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SciVerse ScienceDirect

Procedia - Social and Behavioral Sciences 51 (2012) 957 – 960

Procedia
Social and Behavioral Sciences

ARTSEDU 2012

The roll of sensations, perceptions and representations in learning dance sport

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Abstract

The role of sensations, perceptions, representations, thought, memory and imagination is obvious in the capture stage, recording and processing of information divided into: sensory information stage, perception and representation of dance action to be executed; understanding the technical execution to be made; the memorizing of the necessary data for the right training habit. Their means of action is necessary in order to understand their role and specific action methodology, so as to learn the technique as correctly as possible. Learning dance sport technique is a complex neuro-motor process that deserves to be investigated in detail, to act accordingly. The analysis of the learning steps and its neuro-psychiatric involvement are fundamental skills into training for specific dance sport movement. In the present study this facet of formation, memorizing and logical technical movement imagination for standard and latin dances is being analyzed.

Keywords: sensations, perceptions, representations, dance sport, learning;

1. Introduction

In the majority of cases, learning dance sport movements has two sides: a neuro-psychical one and a functional-anatomic one.

From the point of view of psychical mechanisms, learning the dance sport movements consists of going through two stages:

a) The intake, recording, motion information processing, from the initial one-sensuous, to the rational- the thinking, going through the filter of perceptions(movement, spatial and temporal) and representations, also storage and pre-figuration based on memory and imagination.
b) The movement execution stage, from the initial, based on thinking and memory, to the final one of habit, based on the cortical dynamic stereotype. It's realized by the muscle and bone systems, respecting the biomechanical laws and under the control of the central nervous system (CNS), with permanent kinesthetic feedback as an adjusting element.

2. The stage of the intake, recording and information processing

Sensations are caption, recording and initial information processing mechanisms.

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1877-0428 © 2012 Published by Elsevier Ltd. Selection and/or peer review under responsibility of Prof. Ayşe Çakır İlhan
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"Action is both the source of sensations, and the answer to them.", according to Bonnet and Chantrier (1994). Specific movements, the simplest components of the dancing activity are possible thanks to the sensitivity to this activity. Sensitivity is the body's ability of receiving apparently independent factors and of establishing connections between them and the action."Sensitivity develops in perspective and in connection with motion approaches, and movement becomes a booster of sensuous orientation"(M Zlate, 1999).

Table nr. 1 Sensory information in dance sport

Types of sensations	Role	Stimuli	Receivers	Cortical projection
Visual	Organises and coordinates voluntary movements ensuring the unity of specific behaviour. Important factor of the sensuous knowledge experience. Provides information in learning most of the dance moves:direction, distance, position, spatial image of things.	Eletromagnetic waves between 390 and 800 milimicrons.	The retinawith photosensitive cells, the cones (5-7 million sensitive to colour) and the rodlets(125-130 millions, receivers of night vision)	The occipital lobe. The primary visual cortex placed on the edge of calcarous fissure.
Auditory	Contributes to the formation of temporal perception necessary for the motion image: rhythm, tact. They are the means of contact with the world of music. They contribute to general pshyhical development (language), verbal information means in learning from exposure.	Sound waves with frequency between 16 Hz(the minimum) and 20.000(the maximum)	The corti organ, made of the double-layered receiver cells(an internal one, from one line of cells and the external one, from three or four lines of cells.)	The temporal lobe. The primary auditive area is plased inside the upper gyrus.There are areas of association placed in the parietal cortex.
Tactile (pressure)	Allow the transmission and tactile information knowledge in the body contact between the partners	The superficial deformity (tactile) or deep deformity (pressure) of the skin	Free nervous terminations from the dermis and epidermis. The Meissner corpuscles, the Merkel disks, the Pacini corpuscles	Parietal lobe, somoesthesic area
Proprioceptive kinesthetic Somatoesthesic	Inform the cortex about the body position and its modifications. Transmit information on active movements, inform about the results of its work during specific movements.	Signals coming from the tendons, joints and muscles	Rufina and Pacini corpuscles, Golgi tendon organs, neuromuscular pins, free nerve endings in muscles, tendons, joint surfaces	Sensory-motor area of the frontal lobe
Orthostatic and balance function	Maintain vertical balance, adjust the balance in case of slips, falls	Signals coming from the body in connection with his position and its deflection	Vestibular apparatus, the semicircular canals, otolitic organs	Probably the temporal lobe

Perceptions are mental mechanisms of deep sensorial information processing.
When learning from dance sport, we deal with complex perceptions such as:
- perception of the real movement through:

