in an inclusive way. **Keywords:** SPECIAL EDUCATIONAL NEEDS (SEN), INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY AND HEALTH (ICF), PHYSICAL EDUCATION, SPORT, INCLUSION.



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## INTRODUCTION

Since 2012, MIUR (Ministry of Education, University and Research) issued a Ministerial Directive (27.12.2012) and two Ministerial Circulars (08.03.2013 and 22.11.2013) that invite schools to restructure the integrative system of subjects with difficulties, guiding the directors and teachers towards an inclusive culture, aimed to the identification of the problems of the subjects. This system was not just limited to clinical aspects and disease with the right of support, but took into consideration especially the psychosocial factors that can influence the school success of the student. In particular, the Ministerial Directive dated December 27, 2012 and the subsequent Circular dated March 6, 2013 for the identification of students with Special Educational Needs (SEN), have planned a school that knows how to respond appropriately to all the difficulties of students by preventing them, in the perspective of a deeply inclusive school that removes barriers of learning and the participation of everyone.

Ianes & Cramerotti (2013) stated that in order to recognize the real needs of a student, it is necessary to understand their current and general situation of functioning; ICF (International Classification of Functioning, Disability and Health WHO, 2001), in fact, being fundamentally organic-psycho-social, obliges to consider the totality and complexity of the functionings of the people and not only organic and structural aspects.

The International Classification of Functioning, Disability and Health drawn a line of paradigmatic shift in the interpretation patterns of the idea of disability. In fact, here, disability was defined as "the consequence or the result of a complex relationship between the health condition of an individual and personal factors and environmental factors that represent the circumstances in which the individual lives" (WHO, 2001). This definition has revived, with firm intent, the bio-psycho-social nature (Leonardi, 2005) of the whole system, able to capture, in a complete way, the phenomenological aspect of human nature. The concept of disability is not comparable only to the medical and health defining criterion, but emerged from the interaction of that with contextual, personal and/or social factors.

These were the basic principles with which the WHO has sought to define and characterize the theoretical and conceptual ICF model:

- a) Universality (ie the universal aspect of Humanity).
- b) Environment (environmental factors that characterize the disability).
- c) Neutral language (as a particular way of understanding the language of classifications).
- d) Equality (the classification does not distinguish between physical and mental component).
- e) Biopsychosocial model (is given greater importance to the personal, social and physical environment of the disabled person).

The indissoluble relations between the corporeality and formation of individual social and learning identity, support a new holistic view of motor skills that cannot be reduced exclusively to the biological processes, but it should be considered an expression of intelligence, emotions and self-determination. In fact, the cognitive processes related to learning, in a dynamic exchange with the social behavior and communication systems, can all be considered cognitive mechanisms that are based on motor skills.

From this perspective, the didactic setting that is built during Physical Education and Sport, is an excellent evaluation framework for the identification of SEN.

The class and its structural and relational constraints, often limit or even repress the functional, relational and social demonstrations that students want or could express and communicate. The setting of Physical Education, however, has always been recognized as a disciplinary area that allows students to express their personality, build dynamics of relationships, express motor behavior (Raiola, Tafuri & Gomez Paloma, 2014); all characteristics that guide teachers to perceive, with greater validity, the objectivity of the real presence of a student with special educational needs.

The National Guidelines (2012) have just confirmed this vision of Physical Education, which "promotes selfawareness, potentials, in the constant relationship with the environment, other people, objects, [...], promotes cognitive social, cultural and emotional experiences, [...], promotes the value and respect of rules and ethical values that are the foundation of civil society, [...]. Participate in physical activities and sports is to share experiences with other people in the group also promoting the inclusion of children with various forms of diversity and enhancing the value of cooperation, [...]. Through physical activity the student is facilitated in the expression of communication and hardships of various kinds that cannot always communicate with verbal language" (MIUR, 2012) (Gomez Paloma, Rio & D'Anna, 2014). From this prospective, the Personal Factors, although not encoded in the framework of the ICF as the other areas (Activities Personal, Social Participation, etc.), were considered key elements for the construction of tools for indicators and qualifiers, because according to the latest neuroscience research (Caruana & Borghi, 2013; Damasio, 2009; Gomez Paloma, 2013), they are particularly influencing into the learning process.

