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RESEARCH ARTICLE

THEIMPACTOFPSYCHOMOTOREDUCATIONON CHILDREN'SPRESCHOOL LEARNING

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Abstract

Introduction:psychomotoreducationisapedagogicalapproach aimed at acquiring knowledge and facilitatingschool learning by using the child's motor experience, inparticular for the concepts of space, time and energy, bycombiningthedevelopmentofthenervoussystemandeducational actions. The general aim of this study was toanalysetheinfluenceofpsychomotorlearninganditseffecton youngchildren'sknow-how.

Methods: This consisted of an analysis of a review of thescientificliteratureontheconceptofpsychomotoreducationanditsimpacton children'spre-schoollearning.

Toanalyse the data, we used areadinggrid todescribethe importance of psychomotricity in the acquisition ofskills necessary for the development of children's know-how.

Results: By analysing several articles on the subject, wewereabletodescribetheimpactofpsychomotoreducation onthe developmentofpre-schoollearning.

Conclusion: Ourstudyhasenabledustosynthesisealargenumberofstudiesinordertoanalysethecloserelationshipbetweenpsychomotoreducationand pre-schoollearning.

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Introduction:-

Before defining psychomotor education, we will look at the definitions of education and psychomotricity.

According to Larousse, education is the training of a child or adult.

It is the training of someone in a particular field of activity; it is the body of intellectual, cultural and moral knowledge acquired in this field by someone or by a group.

It is the knowledge and practice of good manners and social customs; savoir-vivre.

Psychomotricity is a discipline that uses the body, space and time to enable people to experience their body and immediate environment in order to act appropriately. (Delièvre&Staes, 2006).

Psychomotricity is a paramedical discipline that treats psychomotor disorders. These are neurodevelopmental

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disorders that affect the subject's perceptual-motor adaptation, such as coordination acquisition disorder (CAD) or attention deficit disorder with or without hyperactivity (ADD/ADHD).

Psychomotor disorders are multi-factorial in origin, combining genetic, neurobiological and psychosocial factors. They manifest themselves in specific situations, hindering adaptation mechanisms in particular, and are a source of suffering for the sufferer and the social environment. (Lauzon, 2001).

The first formulation of psychomotor education belongs to

E. Guilmain (1976), who, strongly influenced by H. Wallon, refined motor and psychomotor tests, corrected Ozeretsky's motor examination and succeeded in defining types in relation to character and temperament (Capol and Walther, 1986).

Psychomotor education is concerned with the child's bodily activity as a source of self-fulfilment, as a means of acting on the environment and as a means of relating to others.

It aims to promote the child's overall development through physical activity, with the ultimate goal of developing physical autonomy.

In the literature on psychomotricity, there is talk of the overall development of the individual through movement, and it is recognised that there is an interrelationship between the cognitive, sensorimotor and social-emotional domains. (Vayer, 1976).

According to Vayer, it is a way of approaching the child as a whole, a state of mind (1988). It is therefore the teacher's educational concept that is or is not psychomotor. When he abandoned the term psychomotor because it had fallen victim to its own success and was reduced to designating certain specific activities, it was again because of this concern for a global conception of the child as a functional unit. Lagrange (1974), who was more interested in simplifying and synthesising than in introducing anything new, states that psychomotor education is an attitude of mind towards the problems of education as a whole. For De Lièvre and Staes, it is also an all-encompassing view that perceives the constant interactions between motor skills and the psyche and between the individual and the environment, but it is also a technique (2006). This all-encompassing view is also expressed by Donnet, for whom psychomotor education recognises the child as a whole in an encounter between the body, movement and their affective significance (Donnet, 1973).

We can see that this notion of globality is sometimes used to describe the child, sometimes the way we look at him or her, and sometimes education. If the child is considered as a unit, in its entirety, it is certain that psychomotor education cannot be an isolated teaching discipline, juxtaposed with others that are not psychomotor. It necessarily concerns the whole of education. It is a global, affective, practical and intellectual training (Lagrange, 1974) and it is completely inconceivable that psychomotor education andnon-psychomotor education should exist side by side (Vayer, 1978).

