

LANTD: The Implementation of a Nonlinear Pedagogical Approach to Primary School Traditional Dance Teaching

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The aim of the present article is the presentation of a Laban Notation-based method for Teaching Dance (LANTD), as a practical example of a movement-based, nonlinear pedagogical approach applied to primary school traditional dance teaching. The author examines relevant literature underpinning the design of open-ended and student-centered dance learning environments and explores the potential of employing complex and nonlinear pedagogies as a means to this end. Nonlinear pedagogies involve the manipulation of task, performer and environmental constraints in a facilitative manner so as to encourage movement pattern variability, exploratory learning and student self-organization to goal directed behaviors. In the present case, the principles of nonlinear pedagogies are outlined, based on the dynamic systems theory, and suitable explanations are given regarding their relation to the lesson framework of LANTD. Emphasis is put on analyzing the constraints-led framework of selected LANTD lesson activities, as the latter were implemented in a classroom of fourth-grade students, learning Greek traditional dance. These practical examples aim to further support primary dance teachers in envisioning ways to shift away from 'closed' technical teaching perspectives to practices undergirded by notions of young students' mature movement acquisition and self-conscious development.

Recent calls in dance pedagogy constantly address the need to educate young dancers in line with a broader understanding of their development and identity, within reflective practices of physical skill and critical thought empowerment (Bonbright & Faber 2004; Warburton 2008). By foregrounding values such as adaptation and creativity, nowadays curricula support young students in terms of learning about the diverse and uncertain 'truths' surrounding their bodies, which they themselves are encouraged to discover through exploratory practices (Wright 2004). This non-deterministic view of dance education challenges the traditional paradigms which are concerned mainly with technique and performance development and envisions learning in terms of a dynamic,

nonlinear process framed by the interaction between performer, task and environment constraints. The latter are boundaries that interact in an unpredicted manner, initiating domain specific behaviors, which are influenced by local conditions and students' interests or experience (Davids, 2010).

In regard to educational research, the rationale underpinning the implementation of nonlinear pedagogical approaches to the study of student learning and development is rooted in the conceptual frameworks of ecological systems theories, such as the dynamic systems theory¹ and the complexity theory² (Storey & Butler, 2013). Both these theories recognize that individual sense making, teacher-student relationships and classroom dynamics are all complex entities that develop in common while oscillating between periods of stability and chaos within different types of systems (i.e. family, community, neighborhood, customs, values, etc.) and under the influence of environmental boundaries or constraints (Davis & Sumara, 2006). Therefore, an optimal knowledge communication system or an ideal learning environment cannot exist. Instead, learners must be educated how to stay tuned to the most relevant information properties within their context of action, so as to develop the persistence and adaptability needed to exploit surrounding constraints and co-ordinate body and mind effectively (Davids, 2010).

Within the field of dance education, recent scholarly activity keeps in pace with the currency afforded to complex and nonlinear pedagogical perspectives, with researchers seeking and testing conditions, media and practices of adaptive and situated dance learning (Bond & Stinson, 2007; Dixon nee Burrows, 2005; Fortin, Long & Lord, 2002; Loquet & Ranganathan, 2010; Lord, 2001; Sims, 2010; van Rossum, 2004).

In Greece, this desire to provide "holistic quality" dance teaching has sensitized researchers and theorists from various dance norms, including traditional dance. Traditional dance is a core subject of the Greek public, primary and secondary Physical Education (PE) curriculum, closely tied to historical, aesthetic and cultural values of the Greek society and tradition. For its teaching, dance scholars and practitioners suggest the use of multi-sensory, student-centered teaching practices that equally promote psychomotor, cognitive and social learning (holistic learning) (Dania, 2013; Likesas, Koutsouba & Tyrovola, 2009; Likesas & Zachopoulou, 2006; Venetsanou & Kampas, 2004).

However, everyday practice proves that mainly reproductive teaching styles are used during instruction, with dance teachers standing and performing in the center of a large circle and students "mechanically memorizing" and reproducing steps, motifs or choreographies (Dania, 2013; Lykesas, Koutsouba & Tyrovola, 2010). According to Brymer and Renshaw (2010), teaching practices of this kind are usually too prescriptive and teacher dominated, in the sense that they do not encourage exploratory learning behaviors that would promote motor skill development and individual sense making. Due to this fact, students' frustration and unwillingness for lesson participation is reflected in their negative attitudes towards the PE teacher's announcement:

Teacher: Today students we will practice on traditional dance!!

Students: Oh no! We prefer to play!

Teacher: Ok! We will do a 20-minute practice and then you can play.

Students: Yeahhh!!

Interpreting the above typical case of a Greek (public) school traditional dance lesson under the prism of the dynamic systems theory it becomes evident that the wide range of students' skill levels within each classroom (individual constraints), combined with environmental and task constraints such as classmates' naughtiness during the lesson or the low physical activity impact of lesson activities and skill practice, create a dysfunctional learning environment that does not challenge students physically, emotionally and socially and make them unwilling to participate. On the other hand, the structure of many traditional dance forms (i.e. structured circle dance forms, presence of a partner, complex movements, correct foot, integration of upper and lower body, etc.), lead many beginner students to frustration and make them feel inadequate and uncomfortable to try before others.

