

Original Article

Study regarding psychomotor aspects approached by Romanian authors

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Abstract

Physical education is a component of general education which turns the child into an efficient and active adult for the society. Specialist from educational domains or other connected domains have a permanent concern to improve the educational process and to find proper and efficient methods and ways keeping in mind certain age levels. The aim of this study is to reveal the multiple psychomotor perspectives in physical education reflected in specialized literature. We accessed 6 data bases representative for Sport Science and Physical Education. We identified multiple bibliographical sources. The observation we made at the end of the research showed that psychomotricity is a subject approached in Romanian literature by many specialist from various domains like: medical domain, pedagogy, psychology, physiology, psychiatry. We identified theoretical aspects like definitions, classifications, concepts, stages of motor development. There are studies which underline the valences of the psychomotor activities achieved with subjects of different ages. Psychomotor aspects can be less found in academic physical education. The studies highlight the influence that motor activities have on psychic and cognitive skills.

Key words: psychomotricity, physical education, students, school, literature.

Introduction

Studies about movement and the relationship between body and mind are a concern topic in various domains, domains which impose a global vision over the human being. In order to define the „unitary man”, the tendencies imposed the appearance of a new and complex area which can treat /discuss the progress and motor acquisitions of the human being coordinated by mental activity and fulfilled by creative, affective and social development. This is how psychomotricity appeared, as a complex area which responds to human needs according to education, re-education, therapy, an area discerned as an entire system conditioned by the interaction between children and adults, between education and growing up, between movement and mental functions.

Psychomotricity emphasizes children's development according to the others, common vision found during the evolution of psychomotricity concept and sustained by Viscione et al. (2017) who considered that the psychomotor education will always be an important component to achieve a certain progressive autonomy of the children related to the environment.

The debated concept is in a permanent evolution, continuously researched, and gradually approached in academic physical education. Psychomotor education is really important because from a biological and mental perspective it contributes to an integral development of the children and from a motor perspective, it accelerates the main functions and it improves social-affective component (Gordon, 1991; Oliveira 2001; Rabelo & Aquino, 2014).

Psychomotricity generally attends the progress and motor acquisitions of the human being coordinated by mental activity and fulfilled by creative, affective and social development according to themselves and the social environment.

Psychomotricity has been explained and debated from theoretical and practical points of view, as a technique which aims to form and consolidate the temper , personality and assuring a proper social integration. (Shingjergji, 2014).

Psychomotor area is vast, if we start from the idea that every movement involves motivation, mental support and feelings. So, the benefits of a global development of the children are visible, taking also into consideration the affective, cognitive and social dimensions.

The specialists established that psychomotricity responds to human needs according to education, reeducation, therapy, an area discerned as an entire system conditioned by the interaction between children and adults, between education and growing up, between movement and mental functions (Wallon, 1975; Piaget & Barber, 2005; Sas et al., 2017).

Children have the tendency to compare themselves to the others, thus psychomotricity reveals a real image of the level of development of the children, of their possibilities and predispositions, so they can be aware of their own limits.

Psychomotricity has benefits for the children, consolidating their relationship with themselves (regarding postural elements and coordination, all conditioned by reflexes related to spatial, rhythmic and energetic elements), with the others (through tactile sense) and with the environment, through discovery (manipulating objects) (Borges, & Rubio, 2013).

Psychomotricity fills an important place in childhood (infant) education. The fact that there is interrelation between motor, intellectual and affective development mostly during childhood has already been proven. Ever since birth, the entire infant development is conditioned by movement without them being able to control the body movements. The majority of the movements are reflex and involuntary acts, emitted as response to external stimulus. The nervous system, fundamental for motricity, is partly developed, being to a certain level that can't afford them to coordinate and control a better posture and body segments (Fernandes et al., 2018).

As a concept approached in specialty literature specific to sport psychology, psychomotricity requires the understanding of human being as a unity between physic, motor and spiritual.

Psychomotricity:

„Emphasizes the significant conscious part, placing on the first plan the perception and the unity between perception and movement” (Epuran, 2011).

