Identifying and analysing motor skills answers in the corporal expression and dance through OSMOS

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Abstract

The following paper outlines a new approach to the study of motor skills through the Observational System of Motor Skills –OSMOS- [1, 2]. The instrument is mixed and combines a field format with a category system for analysing natural contexts where body movement is relevant, as motor and sport practices, dance and psicomotricist situations. In the learning process of creative dance or similar disciplines, the application of the pedagogical model will be fundamental for the attainment of the proposed aims. During the practice, the instructions are usually open to generate a divergent production of motor skills answers. The paper also outlines a new approach to the analysis of time-based event records — in this case, for motor skills — known as T-pattern detection. Results suggest that it is possible to identify clearly all kind of motor skills based on the observational criteria and a further analysis of temporal behavioral patterns.

Key words

Observational System of Motor Skills, T- Patterns, Creativity, Corporal Expression, Dance, Pedagogical model

Objectives

To observe the production of motor skills answers in corporal expression and contemporary dance. To observe the capacity to generate motor skills answers in relation to the phases of all creative process: experimentation, fluidity, variability and elaboration.

To observe if "pedagogical models" based on exemplary instructions (the teacher gives a motor model as an example), metaphorical instructions (the teacher describes the tasks using a metaphor or guided vision) or descriptive instructions (the teacher explains the task using specific dance language) and "interindividual interaction" variables have any relevance to generate motor skills answers.

Methodology

120 sport university students without Dance experience participated in the study. A system of categories of observation settled down *ad hoc* to analyze the sessions using the Theme coder [3] to obtain analysis retardations. Later, we have used the Theme software for the detection of patterns of analyses was used that show to the relevance and the configuration to us of the registered events.

Instruments

The instrument (Table 1) is based on *changing criteria* (stability, locomotion, manipulation, *coreoespacial*[1] and temporal), each of which gives rise to a system of categories that are exhaustive and mutually exclusive. The data are then imported into the Theme software (www.patternvision.com) in order to detect hidden patterns.

Table 1. *OSMOS Observation Instrument. (Castañer, Torrents, Anguera, Dinušová, in press [2])*

CRITERIA	CATEGORIES
Stability	*Support stability* (Es): motor skills that enable body equilibrium to be maintained over one or several body support points, without producing locomotion (e.g. balancing actions)
	Stop stability (Ed): motor skills that enable the body to be projected by elevating it in space, without producing locomotion (e.g. jumps)
	Axial stability (Ea): motor skills that enable body axes and planes to be varied from a fixed point, without producing locomotion (e.g. turns)
Locomotion	*Propulsion-stop locomotion* (Lp): motor skills that occur at the start and finish of a body movement through space
	Sequential re-equilibrium locomotion (Ls): motor skills that enable a space to be moved through via the priority sequence of actions of the segments of the lower limbs (bipedestrian locomotion) or upper limbs (in inversion)
	Simultaneous coordinated locomotion (Lc): motor skills that enable a space to be moved through via the combined action of all body segments (e.g. quadrupedian locomotion)
Manipulation	*Impact manipulation* (Mi): motor skills in which certain body zones briefly come into contact with objects or other people
	Conduction manipulation (Mc): motor skills in which certain segments handle (for a given period of time) objects or other people
Coreoespacial	*Body changes* (C): evident variations in body posture and gestures
	Change in spatial direction (D): variations in the spatial direction of the movement
	Change of spatial level (N): change between the different spatial levels (low or floor work, middle or bipedestrian work, upper or aerial work).
	Combination of variations in body posture/gestures and spatial direction (CD)
	Combination of variations in body posture/gestures and spatial level (CN)
	Combination of variations in spatial level and direction (ND)
	Combination of variations in body posture/gestures, level and spatial direction (CND)
Temporal	*Time* (T): when there is a clearly observable change in the tempo of a motor action with respect to the previous one
Interaction	*Dyadic interaction* (Id): interaction with a partner
	Group interaction (Ig): interaction with more than one other group member

[1] *The body which generates these motor skills is located within a set of space-time coordinates which we have considered under a dimension termed coroespacial*

Results

Participants, when there was an exemplary model, generally produced significantly more different actions compared to the pedagogical model proposed by the teacher than exact reproductions, but they copied certain characteristics. Descriptive and metaphoric instructions seem to generate more varied answers than the exemplary. This is especially clear when using descriptive instructions, but on the other hand, metaphors help the students to understand the task and to be more motivated. Variations of the answers in all kind of tasks were significant in the category of time and body posture and gestures. Space changes or the variation of the type of interaction when there was a model were uncommon, and changes in the skill categories were specially evident in the tasks without model. It was also evident that the interaction with partners generates a different behavior compared to individual work, because participants try to agree with their partners. Moreover, the interaction seems to inspire the students and help them to feel themselves more creative.

References

1. Castañer, M., & Camerino, O. (2006). *Manifestaciones básicas de la motricidad*. Lleida: Publicacions de la Universitat de Lleida.
2. Castañer, M., Torrents, C, Anguera, M. T. & Dinûsová, M (in press): Instrumentos de observación ad hoc para el análisis de las acciones motrices en Danza Contemporánea, Expresión Corporal y Danza Contact-Improvisation. *Apunts*.
3. Magnusson, M.S. (2000). Discovering hidden time patterns in behavior: T-patterns and their detection. *Behavior Research Methods, Instruments, &Computers,* **32(1)**, 93-110.
4. Anguera, M.T. (2005). Microanalysis of T-patterns. Analysis of symmetry/asymmetry in social interaction. In L. Anolli, S. Duncan, M. Magnusson & G. Riva (Eds.) *The hidden structure of social interaction. From Genomics to Culture Patterns* (pp. 51-70). Amsterdam: IOS Press.
5. Jonsson, G.K., Anguera, M.T., Blanco-Villaseñor, A., Losada, J.L., Hernández-Mendo, A., Ardá, T., Camerino, O. & Castellano, J. (2006). Hidden patterns of play interaction in soccer using SOF-CODER. *Behavior Research Methods, Instruments & Computers,* **38(3)**, 372-381.
6. Pattern Vision, *Theme Coder* (software), 2001. Retrieved January 15, 2002, (from http://www.patternvision.com.)