### *Objective*

The purpose of this project was the construction and validation of a scientific model for the identification of SEN, through physical activity and sport in the school and the fallout that this analysis provides for the orientation of teaching.

## **METHODS**

The research involved 38 schools (about 2500 students) from four different regions in Italy. In particular, among all students, 163 fall into the following SEN subcategories:

- 70 certified by Law 104/92.
- 26 certified by Law 170/10.
- 15 diagnosed with other disorders, but not certified.
- 52 born in foreign countries (other ethnicity).

The choice of institutes was made according to a randomization process such that the classes and their students were different in their observable and unobservable environmental characteristics (Schlotter, 2011). Among the identified institutes, were then selected those that have voluntarily adopted to the research project.

In order to experiment in schools the application of a model that meets the principles of the ICF and helps teachers to apply scientific criteria for the identification of SEN, for the development and promotion of effective inclusive teaching strategies, the research team found useful to promote an education training for teachers of the schools that participated in the project (Gomez Paloma, Agrillo & D'Anna, 2013). The educational program has provided for 12 hours of scientific theory, during which experts have addressed issues on ICF (lanes, 2006), Embodied Cognitive Science (Borghi, 2013; Gomez Paloma, 2013), SEN (lanes, 2013) and educational research. The scientific basis on which is built the hypotheses of the model

needed to be metabolized to prevent that teachers can be reduced to an executors of a protocol, becoming active participants of an action research that sees them part of the process and inviting them to experiment new teaching tools.

The construction of tools for indicators and qualifiers, of some areas of ICF was generated by the fact that teachers at school must activate teaching/learning process to achieve goals and targets.

Their construction was done according to four specific purposes:

- 1) Detect, thanks to the teaching of Physical Education and Sports, behaviors, situations, attitudes and postures of the students to observe systematically some indicators related to Personal Factors.
- 2) Detect, thanks to the ordinary didactic, skills and abilities of the students coded according to the ICF and belonging to Chapter 1 - Basic Learning and Application of Knowledge.
- 3) Recognize training and professional propensities of teachers and directors about SEN theme.
- 4) Detect, thanks to parents, elements of the students belonging to Environmental Factors.

In particular, Personal Factors were divided into 24 indicators and three subsections:

- A) Self Area.
- B) Emotivity and Control.
- C) Motivation and Problem Behaviors.

In order to measure the frequency of the behavior, it is used an assessment scale ranged from 0 to 4:

- 0 when the behavior never occurs.
- 1 when the behavior rarely occurs (from 1% to 25% of the time).
- 2 when the behavior sometimes occurs (from 26% to 50% of the time).
- 3 when the behavior often occurs (from 51% to 75% of the time).
- 4 when the behavior always occurs (from 76% to 100% of the time).

The indicators to detect Personal Skills and Competences in the framework of the Activities and Participation by ICF had different numbers according to the degree of school in which they are applied:

- 24 indicators for Kindergarten.
- 38 indicators for Primary School.
- 27 indicators for the Secondary Level School.

For these indicators, it is used a valuation range from 0 to 4 (according with the qualifiers of the ICF model), where:

- 0 for a judgment that goes from sufficient to good (corresponding to ratings from 0 to 6).
- 1 for a middling judgment (corresponding to 5 and 5.5).
- 2 for an inadequate judgment (corresponding to 4 and 4.5).
- 3 in the case of very poor judgment (corresponding to 3 and 3.5).
- 4 in the case of judgment gravely inadequate (corresponding from 0 to 2.5).

For data collection it has been activated an online platform ([www.edufibes.it](http://www.edufibes.it)) which allowed to the teachers to download the necessary tools for the assessment and enter the results at the end of the process.

For data processing, viewed the large number of collected variables, first it was made a statistical analysis of the correlations (Schlotter, 2011) to explore the relationship between the Personal Factors and Activities and Social Participation, considering the stratification by region, institutes and classes, in order to verify possible differences in the results. In a second step of the analysis it was considered the gender of the participants, in order to highlight the differences between male and female students. Finally, in the last phase, it were considered the four SEN subcategories (students certified by Law 104/92; students certified by Law 170/10; students diagnosed with other disorders, but not certified; students born in foreign countries (other ethnicity), in order to verify if the correlations had variations in the case where only the students belonging to the four SEN categories would have been counted.