„Psychomotric education represents the starting point of the learning process of the child” (Garcia, 2007).

„It's an educational technique which uses body movement to accomplish educational purposes and to develop the psychological side of the children since the first years of life” (Esparza, 2014).

„It considers movement, expression, communication and relationship surrounding the human being with the others, denoting an important role in a harmonious development of the personality, considering that the motor side of the children is not developing, psychomotricity affording the children to integrate their thoughts, feelings and social skills (Esparza, 2014).

„It's an integrated educational action, founded in children education as language and natural and spontaneous movements, in a conscious and purposeful way” (Mendoza, 2007).

Other authors describe psychomotricity as „stimulant for the connection that the child established with other persons or/and with objects, through their actions” (Cro et. al, 2011).

The psychomotor guidance of each person evolves according to genetic abilities, to the level of mental and physical development and to the educational influences that occurred during childhood. As complex function which determines the adjustment of human behavior, it includes the participation of different processes and mental functions which assure both informative perception and the proper transmission of the responses” (Merida-Serrano et. al, 2018).

A series of researchers such as Rossi (2012) and Ahmad & Silva (2013) consider psychomotricity as an indispensable element existing in all motor individual and collective activities of the child, through which the child becomes aware of his own body and it helps in a global affective, cognitive, motor development, assuring the ground for learning process. The mental aspect covers motor and sensorial components of what the child needs to survive and to adapt. The main child's characteristic in the first years of primary school is the need to test the skills. They become stronger, more nimbly and they have a superior control of their own body (Lussac, 2008). International literature offers multiple educational perspectives of the psychomotor components. These ones can contribute significantly in shaping the future adult since childhood.

Methods

The study consisted in identifying sources from specialty literature concerning the usage of psychomotor aspects in Physical Education from Romania. Bibliographical sources have been accessed from connected domains which offer theoretical information regarding psychomotricity. Six international data bases were accessed, including 5 recommended by The Education Ministry as being relevant for Sport Science and Physical Education domain in Romania. (Web of Science, Science Direct, SpringerLink, DOAJ and Scopus). The sixth data base was Academic Google, which afforded bibliographical sources in Romanian and other languages. Inclusion criterion of the selected references in our research include sources from general education domain, sport and physical education, medical sciences, psychological sciences, articles, books or PHD thesis. To identify these references we used the following terms in our search boxes: „psychomotricity in education”, „psychomotricity in Physical Education”, „psychomotor tests”, „psychomotricity in school”, „psychomotricity in Romania”, „psychomotor notions in school”, „infant psychomotricity”. There has been no limit in searching according to publishing years.

Findings and discussions

After accessing the data bases, we ascertained that the specialty literature is vast, oriented according to the purpose and the research of the authors. We identified authors who tried to present theoretical aspects, who

classified and presented theoretical aspects in order to explain psychomotricity. Generally, this type of author comes from border scientific domains, connected with sport and physical education science. The common aspects were theorized, fact that made their studies suitable to be applied in sport and physical education domain. The educational, psychological, physiological and biological aspects or other functional variations were viewed as common and integration aspects in formative processes. The other category of authors is represented by those who experimentally studied different aspects of psychomotricity practically applied. During the researches, they tracked how the psychomotor components get shape, their appliance in learning programs for various age levels, the determination of the level of manifestation of the components, the usage of equipment and accessories in practicing physical exercises which influence psychomotricity, the appliance of different tests for the components of psychomotricity or the creation of new evaluation patterns for these components. As well, experimental studies were applied in school, in universities, in different sport clubs and in educational activities with special characteristics. We will try to put forward the aspects that specialty literature revealed to us in order to ascertain what is the level of approach of the psychomotricity by the Romanian authors.

Theoretical approach

Theoretically speaking, Epuran (2013) considers psychomotricity as interconnection between motor functions and cerebral activity; reported to space, time and body it can form an essential series of qualities for the child in order to know and adapt.