- the presence of the dancers' movement, the way of moving, the direction of the movement;
- the locomotion synergy based on the rhythmic and modulation, the articulation of the cognitive processes with the sensuous-motor ones, smart movement generators.
- space-time coordination;
- perception of the triple dimension;
- perception of the basic spatial elements
  - dynamic indices - motion parallax
  - static indices - accommodation, convergence, stereoscopic
  - creating conflict between visual, auditory and proprioceptive information
  - complex cognitive-intellectual mechanisms;
  - the referential mechanisms, mental maps, spatial referential recalibration;
  - neuromorphologic and neurophysiologic mechanisms of space perception.
- perceptions of time by:
  - the perception of succession;
  - rhythm perception;
  - perception and estimating of the time (start and end times of action and estimating the time between the two, based on the external and interceptive benchmarks);
  - temporal orientation (position of a phase of action - choreography structures - in relation to the entire cycle of specific actions - choreography).

Perceptions create the impression of the existence of motion for the dancer, the movements being part of the actions and operations, of the actual work and his thoughts.

When they become prevalent by organization and structure, "they turn into skills or essential skill components" (M.Zlate, 1999).

Perception plays a part in the work of the dancer itself, without which the motion picture and the „experience" of pair movement.

In the perceptual-motor learning, which consists of getting used to watch, to listen and to move with the perception of your own movement in relation to the movement of others, perception is of crucial importance.

M. Zlate establishes three fundamental roles of the perception which, adapted to the activity of dancing would mean:

- role of information - easy adaptation to the job of dancer;
- the role of guidance, orientation, control of the learning phenomenon in dance;
- a closing and opening switch role for the mental and motor act trajectories, necessary to the execution of the specific movement in dance sport.

In this regard, perceptions are permanent in dancing activities for as Golu says in 1971 "their presence is not only important but absolutely indispensable for adjusting the final activity adaptation."

Psychological research methods are currently guided by deciphering the brain mechanisms involved in achieving perception.

Representation is integrated role image in perception, designed to complement the fragmented information collected, in order to give meaning to movement during its recognition and to provide a system of perception that can encode the results of specific movements.

In this regard, representation is not merely a bridge between perception and memory, but also one between perception and motor control.

In dance sport we discuss kinetic representations, or mental-kinetic images or models.

Representation in dance sport technique is performed in two fundamental ways: (adapted by Richard JF)

- technical knowledge structures stabilized in long memory (general skills)
- circumstantial constructions developed in a particular context (elements or techniques) with specific purposes.

Representation in dance is to feature specific content of the specific movement preparing the real leap to the essential - the actual movement - the privilege of thinking.

M. Zlate entitles as probable the hypothesis that "representation should reflect holistic properties of stimuli". Because of this we can say that within the dancer's subjective inside, the informational content translates as images. To understand the dance feature representations, we should know the psycho cognitive theory of Jean-François Le Ny which refers to the degree of abstraction of the representations. Thus, through adaptation we can have two kinds of representations.

Representation with a moderate degree of abstraction based on demonstration, which is characterized by:

- familiarity - has a high probability of association with something already known;
- figurative - are real, containing powerful perceptual and figurative components;
- perceptual discourse –come from perceptive learning, leading to the construction of the motion prototype, and not by using language.
- the lack of characterization through verbal means;

Highly abstract representations made on the basis of exposure (explanation):

- lack of familiarity;
- familiar - high degree of abstraction;
- verbal discourse - is acquired through language;
- verbal presence of their characterization.

Another theory that fits the dance learning would be that of Richard JF that distinguishes three types of representations corresponding to three types of understanding:

- conceptual representation - language characteristic structures underlying communication and transmission of information through language;
- image representations - express spatial structures characteristic to visual perceptions;
- representations related to the execution of actions – corresponds with sensuous-motion factors and expresses the priority bond, transformation and successive movements, creating a privileged expression of temporal structures.

The most significant properties of representations of dance are:

- figurative - convey what is typical in motion, the most charged information characteristics;
- efficiency - ensuring the transition to an upper stage, leading to the concrete;
- landscaping – the upper limit of possible representation performances – binding in the mental image of dimensions that cannot be perceived but successively;
- the integrated character – reproduction of the outside on the inside, a correspondent of the motion image in motion senses and belonging to motion senses;
- the symbolic character – the ability to avoid executed movement.

Conclusions. Learning dance sport technique is a complex neuro-motor process that deserves to be investigated in detail, to act accordingly.

The analysis of the learning steps and its neuro-psychiatric involvement are fundamental skills into training for specific dance sport movement. In the present study this facet of formation, memorizing and logical technical movement imagination for standard and latin dances is being analyzed.

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