According to Paoletti (1974), the fundamental aims of psychomotor education are to apprehend reality, develop motor skills and personality and increase autonomy.

In the education system, play is a tool for good learning, adding exponentially to the learning process, as well as influencing social relationships. Paoletti (1999) argues that the interaction of children's motor skills, through touch, sight and hearing, is essential for their all-round development.

So how does psychomotor education influence children's pre-school learning?

Materialsandmethods:-

Our study consisted of a review of the scientific literature. To analyse this review, our selection criteria were: articles,reviews, reports, memoirs, oral presentations, congresses, web pages, etc.); published on the subject of psychomotor education in English or French; whose title or keywords contained at least one of the research terms or, failing that, strongly evoked psychomotor education.

Domains" that did not correspond to our research area were excluded.

Results:-

To analyse the data, we used a reading grid to describe the impact of psychomotor education on young children's know- how.

Each article was read and analysed using a grid developed specifically for the study and corresponding to each of the objectives.

An analysis of 35 articles on the subject has enabled us to identify the relationships between reading, writing, logicomathematics, spatio-temporal structuring, laterality, rhythm and perception of the body, all of which have an impact on the pre-school life of young children.

Learning towrite:

Writing is a long learning process that requires a wide range of skills.

According to Rodrigo and Merege (2012), children spend several years experimenting with and exercising their graphomotor production skills through scribbling, drawing and

This is called "pseudo-writing", before being able to acquire handwriting.

Children go through three stages of learning:

-Stage 1: from scribbling to the birth of the first shapes

-Stage 2: They become aware of their shape

-Stage 3: He has mastered his route

The child's ability to create and control the movements needed to make a trace is linked to the dynamic adjustment of his posture and his various points of support. The stability of their position will gradually enable them to free their writing arm and hand. Rigal (2003) studies the movement involved in the graphic act, its form and content, in order to highlight the motor and perceptual origins that enable drawing. There are many requirements for this movement, including the coordination of the many joints of the hand, wrist, elbow and shoulder, which enable letters, numbers and symbols to be formed. In addition, to hold a pen and guide it across the page,sensory signals from the skin, joints and muscles of the hand enable the necessary adaptation to the friction of the pencil on the paper. Finally, writing activities are improved over the years, automated and stored in memory as a motor programme. (Huguet, 2017).

Writing and theperception ofthebody:

It is interesting to rely on the perception of the body in the sense that the child must have a good awareness of his body schema in order to understand the spatial organisation of writing. It is important for them to know which joints are involved in the act of writing and how they fit together. At the start of the learning process, the whole body is involved in the act of writing, and then the child will use his or her hand and fingers selectively. As well as acquiring the body schema, children need to distinguish between left and right, which will later define their lateralisation (around the age of 7), in order to be able to write correctly. (Georges, 1976).

The development of the body schema is therefore essential for acquiring the capacity for abstraction, which is "the intellectual operation that consists of isolating by thought one of the characteristics of something and considering it independently of the other characteristics of the object". (Batie, 2016). This operation is necessary for the appreciation of distances, directions and shapes, and therefore for graphic design.

Writingand spatialstructuring:

The acquisition of spatial organisation must be solid so that the child can construct topological relationships and, more generally, a perceptive space, in order to be able to grasp the meaning of letters and their shapes, and to have internalised the trajectories and different writing zones. Knowledge of the orientation of letters is crucial, and movement provides information about their spatial nature.

Writing and laterality:

Fixed and operative laterality also plays a part in access to writing. Experience helps to fix and stabilise lateral dominance and helps children to find the hand with which they can write most effectively. In addition, tactile

sensitivity must also be stimulated before writing in order to leave traces of perceptive activities and improve the way the writing instrument is held.