For all the aforementioned reasons, the implementation of direct, reproductive instructional practices that do not address students' developmental needs and interests cannot guarantee teaching effectiveness and learning progress. At a practical level and in order for nowadays students to develop competency and enthusiasm for traditional dance, it will be advantageous for teachers to use nonlinear approaches in their teaching, ones that support a progression of skills and concepts and help students take responsibility for their learning.

Based on the above, the aim of the present article is the presentation of a Laban Notation-based method for Teaching Dance (LANTD), as a practical example of a movement-based, nonlinear pedagogical approach to primary school traditional dance teaching. This method has already been tested a) within the context of Greek traditional-dance higher education, as the core part of an intervention program focusing on the provision of "holistic quality dance teaching" (Dania 2013) and b) within the context of Greek public primary education, as the main issue of an action research project carried by the author in a classroom of Grade four students with the purpose of improving everyday teaching practice. In the present case, the LANTD method and its underlying nonlinear pedagogical features are analyzed within the context of primary education. In recent dance literature only few practical examples of nonlinear pedagogical perspectives to primary dance teaching are available (Atencio et al. 2014; Hopper 2010). This fact raises the author's interest to employ with such an undertaking, since primary school represents a foundational educational stage for the development of children's positive attitudes towards movement and dance as forms of lifelong physical activity.

In the first part of the article, the principles of complexity and dynamic systems theories are discussed in detail and related to the lesson framework of LANTD. In the second part, the educational needs and characteristics of upper

primary school students are outlined (9-12 year olds) and selected LANTD lesson activities are analyzed as examples of constraints-led pedagogies especially designed for young learners. These practical examples aim to further support primary dance teachers in envisioning ways to shift away from 'closed' technical teaching perspectives to practices undergirded by notions of young students' mature movement acquisition and self-conscious development.

Complex and Constraints-led Perspectives to Dance Education

In the past decades, the dynamic systems theory has been used as a prominent theoretical framework by researchers of movement behavior in order to provide support for understanding how the body and its parts are coordinated within dynamic learning environments (Chow et al., 2007). According to this theory, neurobiological systems are complex and dynamic entities that develop patterns of goal directed behaviors by individualistically exploiting surrounding constraints (i.e. task, performer and environment constraints) (Bernstein, 1967). The human body - as a neurobiological system - may produce a variety of context specific coordination patterns in an attempt to satisfy the unique constraints imposed on it during action. Davids et al. (2003) state that a common or optimal movement pattern that all bodies may aspire cannot exist, since each learner's central movement system may adopt different types of coordination modes to achieve similar movement outcomes. Movement pattern variability is a prerequisite condition before learners can adapt successfully to situational conditions and produce skilled motor outcomes. Therefore, it should be encouraged within exploratory learning contexts and not be treated as "movement noise or dysfunction" that the teacher ought to restrain (Williams et al., 1999).

Applying the principles of the dynamic systems theory to dance education, it becomes prevalent that the relationship developed between students' characteristics (i.e. anthropometric indices, cognitions, emotions, skill levels, etc.), classroom features (i.e. natural conditions like light and temperature, or social conditions like peer group interactions and norms, etc.) and learning-task organization (i.e. information sources, equipment or teaching aids), will predict the situational constraints of teacher's pedagogy and determinate the dynamics of students' learning trajectories.

According to Brymer and Renshaw (2010) it is important for movement instructors to understand at a practical level how learners acquire movement patterns, since only in this way they will be able to select appropriate methods and equipment and organize learning environments that provide affordances for successful performance and action. Educational researchers argue that such an understanding can best be promoted under the prism of the complex learning theory (Davids, Button & Bennett, 2008). As an umbrella term of all constructivist theories, this theory suggests that learning should be treated as an intra-individual and social process of change that is shaped by the learners'

experience within evolving landscapes of activity and not as a process of preexisting knowledge transmission (Davis & Sumara, 2003; Light, 2008).

The literally fluid environment of every dance classroom (i.e. required coordination modes, climate of peer group interactions, difficulty level of activities, perceptual learning demands, etc.), creates different circumstances within which students find perfection at their own pace and time. As Brymer and Renshaw (2010) state, many students may hit a performance plateau before others, and thus may need to skip some of the teacher's predetermined steps and move earlier to more challenging tasks. At the same time, some of their classmates may need to regress to earlier steps of the learning process in order to overcome performance barriers and catch up with the others. These practice informed observations entail that each learner should be treated as an open and complex dynamic system (Davids, 2010), for which the teacher must afford the optimal tasks for action, those that will combine the objective nature of the learning environment with the subjective nature of the learner (Fajan, Riley & Turvey, 2009).

