

Rhythmic gymnastics and dyslexia: a two-year preliminary case study

SENATORE BARBARA¹, D'ELIA FRANCESCA²

^{1,2} University of Salerno, ITALY

Published online: November 30, 2018

(Accepted for publication November 20, 2018)

DOI:10.7752/jpes.2018.s5320

Abstract:

Rhythmic gymnastics is a technical-composite sport characterized by the "small tools" that are: rope, hoop, ball, clubs and ribbon. On individual program, the competition includes the use of four of the five equipment used in this sport and, in turn, one of them is left out: for example, during this four-year Olympic period, the rope was kept out. Dyslexia is essentially the failure development of hemispheric dominance or conflicts of dominance between the two hemispheres, so it carries out problem about reading.. In addition to having learning problems, people suffering from dyslexia also have problems with cognition of their bodies within the space and with musical rhythm. In addition to having learning problems, people suffering from dyslexia also have problems with cognition of their bodies within the space and with musical rhythm, in fact in points 3.3 and 3.4 we will deal with this aspect. The aim is to check out the data results on three aspects after two past years of workout on rhythmic gymnastics: 1) body coordination with rhythmic gymnastics tools; 2) the perception of her body within a well-defined space; 3) acquisition of a greater self-esteem of oneself, both in relation with one's her body and with her classmates. Methods are case study and ethnographic approach adapted for observation of situation.

Key words: ethnographic, technical-composite, FGdI, logbook, coordination, reading, fluency.

Introduction

Rhythmic gymnastics is a technical-composite sport characterized by the small tools, similar to aerobics one (Raiola et al., 2013a) and to artistic one (Raiola et al, 2013b) that are: rope, hoop, ball, clubs and ribbon. On individual program, the competition includes the use of four of the five equipment used in this sport and, in turn, one of them is left out: for example, during this four-year Olympic period, the rope was kept out. The technical and choreographic compositions of the individual gymnasts are performed on music ranging from 1.15 to 1.30 minutes and the gymnast must perform jumps, rotations and balances as well as risks, and then continue with masteries and finally dance steps.

To the team championship, five gymnasts take to the platform, who, together, make movements in synchrony as if they were a single gymnast. They must perform jumps, rotations and balances, risks, collaborations, tool exchanges and dance steps. Another characteristic of the team composition is that the gymnasts, besides performing the exercises on a music that can go from 2.15 to 2.30 minutes with aerobic anaerobic stress (Montesano, Mazzeo, 2018), presents a routine of two exercises and these routines can be: one with all the same tools and one in which the tools are mixed (for example two ribbons and three balls, two circles and three pairs of clubs). The psycho-pedagogical aspects of rhythmic gymnastics are important for the social inclusive paradigm (D'Isanto, 2016, D'Isanto, Di Tore, 2016, Paloma et al, 2012). The bible of each rhythmic gymnastics technician is the score code (CdP) and competitions are held on a platform 13x13 meters (FGdI, 2018).

Dyslexia is essentially the failure development of hemispheric dominance or conflicts of dominance between the two hemispheres (Nicolson, Fawcett, 2009) but it is reductive to translate it into these terms and gives several problems in reading fluency (di Tore et al., 2015). "If all this is not understood, one ends up observing dyslexia only as a problem and neglects all the potential that can be and must emerge [...]. The extraordinary aspect of dyslexia is precisely this unique mixture of talents and difficulties and if all this isn't understood and focuses attention only on the difficulties, the results that will be obtained will be those of creating continuous suffering and frustration that will push these people to make educational choices and in general low level life and that don't corresponds at all to their real potential" (Grasselli, 2007).

In addition to having learning problems, people suffering from dyslexia also have problems with cognition of their bodies within the space and with musical rhythm (Valentini et al. 2018, di Tore et al., 2017). This binomial situation is inside the new conceptual evidence about cognitive paradigm (Di Tore et al., 2018, , Raiola, Di Tore, 2017, Raiola, 2014, Di Tore, Raiola, 2012) opposite to ecological one in traditional way (Tore et al 2018). The aim is to check out the data results on three aspects after two past years of workout on rhythmic

gymnastics: 1- body coordination with rhythmic gymnastics tools (Raiola, 2017); 2- the perception of her body within a well-defined space (Raiola, 2013); 3- acquisition of a greater self-esteem of oneself, both in relation with one's her body and with her classmates (Altavilla et al., 2015).