These multiple parameters are necessary and they support the idea that a body in movement as a whole is a support for learning to write. Indeed, the movements involved in writing not only help to represent and memorise letters, but also to recognise them visually. (Dailly and Moscato, 1984).

Writingandtone/Posture:
Tonus is largely responsible for posture. It provides a certain amount of bodily resistance, which allows postural straightening and conditions the availability of the different parts of the body involved in the graphomotor movement. According to Bullinger (1988), postural and tonicsupport points are required for the graphomotor action to proceed smoothly. The overall body posture and tone of the child involved in a graphomotor task change with age. Ajuriaguerra, Auzias and Denner (1971) observed a development towards a progressive straightening of the head and trunk, and a reduction in the support of the trunk, forearm and wrist on the table, in children aged between 5 and 14. In addition, they observed a gradual increase in the importance of movements performed by distal joints compared with more proximal movements. Bullinger talks about this in terms of a gradual shift from an initially global motor investment to a more local investment that ultimately mobilises only the relevant body segments.

According to Ajuriaguerra (1951), a writing posture must necessarily be asymmetrical. The weight of the body must be shifted from the upper body to the forearm on the dominant side, in order to free the dominant writing limb. There is also a consensus as to the distance to be left between the sheet and the face of the person writing, which is of the order of 20-30 cm, to allow the best possible visibility, without constraint

Learning to read:
Reading is the perception of graphic symbols with significant value. As in ordinary perception, lexical perception goes through phases of inability to fix or attach to the object, which in this case is the letter. The field of graphic perception is not one of free choice. It is subject to rules of direction, seriation and division in a shrunken space. As a result, the general rules of object perception and exploration take on a special character here, and the general rules of oral ordering interfere with these perceptual phenomena.

Learning to read is part of the general framework of all learning. It involves indulgence in the activity and effort in the work. This learning takes on affective values of play or donation. (Galifret-Granjon 1994).

Readingandrhythm:
Insofarasreadingismovementinspace,thereisarhythmicity,ameaning,aparticularorientationtotheperceptual-oculo-motorprocess.Butasanexpressivelanguage(readingisveryoftenthecomprehensionofalanguageverbalisedbythereader)reading,likeoralexpression,takesplaceina"rhythmic-melodicphrasticmould" (Piaget andInhelder, 1948).

Readingand laterality:
Since reading is a visuomotor habit, the acquisition of the corresponding dynamic schemas is based on the prior organisation of the body schema and is directly dependent on it. (Bergeron, 1991).

Lateralization for both reading and writing should already have been acquired by the child, whose development is proceeding normally. The teacher should even encourage them to consolidate this.

The child's learning difficulties and a problem with lateral hand-eye dominance suggest ill-defined manuality and difficulties with academic learning. The determination of manual preference at the cerebral level is thought to be influenced by the concentration of language, reading and writing control centres in a single hemisphere. Difficulties with manual dominance and a laterality disorder can thereforeaffect reading performance. These difficulties in correctly identifying right from left can result in errors of inversion or confusion between right and left, hence the importance of a good body schema.

A bilateral and symmetrical brain would register the same shapes with opposite right-left orientations in each hemisphere. Like laterality, reading develops and improves differently from one youngster to the next. Not all children who have difficulty with their laterality necessarily have reading problems.

Readingandspatialstructuring:

The organisation of space, the activity of spatial structuring, evolves with age. With age, it becomes more precise and capable of encompassing more elements. Initially, its development seems to merge with the development of intelligence itself.

But Ducret (1984) clearly shows, in his book on the representation of space in children, that very early on, the construction of spatial relationships is pursued simultaneously on two distinct levels, the perceptual-motor level and the representational level.

Learning to read will require children to value orientations and spatial relationships, and to differentiate very fine structures.

