

SPECIAL EDUCATIONAL NEEDS AND SPORT. PSYCHOLOGICAL ASPECTS OF THE INTERACTION BETWEEN COGNITIVE, AFFECTIVE-EMOTIONAL AND MOTOR AREA

Fedele Termini¹, Caterina Scieurca²

1. Euro-Mediterranean Institute of Science and Technology, Department of Human and Social Science, Tourism, Environment and Cultural Heritage

2. Psychologist

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ABSTRACT

The practice of sport, intended not just as a physical activity performed exclusively for athletic competition, represents a key element for growth on an emotional and social level. Practicing sports can help to enhance one's self- and body awareness through multidimensional dynamic and ludic activity. In this context, sport becomes an educational and training tool, and is often a forerunner of social change. Sports practice combining physical activity with recreational activity, can, in fact, promote health and longevity, as well as physical and psychological wellbeing. As highlighted by the European Union, sport is also a source of social inclusion, and an excellent tool for the integration of minorities and groups at risk of social exclusion.

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1. Introduction

Literature provides several theoretical models that affirm the importance of physical movement for the cognitive, affective-emotional and relational development of an individual [1]. Young people express themselves through their body and movement, reflecting their relationships with adults and peers, and allowing them to portray their lives and past, and the ups and downs that characterize their evolutionary path to the outside world. The concept of psychomotricity has been developed from psychological and psychoanalytical studies, and, in particular, those on the psychic life of children. For example, the studies of H. Wallon [2], a French psychologist and educator, and J. Piaget [3], a Swiss psychologist, focused on tone (or muscle tension), posture, mimicry and motility; these authors believed that movement is the basis for language and intelligence. Wallon wrote about a "tonic dialogue" to describe the particular form of communication taking place in the mother-child dyad, in which the "sufficiently good" mother responds to the demands of the newborn, mainly expressed through its body, with her own tone, transmitting messages of acceptance and caring through her own body.

Melanie Klein also stated that the child forms its own mental representation from the bodily sensations that accompany the introjection of "good" or "bad" objects, which may be people, body parts or functions. Subsequently, the hypotheses described above have provided a scientific dimension to the studies on brain activity, according to which there is a close connection between cognitive and emotional processes, and which have sought to identify the neural circuits organizing these processes [4].

In the 1970's neuroscience scene, a new discipline was proposed and subsequently expanded by a group of scientists (anatomists, physiologists, biochemists, mathematicians and microscopists) who decided to unite their knowledge to empirically demonstrate that physical experiences influence cognitive development and that intelligence does not exist in the brain only, but also resides in all body cells. Ultimately, they wanted to show that the notion of the mind and body being independent of each other should not be considered valid.

During the same period, the studies on psychomotricity by Bernard Aucouturier and Andre Lapierre [5] critiqued the classical conception of the body as a frame made of bones and muscles, only concerned with correct function and optimal physical performance.

* Corresponding author: Fedele Termini, fedeletermini@iemest.eu

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This rigid and merely biomedical interpretation, indifferent to the cognitive and emotional dimension of the individual, was at the base of the traditional physical and sport education, imparted from a mechanistic perspective that treated the body as an object on which to act mechanically, limiting any interventions to corrective and orthopedic gymnastics only. Aucouturier and Lapierre highlighted the inaccuracy of such view and the impossibility of separating the physical and mental aspects of human actions. Both of these aspects were to be considered as two sides of the individual, and thus the action on one would have inevitable repercussions on the other. These authors founded some of the most important schools of psychomotricity in France that successively spread to Italy.

In addition to the above, Jean Le Boulch's [6] notions of psychomotricity, based on the "active pedagogy" concept and an unified vision of the person, considering the group as a means to promote development and as a fundamental tool for physical education and educational sport, also became popular in our country.