Methods

The form of the study is preliminary study (Trochim, 2009). It is an initial exploration of issues related to a proposed quality evaluation; because of it does not happen in all systems but they may be used to identify key features to be addressed in a quality process. In this case, it will be useful to open the assessment process on specific human and social approach study. The method used is called case study according to Laurence Stenouse (Wratt, 1983). How does it work? A set of ways of doing research that have in common the decision to focus the cognitive investigation on a "situation" that may be indicative of a larger set of problems. The observation was purely direct and participatory, but the question is: how is the case study prepared?

- choose a situation that really happened;
- collect most of the information on the situation identified;
- the material collected is processed, it is sorted logically and sequentially;
- a draft of the case is drawn up;
- information that can cause confusion is eliminated;
- the missing elements and information are identified for a complete understanding of the case;
- the case drawn up is examined by an expert who may recommend any corrections or additions;
- a description of the case is drawn up and any documents referred to in the description are attached;
- a record is prepared for the presentation of the case and for its discussion.

Observation team: sensitive observers

- coach; family; two classmates

All together carry out the data after consultation themselves.

Results

Logbook: the first year

With her group, she was training on Tuesdays, Thursdays and Saturdays from 4:00 p.m. to 5:30 p.m., so we organized ourselves in this way:

- Tuesday: she works on herself, the gymnast was my "helper". I used this technique because so with the aim of having to demonstrate the exercises to the classmates I could correct small errors or repeat the parts that she didn't understand without making her feel uncomfortable;

- Thursday: she works in her world, the gymnast was with her teammates, but if sometimes she stopped during the course of an exercise she was not made to notice the error, leaving her calm to refine the technical gesture learned from the previous lesson;

- Saturday: working with the group, the gymnast was paired with another of her classmates so as to be able to carry out the assigned tasks together.

This work went on for three months, but:

- the gymnast doesn't integrate with the group;
- at the first competition the gymnast carries out her free hands exercise outside the red line that delimited the carpet despite she knowing that she didn't have to overcome it;
- at the second competition, after a two months work, the gymnast came out the same off the carpet, but after noticing it returns to carpet and she has her routine inside it;
- after another month of work, at the third competition experience, the gymnast finally doesn't come out of the carpet.

However, with the tools, the coordination continued to defy, resulting in less than a child of five years (the youngest gymnast had the same degree of experience and training). Logbook: the second year

Problems aside, after having faced some familiar situations with me, her coach, the gymnast begins to be almost equal to a competitive gymnast and then it is decided to promote her in the agonist sector. The training sessions were Monday, Wednesday and Friday for three hours, while on Tuesday and Thursday two hours, but for the subject suffering from dyslexia was used a different calendar:

- Monday: flexibility work and free body mobility, while the rest of the group used the rope. During the last part of the training, instead, I let her study the body difficulties (jumps, rotations, balances) with the tool, so the coordination was the same stimulated, but in a lesser way than the group.

- Tuesday: Classical dance lesson with her group. The subject presented difficulties during the sequences of dance steps so my task was to assist the dance teacher in order to simplify the lesson.

- Wednesday: it was her day of rest.

- Thursday: I work with the group. The training was almost similar to Monday's, but during the warm-up she was allowed to use the rope, with poor results.

- Friday: the whole lesson was dedicated to the study of the compositions.

After a semester of work comes the time of the first competition and the gymnast after performing an excellent free body (specialty of the previous year), during the second routine with the ball can't coordinate the dribbling of the tool during the jump and therefore is not attributed the difficulty. At the end of the competition, despite the mistake, she managed to place eighth out of twenty-six participants at 0.60 from the podium, a result that bodes well for the second round. After working another six weeks, the gymnast in the second race wins the bronze medal without making any mistakes in the race.