The teaching of discrete techniques or the breaking of choreographies into dance segments or steps with the purpose of promoting an "ideal for all" dance performance is redundant, since it cannot ensure the emergence of a deeper level of understanding beyond movement mimicking and knowledge articulation. What is needed is the development of a "rough guide" to skill acquisition and practice, one that will help learners perceive and interpret key information, which in turn will lead to relevant action. According to Davids and Araujo (2005), this perception-action mutuality, otherwise called information-movement coupling (Brymer & Renshaw, 2010), is better achieved when learning task constraints are adjusted developmentally so as to help learners attune their movements to key information sources (i.e. rhythmic or space cues) or final learning outcomes (i.e. to react quickly and respond accurately) and ignore other noncritical task variables.

The LANTD Method as an Example of Nonlinear Pedagogies

The LANTD method was developed during the spring of 2012 and was first applied in the context of Greek higher education within a two-month teaching project³ that tested and proved its positive impact on novice dancers' intra-person performance (Dania 2013). The basic core of LANTD is structured according to the principles of the Laban Movement Analysis framework (LMA) which foregrounds the understanding and embodiment of the four movement concepts: Body, Space, Shape and Effort, as a prerequisite of successful dance learning. Within LANTD, the dance repertoire is determined by the teacher according to the dancers' age and level of experience and movement is used as the basic means of organizing instruction. This means that each dance segment, motif or choreography is first experienced, analyzed and classified in discrete movement-concept categories (i.e. dance motifs alternating locomotor and non-locomotor movements, dance motifs with sudden changes in directions, dance

motifs with uneven timing or divided beats, etc.) and then is demonstrated visually by the teacher. The dance repertoire is taught sequentially within ten thematic units that may be presented in the following order (indicative example), taking into account students' abilities and attitudes:

1. **Body:** Parts of the body (right and left side). Their symbolization on the three line staff.
2. **Space-Body:** Supports and transference of body weight in space. **Kinesphere.**
3. **Space- Effort:** Levels and weight of movement (heavy or light).
4. **Space-Body-Shape:** Levels of transference of body weight in space, types of gestures, relationships between body parts during movement.
5. **Body-Effort:** Jumps, dance handholds, timing of movement, movement flow.
6. **Effort-Body:** Movements with different timing.
7. **Effort-Body-Space:** Movements of different body parts with an adversative use of time and space (i.e. slow/fast, right/left).
8. **Review [Effort-Body-Space]:** Movements of different body parts with an adversative use of time and space (i.e. slow/fast, right/left).
9. **Effort-Space:** Floor plans, movement pathways (lines/curves) and body fronts. **Direct and indirect focus of movement.**
10. **General Review**

In all units, dance learning starts from practicing on basic structural elements (i.e. steps, gestures, directions and pathways, music meter and timing of movement, weight of movement) and proceeds to the performance of dance motifs and choreographies. For example, a dance motif can be categorized as being structured by combinations of steps and gestures (Body), that are performed in opposite directions (Space), with arc-like movements (Shape) and bound flow (Effort). Students learn to recognize these classifications: a) within developmentally appropriate activities that give them a chance to experience and communicate about movement form, b) while watching their teacher demonstrate unit specific traditional dances or choreographies.

Each LANTD unit is divided in four parts: a) introductory (games for movement concept recognition), b) main part I (individual or group rhythmic practice), c) main part II (Labankido© tutorials and group activities for dance analysis, performance and composition) and d) final part (teacher demonstration, lesson content reflection), and can be taught either as a whole 100 minute unit or in two 50 minute units, depending on the educational level.

All units follow a guided discovery scenario and offer students hands-on, multi-sensory opportunities for interaction with a challenging thus achievable learning material. The media and practices used for the identification and motor embodiment of the LMA concepts are a) rhythmic training exercises, b) Labanotation reading assignments, c) small-group projects of dance analysis and synthesis, d) lesson observation and reflection protocols. The motor and

cognitive exploration of the dance repertoire is enriched with a specially devised multimedia tool called *Labankido*© (Dania, Tyrovola, Koutsouba & Hatziharistos 2013), which is designed so as to teach students a simplified Labanotation language that they can use for communicating dance knowledge effectively. The basic structure of all LANTD units together with their accompanying learning outcomes are presented in Table 1.