According to the Boulch school of thought, educators, teachers, psychologists and instructors should put the individuals practicing sports in problem-situations, in groups or individually, allowing them to confront their own limits through controlled psychomotor activity, thereby improving the functional abilities of the individual and overcoming the proposed difficulties. Such procedure would positively influence the formation or the redefinition of the concept of self-esteem, promoting new forms of attribution of personal value. This type of educational psychomotricity elevates physical activity from just a mechanical action to a free expression of movement, devoid of the competitive aspects of sports in general. Thus sport becomes a setting in which individuals learn both conscious and constructive use of the body, along with interaction and collaboration with others [7].

2. The underlying learning processes in psychomotricity and sport

Psychomotor activity, at the base of all recreational sports activities and promotion of psychological well-being, is a point of convergence for "operational models and theoretical issues", allowing it to become more than just a tool for functional recovery, thus making it a relevant aspect of the field of child psychotherapy [8].

According to these notions, the body and movement become facilitators of the developmental processes and growth; consequently, classrooms, gyms, and laboratories are transformed into learning environments where the cognitive and behavioral spheres can be developed.

Physical education, in the broadest sense, should be regarded as an engine capable of conveying energy and the potential of the individual and group, bringing forth the metacognitive sense of a sports experience beyond the conditional and habilitation processes. Indeed, the body and movement can be used as "tools for teaching and assessment", capable of encouraging the acquisition of transversal skills, and sports activity can become the setting in which to enhance this type of learning. Motor experience at school, during play and sports, can become a learning ground of particular interest - a space within the school environment in which to detect some individual characteristics that may remain

camouflaged in the classroom, and that physical activity is able to reveal almost naturally [9].

The importance and value of physical activity in education is enshrined in the UNESCO International Charter (1976), which establishes the right to physical education and sports by all - children, youth, seniors and disabled individuals - in order to ensure the integral development of the individual (cognitive, affective-emotional, social and motor) through physical education and sports programs suited to the personal needs of each subject.

The Adapted Physical Activity (APA) approach integrates information and knowledge from a systemic and interdisciplinary perspective, uniting different scientific fields, such as sports medicine, rehabilitation sciences, physical and special education, and psychology, to establish a common field of knowledge that recognizes physical activity, leisure, dance, sports, fitness and rehabilitation as suitable activities for individuals with "obstacles" and difficulties.

The term adaptation is used in the sense to change, or to make appropriate adjustments to the proposed activity according to the real capacity or potential of the subject.

The APA approach involves the compilation of a detailed list of physical activities, and sports that can be practiced by individuals with limited abilities due to by physical, psychological and mental impairments, or deterioration of some major functions. Individual differences include any special needs, as defined by various government agencies.

Based on these guidelines, the APA approach is being developed as a sub discipline of physical education, aimed at the organization of activities that allow users with differing abilities to enjoy sports and movement while ensuring personal safety [10], satisfaction and success [11].

Today, it is preferable to refer to physical education as Sports and Sports Science to highlight the scientific knowledge required to appropriately promote the development of knowledge, skills and competencies, focusing on the individual student's learning process.

3. Special education needs and social inclusion

In the globalized society of the third millennium, all individuals are considered to have educational needs during childhood and throughout their lifespan, including acquiring knowledge and skills to the best of their abilities, developing a sense of belonging, identity, dignity, appreciation and acceptance. People who have difficulties, obstacles and delays affecting learning, development and integration are increasingly visible and present within the society, at a macroscopic level, and school, at a more microscopic level. Their access to a good quality of life [12], whether globally or only within certain domains (cognitive, affective-emotional, relational, motor), is a particularly pressing concern. Different individuals may have different degrees of impairment: mild, moderate or severe; and such impairments may be characterized by stability or transience. The Special Educational Needs (SEN) concept, increasingly central to social and scientific interest, arises from these considerations, and covers a considerable part of the population: disabled and elderly individuals, very young children, people with debilitating or degenerative diseases, or post-traumatic manifestations, and individuals in difficult situations and/or at socio-economic disadvantage.