If we look at the visual behaviour of the young child reader, we see that it is markedly different from that of the adult or experienced reader: eye movements are more frequent and more disordered, particularly for line breaks, which often require numerous saccades of readjustment. What's more, young children not only use their eye mobility to read, but also, as in any exploration of space, joint movements of the head, hands and gaze.

For Bullinger, this aspect "is fundamental: the movements of the hand and head on the text offer a set of proporioceptive redundancies which allow ocular mobility to be spatially organised and to make sense", and Bigras Bouchard note that the constraints of immobilising the head or suppressing the tracking of text with the finger can disturb, rather than improve, reading. (1997).

Theinfluenceofcomponentsofpsychomotordevelopmentonlogicomathematicalperformancein youngchildren:

Logic can be defined as the science of reasoning. It is useful as a tool for thinking about operations, geometry, problems and all branches of mathematics. Rigal (1976) considers that "the role of logic is not only to found mathematics, and even less to duplicate it, it is to identify all the elementary structures, in particular those that precede mathematisation".

Children learn to study the abstract properties of objects (numbers, figures) and to organise and structure their space (classification, seriation) to gain access to the logic needed tocarry out mathematical operations. After training, they are able to use their hypothetico-deductive logical thinking to good effect.

Perceptual-motor development is a key factor in a young child's ability to learn.

In education, this is referred to as psychomotor awakening activities, which bring together visual, auditory, proprioceptive, tactile and kinaesthetic perceptions and their interaction. Piaget (1977) considers that visual perception exercises are essential for learning mathematics, as they enable the various components and their relationships to be analysed in order to avoid confusion between certain numbers, such as "6" and "9".

Moreover, he considers that the acquisition of spatio- temporal perception also plays a predominant role in logicomathematical learning. According to Mélanie (2017), this acquisition requires orientation in space, "an appreciation of distances and intervals, a perception of the third dimension and a space-time relationship", and also proposes a certain awareness of the notion of grouping, as well as coordination, mental representation and memorisation in this same awareness.

However, the influence of the various components of psychomotor development (laterality, right-left orientation, spatial and temporal organisation, body schema) on the learning of logicomathematics has received very little experimental study. Only the relationship between digital agnosia and mathematical performance has received particular attention. The studies took account of the Gerstmann syndrome, which showed that digital agnosia resulted in acalculia, underlining the importance of finger knowledge in the acquisition of numeracy. The work of Cécile (1971), carried out with children aged 3 to 5, showed that the acquisition and retention of numbers begins with the fingers before being generalised to objects. In mentally retarded adults, a relationship has been established between digital gnosis and mathematical results: subjects who distinguish their fingers better also obtain higher marks in mathematics.

Altman (1967) showed similar results with university students using a drawing test of the five fingers of the hand.

According to Trouil et al (2008), there is independence between digital knowledge, right-left discrimination and mathematical results.

This assertion is based on a study of these factors in normal children aged 8 to 12 and in children aged 13 to 20 with learning difficulties in mathematics.

It may be noted that children aged 9 generally already have an excellent knowledge of their fingers (Sprenger-Charolles, 1986) and it is true that children use their fingers at the start of learning to count, but from the age of 9 this method becomes secondary. Moreover, the absence of variation in the results of the finger knowledge test could not lead to other conclusions. A study carried out by Lyle (1969) with children aged 5 to 12 on the same concerns led him to the conclusion that good finger knowledge does not necessarily translate into higher results in mathematics.

Conclusion:-

In their early years, human beings systematise knowledge by seeking out new experiences. Psychomotor education supports this process by developing motor, emotional and psychosocial aspects. Through play, children discover their own bodies.

Psychomotor education means that the child can overcome various obstacles in the social environment. Joking awakens the desire for discovery and exploration, providing a direct route for the child to express his or her emotions.

It can be said that psychomotor education in pre-school seems necessary for the child's overall development, since it allows certain dimensions of gross motor skills to be improved and meets the needs of caregivers.

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