Psychomotricity developed through a tridimensional perspective: education, reeducation and therapeutic perspective. Numerous researchers consider that psychomotricity aims the entire child personality, mixing motor and mental elements which can determine the regulation of human behavior, including its participation to different movement processes which can afford the development of the quality of a healthy adult life (Mitrache & Tudos, 2004; Matei & Nica, 2018). The appliance of kinetoprophylaxy can bring an additional support in educational process as a main mean in integration school process and prevention of potential difficulties which can appear (Popa & Dobrescu, 2017)

Psychomotricity arises both as ability and as a complex function of adjusting the behavior. Inside the motor-mental relationship, the value of motor gesture can be decrypted only by the subject's intention, intention subordinated to the external conditions which determine the motor gesture to adapt. Psychomotricity is a primary function which fusions the mental phenomenon inside its structure, engendered by body movements and expressed by the different shades of the voluntary movement. Through psychomotor education body scheme is developed (reflexive aspect), also the inner accomplishment towards the world (extensive aspect) (Horghidan, 2000; Neagu, 2010)

Studies about motor behavior are really important because motor side dominates all body activities. Motor reactions are responses elaborated by certain stimulus. It is instinctive that the entire effect of the educational process in some extent to be relevant to the personality structure in which psychomotor skills take an important place. The significance of the psychomotor education is given by the presence of it as specific objectives in physical education (Grosu & Pascan, 2005; Cojanu & Visan, 2017).

Genetic psychology studies take a special place in defining the psychomotor concept because they disclose the active corporal role of psychomotricity in developing cognitive functions. The movement influences child's behavior as a main factor of framing his temper (Macri, 2014)

In their researches, the specialists introduced different definitions of psychomotricity, they tried to classify psychomotor components and also they tried to theoretically approach different perspective of manifestation of psychomotricity (Horghidan, 2000; Grosu, 2009; Epuran, 2013)

As a result of these efforts, we noticed that the authors agreed that psychomotricity can be induced (influenced) in the first years of life, till 11-12 years old (Albu & Albu, 1999). As well, psychomotricity can encompass research subject also after this age, for persons with behavior disorders or mental disorders. In this case, according to the gravity of neuromotor affection, psychomotricity can be a concern for the entire life (Popescu & Popescu, 2015)

In attempt to establish the psychomotricity components, a lot of classification have been revealed. Thereby, in different authors' studies we can find a different number of components. Grosu (2009) classified a number of 9 components, meanwhile Preja (2014) presents 4 components. Other authors present in their studies classifications with 10 components (Epuran, 2013) or 7 components (Horghidan, 2000).

At the basis of the achievement of these classifications a lot of essential behaviors take place: neuromotor behavior, basically motor behavior, perceptive-motor behavior or knowledge of human body and the knowledge of self image configuration. The psychomotricity components come when merging all these behaviors (Musu & Taflan, 1999)

An important place is given to the evaluation of the psychomotor components. Regardless of the manifestation direction or the research purposes in this domain, the researchers applied various tests. The standardized and verified tests are the most adequate means to establish a certain psychomotor level or a recorded progress after a preparation period for specific actions (Vlad, 2000; Radu & Ulici, 2002; Grosu, 2009).

By reference to international specialty literature it can be noticed that the psychomotor aspects have the same definition and classification methods. These theoretical aspects are meant to underline the connection

between body and mind, between cognitive features and the movement actions. These turn into behaviors, attitudes, skills, or actions schemes which allow children to acknowledge the environment, themselves and to integrate in this social environment.

Practical and educational approach

In order to pass from theoretical to practical level, the main reference is represented by Mosoi & Balint (2015) who made a research about the specialists' opinion from Sport Science and Physical Education PhD domains in Romania. According to their study, 95,3 % from the questioned subjects confirmed that they have knowledge about psychomotricity, they studied or they are preoccupied by partial or interdisciplinary study of this domain. This study reveals the fact that the majority of the specialists from physical education domain know the main features about psychomotor education and its influence in children development.

However, another study realized by Macri (2014) contained in the article, "The role of the exercises in the improvement of psychomotricity components in the development of the pupils" about the way of improving the psychomotricity for primary school pupils ascertains that 80% of physical education teachers don't know psychomotricity components, and the other 20% recommends the improving of the components through dynamic games.