The SEN (or Bisogni Educativi Speciali - BES - in Italian) classification is not a clinical or medical definition. In fact, it cannot be found in common disease classification systems, such as the ICD 10 or DSM V.

The SEN approach is used for institutional purposes to define situations that entitle students to specific forms of individualization and personalization of individual educational activities. The recent extension of these rights to the personalization of educational path as a whole, not previously contemplated by the Italian legislation (namely, the relevant legislative decrees 104 and 170), is a positive step towards more equitable and inclusive educational policies. This allows many more students in various situations to be identified and protected under the SEN policy. The educational needs of SEN students should not automatically be considered different from regular educational needs; they only need modifications when the bio psychosocial functioning of the individual is prevented or hindered, and it has become difficult to find an adequate response to their needs using standard intervention techniques. The bio-psychosocial functions of an individual can be evaluated through the complex and multidimensional ICF system (International Classification of Functioning, Disability and Health) [13], where interactions between physical aspects, social participation, environmental framework and personal context play a crucial role. A "dysfunction" of the educational process is determined when the individual suffers damage, becomes obstructed or stigmatized through loss of opportunity or freedom of development.

The term "special" refers to additional resources, knowledge and skills needed to ensure equal opportunities for development, choice, success and quality of life for such individuals [14].

There are three types of SEN resources:

- 1) Human, both in terms of professional figures that can ensure the achievement of the goals listed above (curricular and special education teachers, other educators, psychologists, communication and autonomy aides etc.) and an appropriate teacher-student ratio.
- 2) Material (tools, aids, equipment, learning spaces etc.).
- 3) Financial (forms of funding for individuals with special needs or for their educational environments, or other forms of assistance to cover additional costs for staff and resources)

These interventions are also included in the European strategy to combat all forms of exclusion and social marginalization through new inclusion policies.

In this context, the term "integration" is intended as an open process of change and mutual adaptation, characterized by the recognition and implementation of an individual's identity and his/her inherent knowledge. To achieve full integration in the society and at school, it is essential to consider all specialties and differences of the individual as resources and forms of enrichment for all those involved in the educational process: family, school, social and health workers, and peer group [15].

Irrespective of the model used in the different European countries, inclusion is usually accomplished through three stages of the learning process in all disciplines, and motor activity in particular. The three stages are: adaptation, identification, and point of contact. This model can and should also be applied outside the school context, purely to disseminate the message of equal integration within all structures and locations where physical activities and sports are practiced.

The European Sport for All Charter states that adaptation must be of educational-methodological, technical, and structural type.

The process of adaptation is characterized by flexibility, simplification and mediation.

The first aspect relates to didactic approach and practice methodologies; while the second addresses the rules and regulations of each sport; and the third refers to specific motor activities created for specific disabilities. Modifications may be applied at three different levels: minimal, such as guides, facilitated routes, colored signals to delimit the field of play, etc.; moderate, such as the introduction of auxiliary equipment, or specific rules and roles; and significant, such as asking a class mate to assist the disabled student. These adaptations should be carried out in a global manner in relation to: a) space, intended as emotional and physical space, accessible environment, free from all forms of architectural barriers and equipped with equipment that facilitate the movements of the disabled; b) time, which refers to duration, frequency and intervals of the activity; c) intensity and difficulties, taking into account the motivational level and degree of cognitive attention necessary to perform a specific physical activity; d) group activities, or the opportunity to work individually, in pairs, and in small or large groups; e) rules, also within the organizational sphere.

Identification takes place every time interventions are designed based on the needs of a single individual, taking into account the limitations that determine their specific difficulties, and identifying the potential that could be exploited. Diversity thus becomes a resource, a possibility to reduce disadvantage, not denying its existence, but highlighting the strengths and enhancing the skills and capabilities of the individual. The identification interventions require the involvement of various professionals (psychologists, curricular and special education teachers, other educators, instructors etc.), and thus usually entail a transition from a technical formality to informal practices of varying durations.