Table 1. *The LANTD method (Dania, 2013).*

The LANTD method (Dania, 2013)		
Part	Teaching Media	Teaching Goals - Students are Expected to:
Introduction	Introductory rhythm & movement games	1. Physically experience new movement concepts before being introduced to them theoretically. 2. Develop their ability to work productively with others.
Main Part I	Dance motif rhythm exercises, movement practice on dance concepts.	1. Develop ability to distinguish between movement concepts within dance motifs or choreographies. 2. Improve their rhythmic and dance skills. 3. Develop their ability to think holistically: to see the whole (dance choreography) as well as the parts (dance motifs).
	<i>Labankido</i> © multimedia tutorials (theory)	1. Learn to read and write dance motifs with the use of Labanotation symbols. 2. Learn to use a definite dance vocabulary for the communication of dance knowledge.
Main Part II	<i>Labankido</i> © puzzles & quizzes (practice) & Teacher Demonstration	1. Develop appropriate Labanotation reading-and-dancing skills. 2. Develop ability to concentrate and pay attention to important dance component elements.
	Team or small group exercises or dance analysis, performance and composition	1. Develop their ability to synthesize and integrate Labanotation concepts and symbols in dance performance... 2. Develop their ability to work productively with others. 3. Develop their ability to draw reasonable inferences from observing other students' dance performance. 4. Develop their ability to perform-dance skillfully.
Final Part	Whole group discussions	1. Describe their own or other student performance in analytical terms using LMA language. 2. Reflect on instances of their performance and set plans for future action.

Challenges and Difficulties of Teaching Dance to Upper Primary School Students

Between the ages of 9-12 years, children exhibit high physical growth and performance outcomes and an increased interest for learning new motor skills (Kassing & Jay, 2003). However, kids at this age are especially emotional and rely heavily on their teammates' opinions about their actions and initiatives. Due to this fact, many of them, especially those who face failure as an ultimate result of the lack of skill, knowledge and talent, hesitate to practice new skills in the presence of others.

According to Dweck and Leggett (1988), it is important for all children to think of their abilities as being subject to improvement and change through their participation in developmentally appropriate learning activities. Such activities give them the opportunity to develop physically, cognitively and socially, at their pace and within an environment of support and acceptance.

According to Lindqvist (2001b), dance lessons in primary schools continue to be mainly a matter of technique, where motor maturity and homogeneity of performance are expected. This is also the case with Greek primary school traditional dance teaching, where circle instruction is primarily used along with closed-pattern activities of basic step and formation practice. Within this context, the presence of many negotiable environmental or task factors (i.e. peer students' performance or criticism, task specific space-time coordination requirements), add more complexity to the process and make many students hesitant to perform before others. According to Ewen (1981), in cases when a learner hesitates or is distracted by his or her peers performance or behavior, the rhythm of movement is broken and performance is impaired.

As Larsson and Quennerstedt (2012) state, the act of moving is not a closed, mechanistic performance output to a preexisting, stable knowledge input. On the contrary, it is a matter of successful social, emotional and physical adaptation to the conditions of the learning environment. Young learners may have shorter limbs or less flexible body parts to model an "ideal for all" dance performance and thus may be negatively influenced by their teacher's performance expectations, or their peer group fashion or social trends (Kohl & Hobbs, 1998).

For novice dancers, participation in lesson activities that would promote movement variability across different conditions of practice (i.e. changes in movement rhythm, use of multimedia teaching aids, simplified versions of tasks, etc.), would be a safer road for the development of functional coordination patterns. Researchers agree that when such activities are embedded within the controlled boundaries of game-play explorations and practice, learner understanding is promoted and experiences of successful performance are guaranteed (Likesas & Zachopoulou, 2006; Venetsanou & Kampas, 2004).

From a nonlinear pedagogical perspective, game-play learning contexts are safe environments for youngsters to develop self and social competence and realize that the greatest percentage of "motor functional intelligence" (the one they perceive as talent), can be taught and thus learnt (Lindqvist, 2001b). Within

age and skill appropriate game conditions, the teacher's duty is to introduce meaningful task constraints, gradually increasing in complexity and information-movement coupling requirements, so that students are positioned in search of viable movement solutions, representative of the expected performance outcomes (Chow et al., 2007). In the case of dance, the gradual increase in complexity does not refer to movement or dance structural decomposition. Instead, it refers to task simplification and adjustment in a way that key aspects of movement's temporal and spatial demands are retained but presented within scaled-down versions of tasks and activities.

The Application of LANTD within the Context of Greek Primary Education

During the school year of 2013-2014, LANTD was used by the author as a method for teaching traditional dance to a classroom of fourth grade students, attending the lesson of Physical Education (PE) at a primary school in Athens, Greece. During that time, the author was working as the school's full time PE teacher, teaching PE to students from Grades one to six.

In Greek public education, traditional dance is a compulsory teaching subject, integrated within the PE curriculum of all Grades. Students attend two 45-minute PE units per week and are expected to attend a total of ten 45-minute traditional dance units annually. For students in Grades 3 and 4, the teaching of five specific traditional dances is suggested by the formal PE curriculum. However, the PE teacher is given the freedom to select other dances according to the school's regional characteristics and the student's ability levels and teach them whenever is deemed appropriate (i.e. as parts of the program of the school's summer festivals).