So, we can confirm that the university teachers who are involved in various researches for sure know the psychomotricity, whereas the teachers from pre-university education - who should improve the psychomotor components for their own pupils - do not know them.

In Romanian literature we find various studies with practical character, made with various age groups, which cover all directions of manifestation of the psychomotor components.

The educational influences are mostly developed inside school, at primary school level which contains preparatory grade, too. These influences can also be found in other contexts from formal and informal education.

Physical education in preschool and primary school should comprise proper methods and ways according to particularities and properties of each age point (stage). These activities should be structured as final behavior skills, (MEN, 2013) in agreement with a certain content for psychomotor development: natural movements, perceptive skills, physical skills, motor skills, nonverbal communications and hygiene.

The school framework offers the pupils the possibility to integrate in a new environment, other than domestic one. From this perspective, this stage is favorable for establishing the level of psychomotor development of pupils. The majority of the studies made by specialists from Sport Science and Physical Education domain in Romania have ascertained traits, evaluating of the psychomotor potential at different ages.

Abalasei & Popescu (2016) conducted ascertaining researches about the level of body scheme representation of primary school pupils, 6 years old, using Goodenough test. They established that the group involved in the research had a body representation properly developed according to their age.

A research about body scheme is made also by Fagaras et al. (2014) who wanted to reveal the correlation between physical exercises and their spatial representation. To validate the results, they correlated their test with an IQ test for that age. According to the results, the research confirmed the importance of psychomotricity for later motor development of the children.

In 2016, researched made by Ene et al (2016) who followed the spatial and temporal orientation and body scheme through judo ways at preschool and primary school age (3-7 years), ideal period to improve all psychomotor components. These studies approached the recovery valence for those with different disorders and their integration in normal educational system. The researchers' conclusion was that the recovery program has benefits for the integration of the children in collectivity and for the disorder recovery (Penescu, 2015; Cucerzan, 2016). The proposed activities were guided to improve spatial orientation, laterality and body scheme.

Authors present studies about physical education lessons in which they propose movement games to improve psychomotor aspects for preschool pupils (3-5 years) and primary school (preparatory grade, 6 years old). The game is a method used in education at early ages. Authors like Prodan et al (2016), Iconomescu & Ciapa (2017) and Lazar (2018) propose for physical education lessons work programs for the schools where they made research.

The conclusion of these studies was that properly selected ways can improve the spatial orientation, coordination, laterality and group integration.

Iconomescu & Ciapa (2017) realized a study in which they used movement games in physical education lessons at primary school. The research was made with 4th grade pupils, during a school year and it consisted in applying psychomotor education during a lesson per week. The article aims to present the pilot test about spatial orientation and laterality development in physical education lessons at primary school. The psychomotor components were tested with Piaget-Head test for spatial orientation and Harris test for laterality. The differences between initial and final results showed that through specific physical exercises the presented psychomotor components were improved.

Gogan and Abalasei (2018) accomplished a study which began from the premise that any laterality disorder has a negative impact over the children's growth and neuropsychotic and physical development. The research was done with children from preparatory grade (6-7 years) from Iasi County. The included children practiced a specialized kinetic program for 5 months, 3 times per week. The work program included exercises to

improve: kinesthesia, complex perception of the movement, body capacity to displace and to adapt to different tasks, basic and applicative motor skills (walking, jumping, running, throwing, balance, crawling, hauling), motor skills (speed, strength, agility, endurance). The following tests were used: Oseretsky Test, Harris Test, Appreciation of Physical Development Test and Neuropsychotic Development Characteristics Test. The conclusion was that laterality disorders lead to differences between chronological age and motor age and it automatically have a negative impact over the growth and neuropsychic development.

Aspects about psychomotor components at primary school pupils were approached by authors like Schimdt (2012) and Cristuta& Rata (2014) who realized researches about the level of manifestation of the components. Schimdt (2012) tried to prove that the improvement of the motor skills combined with psychomotor skills can increase the efficiency of physical education and sports teaching at primary school. The author considers that for realizing this aspect is necessary to formulate clear operational objectives for didactic projection.