Point of contact, finally, is intended as the moment when, during the integrated teaching-learning process, an activity is planned for the individual, class and or team, through the selection of objectives that reflect those of the class or team, taking into account the potential of the individual.

In practice, the adaptation, identification and point of contact interventions must be considered as an integral approach carried out at different levels.

4. Minimizing the impact of disabilities and sport as a therapeutic tool

Minimizing the Impact of Disability is currently one of the current key aspects of interest in the field of adapted physical activity. This concept entails cultivating the disabled or disadvantaged individual's perception of feeling loved and accepted despite their condition, through minimizing the effects of any potential difficulties. Teachers, trainers, educators, psychologists and all the people with a significant relationship with the individual with special needs should direct their attention and actions towards this goal. These experiences can, in fact, affect the individual's personality in a variety of ways, potentially promoting or compromising the functional development of their identity. Negative experiences, in

particular, can affect the performance of an athlete; moreover, a child or an adolescent who practices one or more recreational sports disciplines could develop, as a result of his or her condition, a disturbed and unhealthy relationship with the discipline.

For these reasons, teachers, psychologists, trainers and family members should set up procedures or situations that aim to stimulate the individual in terms of their self-awareness and sense of dignity through improving their psychological status, by encouraging good self-knowledge, awareness of their real potential and limits, towards a realistic awareness of their life circumstances. Sport can be a valuable tool to combat the negative aspects of disability, such as fear, anxiety, anguish, and depression [16] that can determine frustration and closure to the outside world. In fact, in the form of recreational motor activity, promoting a sense of accomplishment and mobility, sport can enhance self-affirmation, development of a good level of self-esteem and a more positive self-image in children, in particular those with special needs. Such development takes place through the interwoven relationship with the sports group and instructor, who provide the positive feedback necessary for the acquisition of a new sense of belonging and identity that would be unlikely to develop without taking part in the sports activity.

Children and adolescents also learn how to control themselves psychologically through sports. In fact, workouts, exercise, and the efforts to improve one's performance often act as motivational stimuli and push the individual to achieve higher goals and objectives. Finally, sports activity allows individuals to learn how to manage anger or negative feelings that often derive from the state of frustration that originates from sense of defeat. Sport also allows to experience ritualized aggressiveness while waging a metaphorical "fight" with the opponent while following rules, leading them to learn to tolerate the frustration that arises from defeat. Therefore, sport can be seen as a means of psychological growth, allowing the individual to develop his or her personality through physical training. In the light of these notions, sport becomes a therapeutic setting, vessel, and a protected space in which one can connect with other people to confront one's fears [17], anxieties [18] and frustrations, as well as learn through play, set oneself new goals, discover new interests, and, ultimately, reach a better level of autonomy and psychological maturity that will be carried over to other contexts of everyday life. To this end, the relationship with the instructor or physical education teacher is fundamental; these authority figures must possess sufficient flexibility to foster developing personalities while adapting to the requirements of the specific situation and group, integrating knowledge on the rules and technical/tactical aspects of the discipline with that related to specific impairments, aids and communication, in order to form a complete view of the group and address potential difficulties and resources.

The importance of the sport psychologist is often highlighted; this figure acts as a privileged intermediary between the individual with special needs and their physical education teacher/instructor and family, in order to help them develop practical attitudes towards the subject that are neither overly concerned nor disregarding towards the difficulties he or she faces.

In particular, the sport psychologist must be able to bring to light any invisible disabilities, establishing a thorough understanding of the individual in order to intervene appropriately and overcome his/her

personal defenses in a potentially anxiety-inducing situation, thus transforming disability into opportunity and possibility.

5. The relationship between operators and the disabled

What are the materials we use for our interventions? Where should the change occur? What is empathy in light of the notion that everything depends on the quality of the student-operator relationship? Can it be observed, measured and studied?