In the present case, the author used the LANTD method to teach ten traditional dances⁴ from different regions of Greece. The basic characteristic of these dances was that their dance form could be morphologically categorized and symbolized as the result of structural or stylistic modifications and variations made to the dance form of a widespread Greek traditional dance called "choros sta tria" (Dania, Vagenas & Tyrovola 2013). "Choros sta tria"⁵ (Figure 1) is a very popular dance in Greece appearing with either: a) the same name, or b) a different name, or c) a similar dance form in the musical-dance repertory of the residents of Greece and in many of the country's customs and festivals (Dania, Vagenas & Tyrovola 2013).

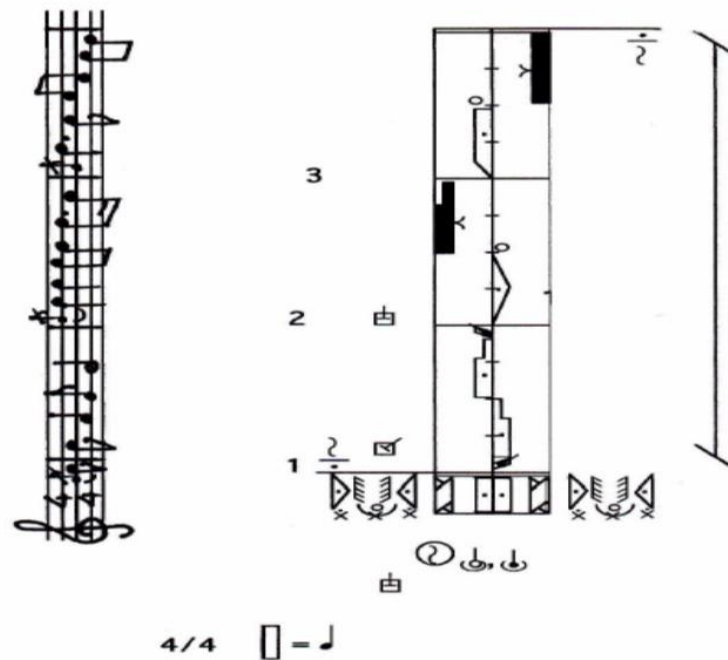


Figure 1. Labanotation graph of the Greek traditional dance “choros sta tria”

The dance phrase of “choros sta tria” consists of three 4/4 rhythmic meters, which correspond to three movement motifs. Each motif has two 2/4 movements, the first of which is always a support. All movements form in total three groups, which recur on the basis of a particular use of space (two motifs to the right and one to the left), with a slow and steady tempo (Dania, Vagenas & Tyrovola, 2013).

The reason for selecting these dances was that they could be categorically taught with add-on, or modification techniques to already mastered, basic 2-beat movement sequences. For example, the dances *Ai Giorgis* and *Karagouna* could be taught with the addition of two 2-beat sequences (each having a dance specific use of space) to the sequence of the dance “choros sta tria”, or the dances *Omal Kars* and *Lerikos* could be taught as modifications of “choros sta tria” in terms of the use of effort and shape of movement. This way of approaching dance content could give students the opportunity to realize that every new dance form could be classified as a structural and conceptual combination of already familiar movement sequences, something that could help them feel more comfortable and knowledgeable with the learning material.

In Table 2, detailed LANTD activity examples are provided as these were applied in the context of Greek primary school dance teaching. The focus of each activity together with its underlying nonlinear features are described in detail, with the purpose of documenting how traditional dance skills and concepts could be taught in a constraints-led manner, in order to increase young students’ competence and help them feel more eager to move and learn.

Table 2. *LANTD activities for traditional dance teaching and their nonlinear pedagogical features*

Goal	Activity Details - Description	Nonlinear Pedagogical Features
Movement Concept Recognition	1. Body parts Dance to the music using only the body part shown on the 1st Labankido© slide (familiar traditional kid songs with 2/4, 3/4, 4/4, 7/8 music meters). No reference to specific movements. 	1. Making changes to the musical beat introduces variability of practice (manipulation of task constraints). In this way students are challenged to maintain rhythm despite environmental changes. Non-specified movement guidance encourages divergent practice (i.e. more than one ways to achieve the same outcome) and facilitates self-organization of individual coordination patterns.
	2. Movement directions A foam square on the floor (personal space). Move to the beat in different directions starting from your square using 4-count locomotor patterns without reference to correct foot. Alternate between short and normal steps (small-medium Kinesphere).	2. In this activity students experience a) their own movement distances and pathway angles in relation to their three-dimensional physical space (Kinesphere) and b) different states of equilibrium while starting each time with their foot of preference. In this way they discover their personal best state of moving in space while synchronizing to the beat.
	3. Space levels & Leg Gestures All hold a parachute and perform 2-count alternating sequences (locomotor or non locomotor i.e. step-touch or step-kick) in different levels.	3. Manipulation of equipment and presence of others create a complex system focused on a particular movement outcome. Students start to realize that one change in the system will affect the performance of others. Implications for emotional and social learning.
	4. Relationships Plastic blocks on the floor. Students in pairs. One uses spoken direction words (i.e. side, back, cross, step, kick, touch, etc.), to guide the other over and through the blocks to the other end of the room.	4. Saying the words of a movement pattern helps memorization and subsequent recall. This cognitive-motor link facilitates conceptual understanding through the “feel” of basic movements. The opportunity for students to be the leaders of the activity encourages social interaction.
	5. Effort According to the “traffic policeman’s” sign, students “drive” while alternating 2 or 4-beat sequences. Even timing of movement. Changes between direct and indirect focus of movement. To make it more challenging different use of weight can be added to certain movements.	5. The alternative use of space and weight of movement creates challenging practice conditions to which the students must adapt as successfully as possible. The different focus of movement creates conditions of variability of practice. For this age group, the policeman analogy encourages knowledge exchange and skill development.