Cristuta& Rata's (2017) research followed the pupils' knowledge about their body scheme, spatial-temporal orientation, multilaterality and general motor behavior. 187 pupils from 1st to 4th grade from Bacau County were tested. The tests used were: Harris laterality Test, Piaget-Head Space Orientation Test, for spatial-temporal orientation and Guillmain-Oseretsky Test for general motricity. The statistic analysis of the obtained data were realized by comparing initial results with final result. The general conclusion was that primary school children have a different level of psychomotor manifestation.

A study with 7th grade pupils was realized by Abalasei (2019) also in Bacau County. This study intended to highlight if there is any major difference between boys and girls regarding capacity to control power, speed and dynamic balance. The 3 cones test was used and took place with 74 pupils. The conclusion was that the girls have a better capacity to control dynamic balance, speed and power than boys at the same age level.

Popovici et al. (2009) realized an interesting study about the capacity to educate pupils through specific psychomotor ways. The study took place at a school for children with special needs. They tried to prove that the physical activities deployed in physical education lessons in special schools produce favorable effects for the organization of the activity. Spatial orientation, body scheme, laterality and global motricity were improved.

Even though the majority of the authors consider that psychomotricity can be favorably improved at young ages and that the forming of the components ends around 11-12 years, the Romanian literature presents researches at an older age level. So, Popovicet. al (2018) did a study with high school pupils (11th grade) to determine the importance of psychomotor development at early ages as a base for later development of children at puberty period. The study was based on Matorin and Flamingo Tests, defining tests for static balance and general coordination.

Others authors did ascertaining studies for university physical education lessons for subject over 18 years old (Gulap,2016; Tohanean & Turcu, 2017). Bruininsk-Oseretsky Test (BOT-2) was used to determine the psychomotor level for students. The conclusions showed that the students have a good psychomotor level and the physical exercises maintain this level.

Moldovan (2015) has an interesting approach about the possibilities to improve psychomotor components for older age subjects. The author realized a study about recreational, informal educational activities. The aim of the research was to estimate the influence of outdoor activities over the students' psychomotor development. The research took place with the students from Physical Education and Mountain Sports from Transylvania University in Brasov, who unrolled outdoor activities within the subject „Free time activities” from the official educational plan. The intervention was realized as an outdoor educational program destined to improve psychomotor skills of students. To evaluate them, the following tests were used: laterality test, kinesthesia test, Flamingo Test, Bass Test, Matorin Test and distance evaluation test. The conclusion of the study was that the influence of the outdoor educational activities for improving students' psychomotor skills privilege the development of psychomotor skills who lead to a better selection of means and activities in an efficient way of youth free time.

The prophylaxis direction was approached by Papp et al. (2014) whose main purpose of study was to enrich the kinetic achievements and kinetic components. As well, they followed to facilitate and to assure a favorable scholar integration through the improvement of psychomotor status of a number of 50 children with ages between 5-6 years, during 2013-2014, hypothesis subsequently proofed.

Behind the formal aspects existed in pre-scholar and scholar activities, the formative valences of psychomotor content found their usage in sports field also. We refer here to sort of specific activities for sports organized in order to lead in obtaining a high performance level. Specialists from sports domain agree that psychomotor acquisitions can contribute to a better manifestation of the sportsmen and the achievement of superior results at specific activities. The specialized literature provides this kind of studies in which are involved sportsman of different ages.

Alexe (2012) tries to present a perspective of how the mental practice can help to reach easier the high performance. Based on ideomotor activation phenomena of the representations about a possible execution of the movement according to space and time, the sportsmen will find a proper way to control, adjust and educate psychomotricitythrough the activation of interconnection between nerve centers and biological structures involved is accomplishment of the movement.