The motor theory of empathy, according to which our ability to understand others, their perspective and their experiences, depends on our ability to resonate, in the sensorimotor level, in a way similar to theirs, assumes a particular importance in this context [19].

Interpersonal neurology emphasizes the importance of the relational matrix of perception, the empathy that creates interpersonal neurobiology. Milton Erickson conceived the active-alert approach for using hypnosis in therapy. The key aspects of this technique are "minimal cues" and "interactional synchrony" [20], which refer to the careful observation of small and apparently insignificant aspects of the patient's behavior, in order to comprehensively assess his or her condition, while the patient is focused on the therapist.

This process is based on the observation of details (minimal cues) of the communicational, perceptual, relational, and emotional behavior of the person and their interactions. These cues are subliminal messages that convey personal information and interpersonal experiences: facial expressions, breathing changes, non-verbal reactions, expression of positive or negative emotions during a conversation or hypnosis focusing on a specific memory. In fact, these sort of signals of ten allow us to remember forgotten events. Smells, tastes or images can reactivate memories related to important experiences. Rossi, a pupil of M. Erickson, reported that his teacher had developed a great capacity for observation even prior to contracting polio. In fact, being color blind, dyslexic and arrhythmic, Erickson had begun to carefully observe people in order to understand their way of life within a world that seemed different from his own. He used this capacity in his own rehabilitation process after being struck down with polio, during which, motionless in bed, he observed and focused on the individual movements of his baby sister who was learning to walk, such as resting both her hands on the ground to be able to lift herself up. Together with these observations, the positive energy of his memories finally led the scholar to regain the use of skills learned and lost.

The importance of observation is central to all forms of empathic relationships as the instrument for the transition from impairment to potentiality.

Stern, for example, speaks of "intermodal fluency", indicating that particular form of relationship-communication where a mother follows her child's movements with her own, allowing her to respond effectively to his/her needs through her sensory channels that are harmonized with those of the child.

A similar theory is that of "embodied simulation" [21], a crucial mechanism in inter-subjectivity. It is the innate ability of the individual to

internalize, incorporate, assimilate and mimic the state of another person. At the basis of this ability are the so-called "mirror neurons", which allow the caregiver to promote a given behavior by interacting with the subject in a predictable and coherent manner.

Even teachers, parents and educators can use these notions as an important aid to relate to the individual with special needs. Understanding and reading minimal cues, catching a glimpse of a changing facial expression, the rhythm of breath, or a glance of the subject's eyes can help them to perceive his or her current emotional state, in order to determine whether he/she is well or experiencing some form of discomfort.

An approach based on minimal cues, used consciously, can be used as the foundation for an effective and positive relationship with children in any educational context. Another technique that uses these signals to promote positive changes in people's lives is the use of "therapeutic metaphors" [22].

A metaphor can be built from the memories of the narrator, using his or her own memories of events, situations or people with a positive value as a metaphorical expression of one's resources. Events involving other people who have managed to overcome obstacles or difficulties can also be used to create a metaphor. Mills and Crowley suggest to observe, during the narration of such metaphor, the minimal cues show by the subject representing his/her response and feedback to the metaphor, therefore allowing the narrator to act according to the type of emotional reaction exposed by these signals.

All this is incorporated as part of an empathic relationship in which the narrator is in tune with the subject, accompanying him or her during the course of the intervention by using similar language (fast, tense, with long pauses etc.), reflecting the subject's non-verbal actions (posture, body movements, glance etc.), listening to and interacting with the (subconscious) emotional experience that the subject is going through at the time. This will allow the subject to trust and rely on a figure who understands, thinks and feels like him/her, thus becoming more receptive to the metaphor created and modified by teachers, other educators, psychologists and/or parents. In fact, using a metaphoric approach with positive memories and minimum cues, as suggested by M. Erickson, can promote significant behavioral and emotional changes in the subjects [23]. Tales are particularly suitable starting point for metaphors used for therapeutic or educational applications aimed at children.