Table 2. (continued).

Goal	Activity Details - Description	Nonlinear Pedagogical Features
Rhythmic Practice	1. Combine locomotor or non locomotor movements to even rhythms Stamp on legs or stamp your feet or clap to the beat or bounce your knees up and down while performing 1-beat movements (even timing Greek traditional rhythms). 2. Alternate locomotor and non locomotor movements in 2 or 4-beat patterns. Perform in place or in space specified patterns that alternate locomotor and non locomotor movements without reference to correct foot. 3. Alternate sideward movements and gestures in 2-beat locomotor sequences. Use various directions All hold a parachute and alternate steps and gestures sideways. All stamp and shout on steps and lift the parachute up on gestures. 4. Alternate a 2-beat sequence with a different 2-beat sequence to perform 4-beat ones Individually first and then in a circle perform the basic pattern of “choros sta tria” (different combinations of 2-beat sequences). For more challenge add stylistic variations (i.e. leg bounce during steps, adjusted level of leg gestures and adversative use of space). 5. Adjust movements to quicker tempo or uneven timing In pairs or in small groups perform alternating 4-beat sequences with divided beats or with faster tempo. Start with different foot each time and change directions. Include pauses.	1. The existence of no definite rules for selecting movement type results in a less conscious control of movement form and a more conscious control of body rhythm. Attention is guided to rhythmic key-information. 2. Students’ engagement with multiple movement combinations and sequences (before learning specific combinations of steps) helps them understand the role of each type of movement in the final dance outcome. Representation and categorization of movement type (i.e. locomotor or non locomotor). 3. Students’ social interaction while experiencing different states of body balance and sound encourages the emergence of participatory educational structures within which each learner’s weaknesses are supported by other learners’ capabilities. 4. The individual practice of specific group performance outcomes provides those key affordances that are necessary for students to move from individual to group behavior (self-organization at a micro-level). The modifications of the task constraints (i.e. in terms of movement concepts such as body, space and effort use) encourage information-movement couplings. 5. Manipulation of rhythm and tempo of music (task constraints) causes states of instability of movement practice and provides controlled and content specific boundaries for motor exploration.

Table 2. (continued).

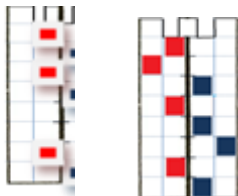
Goal	Activity Details - Description	Nonlinear Pedagogical Features
Labanotation use through Labankido© tutorials	1. Symbolize parts of the body on the 3-line staff The 3-line staff is presented as a “tower”. Pairs of students are given cards with different “towers” and are asked to “climb” on the top by performing what is drawn on the tower (no reference to specific directions). Practice without music, perform with traditional music.  2. Compose 4-beat sequences Students in small groups are given one Labanotation dice (each side of the dice with a directional step or support). Groups throw the dice 8 times and notate two 4-beat sequences. They practice their choreography and show it to the others. Whole class discussion and reflection. 3. Aural and visual processing ability Students watch a Labankido© tutorial featuring <i>Mr & Mrs Laban Little</i> who explain how the levels of movement are symbolized on the three line staff. 	1. The use of the “climb-up the tower” analogy encourages the reading of notation (from the bottom to the top) and emphasizes on the movement outcome (to dance), rather than on conscious control of movement form. The latter will be emphasized when students have discovered their own movement and coordination patterns and have begun to feel more skillful. 2. The dice game provides a situated learning context where students interact socially and learn to cooperate for the production of a group final movement outcome. The process of notating, choreographing and performing challenges students to develop perception-action couplings. Reflection and discussion on movement structure and technique facilitates cognitive, emotional and social development. Teamwork while learning to dance becomes a skill of paramount importance. The task of watching others and appreciating their work in light of lesson content encourages neighbor interactions and enhances students’ social skills. 3. The game-like environment of Labankido© encourages internal diversity and redundancy since students explore, experiment and engage in shared enjoyment to maintain coherence (i.e. to produce a common final dance outcome). The Little Laban figures are related to young students’ similar experiences of cartoon heroes or figures. Multiple levels to experience dance.

Table 2. (continued).