In the case of the Mosoi & Balint's (2015) researches, they started from the idea that the manifestation level of psychomotor components required in an activity largely depends on humans' own capacity to understand this process and to foreshadow (in case of formative process) the exclusive skills of a certain practice domain. Sportsmen from Brasov with ages between 14-24 years participated at this study as: gliding, judo and tennis. The tests used in the researched were: Social Self-Esteem Inventory, Intrinsic/extrinsic motivation questionnaire, Opto-jump, Balance platform, Viena test. The study results showed a medium level of adaptation for psychomotor measured components and a high level of manifestation for specific psychomotor component, related to the task and with the dominant activity field of the subjects.

In the same research perspective, we found Grigore et al (2011) study with sportsmen with an average age of 20,3 years old. These were practicing: karate, kempo and taekwondo, football and handball. The research aimed to establish the level of sportsmen's psychomotor structure. For evaluation, they used: reactivity test, motor coordination and vigilance (RCMV). The study conclusion was that subjects who practice contact sports (karate, kempo taekwondo) obtained better results than those who practice team sports (handball, football) in the moment of an imposed and auto imposed synchronized evaluation.

Another research took place with sportsmen with ages between 18-36 years old, who aimed to test tenacity as a psychomotor component (Paunescu et. al, 2013). The participants were handball, taekwondo, gymnastics, karate, tennis, athletics, football, swimming, rugby and volleyball sportsmen. For evaluation, they used: tenacity index for static efforts. The conclusion was that the tenacity index is significant bigger for right-handed sportsmen than left-handed or ambidextrous one.

The Romanian literature about psychomotricity issues provides studies about the usage of some equipment, installation, and accessories which can improve the manifestation or tested level of psychomotor components. In this perspective, Mereuță et al (2017) described the formation and function of an innovative mechatronic system for the determination and improvement of reaction speed and cerebral hemispheres domination. This system was invented to minimize the differences between left laterality and right laterality and to increase the selective reaction rate to visual stimulation. This system consists as a experimental platform and a personalized software on a PC or notebook.

Following this direction, Badau et al (2018) were preoccupied in using modern technology in researches, so they used in their researches different types of computer tests to measure the dominant and non-dominant side. The simple motor reaction time was tested with Benchmark Human test, the recognition time with Hit-the-dot test and cognitive reaction time with Trail Making Test part B. 332 students from Physical Education study domain participated at the study. The authors admit that through computer games the recognition and knowledge of simple reaction time can provide an easier and attractive sport evaluation.

The recent literature contains researches which highlight the quality of materials which compose the working equipment and testing devices for psychomotor components (Badau et al., 2018, 2019)

The multiple perspectives about psychomotricity from specialized Romanian literature determined us to admit that this domain is really attractive for the researchers, either theoreticians or practitioners.

Conclusions

The theoretical concepts launched authors from border domains were assimilated by physical education and sports specialists. This happened because movement, physical exercises, movement games, assisted or recreational activities are an integral part of this domain.

Psychomotor content was initially found in recovery or cognitive disorders issues which could be improved with the help of simple motor activities.

Psychomotricity is a relatively new concept in physical education and sports domain. Since the transition to physical education as scholar subject taught by specialized teachers, the tendency imposed the creation and adaptation of applied means to older classes also to pre-school and primary school classes. This tendency developed in sports, where the initiation process descended to younger age level. Because of this real situations, it appeared the necessity to respond to children's real needs.

From studies contained in Romanian literature, we observed also some blurring about the proper age level to manifest and efficiently work in order to improve body scheme, spatial and temporal orientation, laterality, general coordination or balance. Also, we believe that some theoretical aspects should clearly delimited difference between psychomotor components and particular motor skills for sports.

We agree that some psychomotor aspects can't be retrieved in sports, even more if they exceeded the age of 12. In this situations, we believe that this is about specific motor skills required by every specificity of the sport, motor skills whose improvement in the practices will prove high performance.

The educational potential of the movement activities is a topicality and it is interesting to be studied in future educational activities. The physical exercise passed from a performance mean to a superior, inclusive and integrative status. In the main time, it is an educational mean, a knowledge mean, a recovery mean, a therapeutic mean, a recreational and social integration mean. This multiple valences can be found also in psychomotor aspects.

Conflicts of interest – There is no conflict of interest to declare

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