In both cases, the narrator (parent, teacher, educator, trainer or psychotherapist) must first identify the psychological difficulties the child is facing, and then select an appropriate tale for the subject's stage of development and emotional maturity. Moreover, the profound significance that they intend to transmit to the child must be perfectly clear and easy to understand [24]. As the characters in the tale express their internal impulses in a controlled manner, the subjects learn, through a specific character or situation, to voice their positive or negative desires, receive fulfillment from others, form appropriate attachments with others, and how and with whom to identify themselves, thus discovering the most suitable strategies to overcome their difficulties in a shared phenomenological condition. The strength of fairy tales stems from these very possibilities of identification that allow the subjects to experience the outcomes of potential changes in a controlled setting.

For the narratives to be effective, one must take into account the following details:

- the protagonist must be faced with difficulties or a metaphorical conflict;
- positive and negative subconscious processes must be represented under the form of personification, such as heroes, rescuers, obstacles, evil characters, who embody the resources, capabilities and limitations in the subjects' lives;
- the narrative must include "parallel learning" situations in which the protagonist is successful;
- it is important to describe a situation of "metaphorical crisis" as a prelude to the success, highlighting the selection of appropriate strategies to resolve the crisis;
- the ending should include a proclamation of the worth of the protagonist. The "Ugly Duckling" is the perfect formula for a therapeutic metaphor. The topics covered by this tale are: 1) feeling unwanted and different; 2) learning; 3) overcoming adversity; 4) reaching highest potential.
- Metaphorical Conflict: the birth of an odd-looking duckling;
- The process and potential of the subconscious: the mother defends him and lists his positive qualities. The ugly duckling sees swans for the first time;
- Parallel learning situations: he learns to swim, to take care of himself, to fly;
- Metaphorical Crisis: the attack in the swamp, the cold weather at the pond;
- New identification: the duckling looks at his reflected image in the water and feels happy for having turned into a beautiful swan;
- Celebration: the old swans bow in front of him.

The metaphor technique has the most varied applications and can also be used in sports where the instructor, sport psychologist, or parent can be recreate, taking into account all the aspects analyzed so far, the story of an athlete with a disability or other obstacles. Such stories can be used to activate the ongoing process of identification and parallel learning opportunities to guide people with special needs towards positive change. The purpose of such interventions is to abolish the disparity between disabled people and the general population, encouraging their participation to athletic activities, enabling individuals with disabilities to overcome their limitations consisting of internal barriers or unsuccessful encounters/confrontations with others, within a setting characterized by rules and governed and codified structures.

Based on these notions, it is possible to establish a positive and beneficial therapeutic-rehabilitative relationship with individuals affected by mental and/or physical disabilities; sport is certainly the ideal way to start such relationships and achieve meaningful improvements to the individual's general condition through the acquisition of new physical and mental abilities. Initially, the operator and student will mainly interact at a physical level. Practicing sports or taking part in physical activities together, living through eventual difficulties and silences, can be an important way to build the dialogue that allows the participants to subsequently switch from a purely corporeal communication to the use of emotive language. The relationship between the operator and the child or adolescent with special needs should eventually progress to a gradual

disengagement from the physical limitations towards the potential and ability to improve and make the most of the given situation.

5. Conclusions

Nelson Mandela once stated: "Sport has the power to change the world. It has the power to evoke emotions. It has the power to join people together like few other things in the world. It speaks to young people in a language they understand. Sport can create hope where once there was only despair. It is more powerful than any government in breaking racial barriers. The sport laughs in the face to any kind of discrimination" [25].

Sport is a metaphorical space and time in which young people can experience the sense of belonging to a group, benefiting from its advantages and strengths in generating change at a cognitive and affective level.

As a tangible metaphor to experience and live through, sport can enhance therapeutic changes and facilitate the overcoming of disabilities, just like narrative metaphors do.

Sport transforms and overthrows the rules and barriers of prejudice, because it promotes accordance and unity within the team or group. Sport can also enable a fast change in the perception of differences.