Goal	Activity Details - Description	Nonlinear Pedagogical Features
Labanotation use through Labankido© tutorials	Afterwards they practice in small group formations watching Labanotated sequences and a) clapping to the beat, b) saying aloud the movements and c) dancing.  4. Match the dance to its Labanotation graph. Students in small groups watch a video of dances that they already have been taught and try to match each dance to its Labanotation graph (simplified Labanotation). Afterwards they perform the dances and help their teammates who cannot perform the dance easily.  5. Dance from notation Students are given notation cards with unknown dances that have a similar structural type with the type of “choros sta tria”. They practice in small groups. Each group performs one of the dances separately and the others follow. Use of movement-concept language.	4. The simplification rule is very important for students to understand notation in terms of their level of cognitive development. Learners must perceive and interpret from video relevant movement information (related to movement concepts i.e. body, space, effort, relationships) in order to lead their dance decisions and actions. The small group formations make it possible for more capable students to compensate for less capable ones’ weaknesses. Such a context gives students the opportunity to learn from deviations and mistakes. 5. Students are given appropriate affordance to apply in practice what they have already learnt, under the knowledgeable guidance of their teacher. The potential for students to lead the group enhances self-esteem and decision making and makes knowledge and skills more explicit.

Discussion

Within primary education, and in order for students to develop and adopt a positive attitude towards traditional dance, it is essential for teaching to be organized on the basis of activities that promote unconstrained expression and meaningful practice. The activities outlined above (Table 2), provide a situated-learning environment for achieving this goal. Key features of all LANTD activities are movement practice variability and manipulation of structural task constraints (i.e. time, space, parts of body used and relationships between them), the use of analogies to facilitate conceptual understanding (i.e. dance towers, Laban Little people, traffic policeman, Laban dice etc.), skill practice on scaled-down versions of traditional dance choreographies (i.e. alternating and recurring 2 and 4-beat sequences, stylistic variations of already know dances), all taught within conditions of guided exploration and teacher support.

In all activities, the teacher's role is to modify task and environmental constraints according to students' developmental needs and interest and provide facilitative and not too prescriptive guidance. Activity rules, area of practice, number of participants involved, information sources, teacher's leadership style, colors, light and sounds of the practice area, all are determined in advance according to students' interest, skills and experience with the purpose of "boosting" their dance understanding and motor competence.

Movement concept exploration is set into the foreground and conditions of multisensory practice are promoted through movement, rhythm and notation games and exercises. Within the situated learning context of each activity, students are required to react kinesthetically (i.e. move to the rhythm or dance to notation), cognitively (i.e. match the dance to its notation, notate according to the dice and dance your sequence), socially (i.e. cooperate with your group, discuss and reflect on other groups' performance) and emotionally (i.e. lead your partner, win the game), to a variety of stimuli (i.e. audio, video, written, images, figures, peer student and teacher guidelines, etc.), which are combined so as to provide affordances for competent action. This variability of movement practice across different conditions is according to Davids, Button and Bennett (2007), a prerequisite of efficient motor learning since each learner uses specific coordination patterns and modes to achieve "similar for all" movement outcomes.

On this premise, the LMA movement language, combined with the Labanotation terminology enable dance discourse by providing students a common knowledge base which they can use to interpret old and new information. Interaction and social action are further facilitated by the use of group assignments which allow students to work collaboratively and compensate for one another's weaknesses (Hopper, 2010). With young children, this is an essential condition for the development of positive learning lesson attitudes and feelings of classroom accomplishment and enjoyment.

All activities presented in Table 2 are designed so as to accentuate similarities and differences among the practiced material, and facilitate movement recognition and sampling. Movement concepts are brought into the foreground so that students can: (a) recognize the content of the dances that are taught, (b) perceive how diverse but coherent responses comply with the basic lesson theme and, (c) focus their observations on movement structural elements while learning to perform them within dance motifs or choreographies. This nestedness creates a dynamic context for learning and interaction, which implies that each motif or choreography is part of a rule-bound complex system of movement concepts and skills, which can be performed either in a narrow or open way, depending on the content specific dance norm. Within these

processes students learn to categorically recognize how parts of the dance interact to create the whole or how refinements and adaptations to basic dance forms can lead to structural variations of already learnt choreographies. Jonassen (2003) states that this understanding is extremely important for novices who have the tendency to focus on the surface characteristics of the skills they are learning. In the present case, the structural representation of movement concepts within the form of dance choreographies provide affordances for knowledge transfer and help students help adapt more easily to the changing requirements of the learning environment (Atencio et al., 2014; Brymer & Renshaw, 2010).