TECHNICAL ASSESSMENT EXERCISES			
<i>Gymnast coordination ability with dyslexia with free hands and with tools</i>			
<i>Typology</i>	<i>Correct performance</i>	<i>Possible assistance</i>	<i>Gymnast's response</i>
a. Corporal coordination	During warm-up exercises, alternate right leg with left arm and vice-versa.	Playing robots and reacting with the upper limb opposite to the lower one.	To the first five months, she struggled to understand the mechanism, but once she had taken the "game" to heart, she began to respond well to the exercises.
b. Musical coordination	Dance lessons were based on the study of the rhythmic steps to be inserted during the compositions.	Vocal accents on certain movements, for example: "LA" when it had to stretch upwards; "EEE" when I had to stop; etc...	The subject struggles to follow the group to the first two months. Once she learned the voice commands, she starts to improve, but it will take almost a year before the performance is almost perfect.
c. Coordination with rope	Warm-up and technique: jumps and little jumps; oscillations; crossings; echappé; rope closed, passages under the legs; throws and shots.	Accompanying the movements of the gymnast. Doing exercises with her as if she were in front of a mirror.	The gymnast, despite two years of use of tools, she finds always difficult, exchanging the direction in which the rope must turn or even the worktops of the tool.
d. Coordination with hoop	Technique: crossings; rotations; rolls; rotations around a part of the body or around its own axis; throws and shots.	Accompanying the movements of the gymnast. Doing exercises with her as if she were in front of a mirror.	The gymnast's progresses a bit later than the group, but achieves the same goals, even if the time of refinement of the technical gesture is always very slow with a great initial inaccuracy.
e. Coordination with ball	Technique: rolling movements; eight-movements; oscillations; dribblings; throws and shots.	Accompanying the movements of the gymnast. Doing exercises with her as if she were in front of a mirror.	The gymnast progresses a bit later than the group, but achieves the same goals, even if the time of refinement of the technical gesture is always very slow with a great initial inaccuracy.
f. Coordination with clubs	Technique: rounds; circumscisions; asymmetrical movements; moulinets; throws and shots.	Accompanying the movements of the gymnast. Doing exercises with her as if she were in front of a mirror.	The first year she confuses laterality; the second year she starts to understand it and she shows little progress.
g. Coordination with ribbon	Technique: circumscisions; spirals; coils; throws and shots.	Accompanying the movements of the gymnast. Doing exercises with her as if she were in front of a mirror.	The gymnast progresses a bit later than the group, but achieves the same goals, even if the time of refinement of the technical gesture is always very slow with a great initial inaccuracy.

Small improvements

- beginning of the awareness of one's own abilities;
- self-esteem of one's own person;
- increased concentration;
- increased body and music coordination;
- inclusion in the working group;
- greater interest in understanding whether his work was right or wrong;
- improvement of coordination with the ball;
- discreet handling of circle and tape.

Without improvements

- poor coordination with the rope;
- mediocre work with clubs.

Discussion

Stress conditions did nothing that put pressure on the subject bringing imbalances at the level of management of her own person within sporting and relational context. Once this barrier had been overcome, the gymnast began to find benefit and not to take errors as a reason for inequality, but as a starting point from which to start working even more.

Conclusions

Rhythmic gymnastics is a really selective sport, but in this case the barriers that have been raised have been broken down by a lot of power and determination. In addition to working on herself, the gymnast has found benefit by relying on a figure who believed in her and her potential and I think she believed so much in herself because to the first time she was not treated as "being different", but as an ordinary person who was in that environment to play a sport. The fact remains that she will always have her small problems of orientation as well as learning or coordination, but I believe with so much practice can be overcome and I also believe that being well in an environment and feel at home is the first step for a long way. (Mantovani, 2014)

Surely, however, the physical and mental well-being is not enough to make a person suffering from dyslexia an excellent example of an athlete, but the analysis made must be accompanied by a very slow and gradual work compared to a normal athlete (D'elia, et al, 2018). Reconnecting to what is mentioned according to Grasselli, that it is the task of each coach to try to bring out all the best qualities that every athlete (amateur or not) has within himself, remembering that you have to deal with people who may be more or less extrovert or awkward with feelings that if we can not understand us, their points of reference (because that's what we become after you spend hours and hours in contact with them), no one else can understand.