References

1. Pessoa L. On the relationship between emotion and cognition. *Nature Reviews Neuroscience* 2008, 9:148-158
2. Wallon H: *Les origines du caractère chez l'enfant*, Boivin, Paris, 1934.
3. Piaget J: *L'épistémologie génétique*, PUF, Paris, 1970.
4. Duncan S, Barrett LF. Affect is a form of cognition: a neurobiological analysis. *Cognition and Emotion* 2007, 21:1184-1211.
5. Lapierre A, Aucouturier B: *La simbologia del movimento*, Edipsicologiche, Cremona, 1978.
6. Le Boulch J: *Lo sviluppo psicomotorio dalla nascita a 6 anni*, Armando Editore, Roma, 2008.
7. Aiello CR, Canalella A, Altieri D. Sport as a strategy for preventing physical inactivity: walking football. *EuroMediterranean Biomedical Journal* 2016, 11(24): 176-180.
8. Cartacci F: *Movimento e gioco al nido. Proposte di interazioni sensibili con bambini da 0 a 3 anni*, Erickson, Trento, 2013.
9. Duda JL, Nicholls JG. Dimensions of achievement motivation in schoolwork and sport. *Journal of Educational Psychology* 1992, 84(3):290-299.
10. Amodio E, Costantino C, Ascitto R, Dino C, Bianco A, Maringhini G, Mammina C, Calamusa G. Knowledge, risk perception and behaviours in swimming pool users of Palermo city, Sicily. *Eur J Sport Sci*. 2014;14 Suppl 1:S51-6.
11. Winnick J P: *Adapted Physical Education and Sport*, Human Kinetics, Champaign, IL, 2005.
12. Ianes D: *Bisogni educativi speciali e inclusione*, Erickson, Trento, 2005.
13. Buono S, Zagaria T. ICF – Classificazione Internazionale del Funzionamento, della Disabilità e della Salute. *Ciclo Evolutivo e Disabilità* 2003, 6(1).
14. Ianes D, Macchia V: *La didattica per i Bisogni Educativi Speciali. Strategie e buone prassi di sostegno inclusivo*, Erickson, Trento, 2008.
15. Allender S, Cowburn G, Foster C. Understanding participation in sport and physical activity among children and adults: a review of qualitative studies. *Health Education Research* 2006, 21(6):826-835.
16. Rethorst CD, Wipfli BM, Landers DM. The antidepressive effects of exercise: a meta-analysis of randomized trials. *Sports Med* 2009, 39:491.
17. Olsson A, Phelps EA. Social learning of fear. *Nature Neuroscience* 2007, 10:1095-1102.
18. Bishop SJ. Neurocognitive mechanisms of anxiety: an integrative account. *Trends Cognitive Science* 2007, 11:307-316.
19. Balugani R: *La psicoterapia ericksoniana e la neurobiologia delle relazioni*, Ipnosi, Franco Angeli, Milano, 2012.
20. Banyai E I, Hilgard E R. A comparison of active-alert hypnotic induction with traditional relaxation induction. *Journal of Abnormal Psychology* 1976, 85:218-224.
21. Gallese V, Migone P, Eagle M N. La simulazione incarnata: i neuroni specchio, le basi neurofisiologiche dell'intersoggettività ed alcune implicazioni per la psicoanalisi. *Psicoterapia e Scienze Umane* 2006, XL, 3:358,543-544.
22. Mills J C, Crowley R J: *Metafore terapeutiche per i bambini*, Astrolabio Editore, Roma, 1988.
23. Giusti E, Ciotta A: *Metafore nelle relazioni d'aiuto*, Sovera Editore, Roma, 2005.
24. Bettelheim B: *Il mondo incantato: uso, importanza e significati psicoanalitici delle fiabe*, Feltrinelli, Milano, 1986.
25. Nelson Mandela: *Laureus World Sports Awards*, 2000, Monaco.