Within LANTD, the “ideal” traditional dance performance is not stressed since emphasis is put on exaggerating the final game or exercise movement outcome (i.e. recognize the body parts, or combine locomotor and non locomotor sequences, or notate your dance, or react to audiovisual stimuli, etc.), within learning tasks that were neither too narrow nor too open (i.e. *perform in place or in space specified patterns that alternate locomotor and non locomotor movements without reference to correct foot*). Students are encouraged to explore the importance of each movement concept in the final dance outcome while transiting from one behavior to the other (i.e. to move, to concentrate and react, to read and notate, to cooperate, etc.). In each unit, the same movement outcome (i.e. supports and transference of body weight in space, movement directions) is practiced in many different ways (i.e. within movement games, rhythmic exercises, notation reading and dancing) that stress the same learning objective (i.e. to learn about the body moving in space). According to a dynamic systems’ perspective, this *repetition without repetition* (Bernstein, 1967) is determinant for complex systems to establish mature motor and cognitive coordinative structures.

Finally, the play-like environment of all activities provides multiple opportunities for cooperation and competition that addresses youngsters’ developmental needs for physical activity and social interaction (Lindqvist, 2001a). All LANTD game-play activities are designed developmentally so as to enhance students’ participation and competence, and help them circumvent potential performance barriers (i.e. difficulty of the skills to be learned, anxiety of performing before teasing classmates, their lack of self-confidence, or their fear of trying really hard without obvious improvement). According to Jenkins et al. (2006), such participatory educational structures, encourage students to learn from their deviations and mistakes and equip them with a self-organizing knowledge system, which is more than the daily knowledge that goes around (Davis & Sumara, 2008). In the case of dance, this system is so important for novice dancers to flourish, since it is less directed by the teacher and more by itself to perform, refine and finally learn the expected material.

Conclusion

For today’s primary students, traditional dance is a presentational process and product of second existence, performed outside its community of origin, firmly choreographed and learned by a teacher in classroom environments. On this premise, teaching traditional dance for the sake of installing ideal stylistic or cultural forms of movement can be problematic for students’ progress and motivation, especially in the case when behaviorist learning practices and overly prescriptive teacher guidance is used. The place of traditional dance in the school curriculum will be reconceptualized only when students approach it as a challenging but personally satisfying educational experience

and not as a series of strictly choreographed steps, which they have to learn quickly in order to be given time to play.

The above presented LANTD activities support this claim and further stress the need for the adoption of nonlinear pedagogical approaches during instruction. Such approaches equally value each learner's unformulated and enacted daily-life knowledge for the design of authentic learning environments that take existing constraints into account and support students in their search for meaning, knowledge and understanding.

In the present article emphasis was put on how a constraints-led framework could provide a relevant framework for the implementation of nonlinear pedagogies in the dance classroom. The empirical examples from Greek traditional dance teaching were structured and implemented so as to be used as showcases and specific practical recommendations to this direction. Future research works could use this empirical work to investigate how the manipulation of task, performer and environmental constraints could possibly influence the interaction between students' willingness and competence to dance in traditional rhythms. Being based on the key pillar of culture representation and movement awareness such an undertaking would shed valuable light on issues relevant to structuring appropriate dance learning interventions in our schools.

Notes

¹ Dynamic Systems Theory (DST) is a theory that has originated in the fields of physics and mathematics attempting to describe the flow of relationships among the components of a whole phenomenon (i.e. solar system). Applied to the study of motor behavior, DST proposes that movement is produced from the interaction of multiple sub-systems within the person, task and environment, all of which self-organize and interact in order to produce task specific movement solutions within conditions of performance variability. This person-in-context variability provides important information for understanding: a) motor behavior, as multiply determined by skills, intentions, task and setting characteristics, and b) development, as a non-linear and dynamic process of self-organization and change.

² Complexity theory is an interdisciplinary theory that grew out of systems theory in the 1960s and examines the uncertain and non-linear dynamic networks of interactions between complex systems (i.e. systems that are diverse, adaptive and made up of multiple interdependent sub-systems or elements) and their environment.

³ 106 second-year university students (men and women 20-22 years old), beginners in Greek traditional dance, at the Faculty of Physical Education and Sport Science, of the National and Kapodistrian University of Athens, in Greece, took part in this research. According to the university curriculum, the participants were divided in two groups: experimental group A and experimental group B and were taught Greek traditional dance separately by the same teacher, with the use of different teaching methods. The LANTD method was used with experimental group A (52 participants men and women) and a command-style teaching method was used with experimental group B (54 participants men and women). Dance performance of all participants was evaluated three times during the research, according to a specially devised dance performance assessment instrument (Dania et al., 2014). The results showed that the intra-person dance performance improvement, of both men and women dancers of experimental

group A [$\chi^2 = 24.20$, $p = .000$], was statistically significant, while a similar improvement was not apparent for experimental group B (Dania, 2013).

⁴ The dances' names were: Kales from Skyros island, Kamakaki from Salamina island, Fast Hasapikos from Macedonia, Mazomenos from Lesvos island, Neratzia from Epirous, Ai Giorgis from Corfu, Omal Kars from Pontos, Siganos from Crete Island, Lerikos from Leros Island, Karagouna from Thessaly.

⁵ The term "choros" in Greek means dance and the term "sta tria" refers to the three meter rhythmical and movement schema of the particular dance.

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