All the results of the study have been computerized and inserted into an Excel worksheet.

## RESULTS AND DISCUSSION

First, there was a direct correspondence between the certificates students and the higher qualifiers, in fact, in SEN subcategories, many of the indicators related to Personal Factors had in percentage the 3 and 4 qualifiers at least three or four times greater than the values of the entire sample (Tab.1).

Tab.1. Averages and percentages of Personal Factors for all students, SEN categories, only disabled in subsection A

All students	0	1	2	3	4
<u>Subsection A</u> - Self area (A1 – A6)	2132 (86,73%)	187 (7.62%)	69 (2.80%)	33 (1.35%)	37 (1.50%)
<u>Subsection A</u> - Self area (A7 – A9)	1028 (41.87%)	356 (14.48%)	307 (12.48%)	255 (10.40%)	511 (20.81%)
4 SEN categories	0	1	2	3	4
<u>Subsection A</u> - Self area (A1 – A6)	119 (77,59%)	14 (9.19%)	7 (4.54%)	5 (3.57%)	8 (5.08%)
<u>Subsection A</u> - Self area (A7 – A9)	63 (40.90%)	15 (9.95%)	13 (8.65%)	20 (12.98%)	42 (27.48%)
Only disabled (L. 104/92)	0	1	2	3	4
<u>Subsection A</u> - Self area (A1 – A6)	43 (67.96%)	6 (9.63%)	4 (6.51%)	4 (7.03%)	6 (8.85%)
<u>Subsection A</u> - Self area (A7 – A9)	18 (28.64%)	6 (9.37%)	7 (10.41%)	8 (12.5%)	25 (39.06%)

From each assessment of Personal Factors and Activities and Participation (Tab.2), it has registered that positive behaviors and attitudes were less present than one might imagine, and this confirmed a poor ability of school and teachers in the management of personal, emotional, and relational dimensions of students (Altavilla, Tafuri & Raiola, 2014).

Table 2. Correlations between the Average of Learning Basic and Application of knowledge/Average of the Personal Factors sections

	A1-A6	A7-A9	B1-B4	B5-B6	C1-C5	C6-C8	Basic learning	Application of Knowledge
A1-A6	1							
A7-A9	0.265***	1						
B1-B4	0.728***	0.169***	1					
B5-B6	0.216***	0.858***	0.206***	1				
C1-C5	0.575***	0.071***	0.705***	0.120***	1			
C6-C8	0.202***	0.830***	0.199***	0.888***	0.114***	1		
Basic learning	0.221***	0.165***	0.289***	0.162***	0.138***	0.182***	1	
Application of Knowledge	0.226***	0.164***	0.294***	0.149***	0.127***	0.181***	0.859***	1

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Regarding the indicators relating to the Activities and Participation (Tab.2), it was highlighted a high prevalence of a positive judgment. One of the possible causes of this clear prevalence is linked to the fact that the qualifier 0 includes a judgment that goes from sufficient to good and so it was easy that a large number of students could be in this range. However, it is also true that, if the research project has aimed to build a model for SEN identification, it is right that teachers have used this valuation range, because a student who is judged by a sufficient vote, should not included in a risk category (at least for the Chapter "Basic Learning and Application of Knowledge").

Finally, from the statistical analysis (Tab.2), it was demonstrated that there is a high significance between the two examined sections (Personal Factors and Activities and Participation), in particular the results showed a positive correlation that varied from 0.5 to 0.85, without particular distinction between male and female, and type and level of education. The same happened to the results of the correlations among SEN children, noting a correlation index even higher and varying between 0.65 and 0.95, unlike the correlations among uncertified children that showed a lower index, which started from 0.4 to get barely 0.6.

## CONCLUSIONS

In conclusion, the results confirmed the validation of the scientific model for the identification of SEN through physical activity and sport, responding to the inclusive needs of the school and allowing to highlight problems. The significant and positive correlation between indicators encoded by ICF and indicators that detect situations, attitudes, behaviors and postures specially created for the identification of difficulties and special educational needs, confirmed the reliability of the tool and gave teachers the opportunity to apply strict criteria to identify pedagogically students and act in an inclusive way.

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