References

- Altavilla, G., Furino, F., Marika, D.P., Raiola, G. (2015)Physical skills, sport learning and socio-affective education [Fizičke vještine, sportsko učenje I društveno-afektivno obrazovanje] Sport Science, 8, pp. 44-46
- De Grandis, C., (2007) La dislessia: Interventi della scuola e della famiglia, Erickson, Trento, Italy
- D'elia, F., Mazzeo, F., Raiola, G. (2018)The core curriculum in the university training of the teacher of physical education in Italy, Journal of Human Sport and Exercise, 13, pp. S413-S420.
- D'Isanto, T. (2016)Pedagogical value of the body and physical activity in childhood [Pedagoška vrijednost tijela i tjelesne aktivnosti u djetinjstvu] Sport Science, 9, pp. 13-18.
- D'Isanto, T., Di Tore, P.A. (2016)Physical activity and social inclusion at school: A paradigm change, Journal of Physical Education and Sport, 16, pp. 1099-1102.
- Di Tore, A.P., Raiola, G., D'Isanto, T. (2018)Situation awareness in sports science: Beyond the cognitive paradigm [Situacijska svijest u sportskoj nauci: Van kognitivne paradigme]Sport Science, 11 (1), pp. 44-48
- di Tore, P.A., Raiola, G., Altavilla, G., Gervilli, M.G., Pignato, S., Lipoma, M. (2016)Visual motor skills and reading fluency: A correlational study, Journal of Human Sport and Exercise, 11 (Proc1), pp. S233-S238.
- Di Tore, P.A., Raiola, G. (2012) Case study on physical education and sport in Naples, Italy, Mediterranean Journal of Social Sciences, 3 (11), pp. 471-476.
- FGdI Federazione Ginnastica D'Italia (2018) Procedure Federali e Norme Tecniche, Rome, Italy
- Grasselli, B., (2012) Leggere la dislessia. Resilienza, riconoscimento, Armando Editore, 2012.
- Lawton, D., (2004) Stenhouse, Lawrence Alexander 1926–1982, Oxford Dictionary of National Biography, Oxford University Press, USA
- Mantovani, C., (2014) Insegnare per allenare, SDS Edizioni, Roma, 2014.
- Montesano, P., Mazzeo, F. (2018)Pilates improvement the individual basics of service and smash in volleyball, Sport Mont, 16 (3), pp. 25-30.
- Nicolson R.I.,FawcettA.J.(2009)Dyslexia,dysgraphia,procedural learning and the cerebellum,in Cortex,vol47,n1

- Paloma, F.G., Carlomagno, N., Galdieri, M., Sgambelluri, R., D'Elia, F., Sibilio, M. (2009) Incidence of neuroscience on the psychopedagogy relation corporeity/learning [Učestalost primjene neuroznanosti u psihopedagoškim odnosima: Tjelesnost/učenje] *Sport Science*, 2 (1), pp. 7-16.
- Raiola, G. (2017) Motor learning and teaching method, *Journal of Physical Education and Sport*, 17, art. no. 236, pp. 2239-2243
- Raiola, G., Di Tore, P.A. (2017) Motor learning in sports science: Different theoretical frameworks for different teaching methods [Motoričko učenje u sportskoj znanosti: Različiti teorijski okviri za različite metode poučavanja] *Sport Science*, 10, pp. 50-56.
- Raiola, G. (2014) Motor control and learning skills according to cognitive and ecological dynamic approach in a vision on behaviorism, cognitive, Gestalt and phenomenology theories, *Mediterranean Journal of Social Sciences*, 5 (15), pp. 504-506.
- Raiola, G. (2013) Body knowledge and motor skills, *Knowledge Cultures*, 1 (6), pp. 64-72.
- Raiola, G., Giugno, Y., Scassillo, I., Di Tore, P.A. (2013a) An experimental study on Aerobic Gymnastic: Performance analysis as an effective evaluation for technique and teaching of motor gestures, *Journal of Human Sport and Exercise*, 8 (2 SUPPL), pp. 297-306.
- Raiola, G., Scassillo, I., Parisi, F., Di Tore, P.A. (2013b) Motor imagery as a tool to enhance the didactics in physical education and artistic gymnastic, *Journal of Human Sport and Exercise*, 8 (2 PROC), pp. 93-97.
- Tore, A.D., Altavilla, G., D'Isanto, T. (2018) Situation awareness in sports science: Beyond the cognitive paradigm, *Sport Science*, 11 (1), pp. 25-28
- Trochim, W.M.K. (2009) "Structure of Research" *Research Methods Knowledge Base 2nd Edition*, Cornell University press.
- Wragg, T. (1983) Lawrence Stenhouse: A Memorable Man, *British Educational Research Journal*, Vol. 9, No. 1
- Valentini, M., Bernardini, C., Beretta, A., Raiola, G. (2018) Movement and language development as an early childhood twin strategy: A systematic review *Sport Mont*, 16 (3), pp. 107-112