

Come migliorare la Coordinazione Motoria oculo-manuale in un esempio dimostrativo nella pratica del Basket e della Pallavolo

How to improve ocular-manual Motor Coordination in an developmental example, through the practice of Basketball and Volleyball

Francesco Perrotta

Professor of Education And Educational Sciences, University of Lubljana (SLO)
francescoperrotta@msn.com

Lorenzo Donini

University of Naples "Parthenope"
lorenzo.donini@uniparthenope.it

Abstract

Ocular-manual coordination can be defined as the ability that allows us performing tasks involving the use of both our eyes and hands at the same time. We use our eyes for direct attention and our hands to perform a certain activity. Ocular-manual coordination is a set of cognitive abilities, and should guide our hand movements based on sight and feedback. The development of ocular-manual coordination is particularly important for normal child development and school learning. It is key for the development of literacy and, moreover, we use it in an infinite number of activities of our daily life, such as when we cook, draw, insert the credit card into the ATM, type on the keyboard of the computer, launch and/or collect items. In fact, when we drive, we use ocular-manual coordination in an un-interrupted way: based on the information on the journey we perceive through the eyes, the hands constantly act on the steering wheel.

Almost all the activities of our daily life require this type of coordination, so it is important to stimulate and improve it. It is usually stimulated in preschool and childhood for the development of thin and thick psychomotor skills, but it is also crucial in adulthood.

Keywords

Basketball, Volleyball, Propriocettività, Coordinazione
Basketball, Volleyball; Proprioceptivity, Coordination

1. Purpose of our study

The purpose was to analyze the way to improve ocular-manual motor coordination, in a developmental example, through the practice of basketball and volleyball.

This type of motor activity is very specific, and the purpose of our review was to create a broader vision, trying to combine the theory of studies and practice of the exercises as shown in the figures (Figure 1, Figure 2, Figure 3, Figure 4, Figure 5, Figure 6, Figure 7) through a specially selected collection of texts.

2. Recent findings

The first thing to consider is that ocular-manual coordination can also fail if the person's sight or eyes are intact, and can even fail if muscle or motor control is functioning properly. A child went to an eye doctor and was told to have perfect vision. Although this, he was told he had problems with ocular-manual coordination. Direct ocular-manual coordination disorder affect only the ability to work together by visual system and motor systems.

Furthermore, any alteration of the visual or motor systems could significantly impair ocular-manual coordination. Visual or muscular impairments like strabismus, amblyopia, muscular hypotonia, postural imbalance or cross lateral disorders can cause problems with this cognitive ability. Furthermore, brain injuries that alter the motor or perceptual areas can cause ocular-manual coordination problems.

The consequences of suffering poor ocular-manual coordination can affect a lot of activities. These problems can lead to developmental disorders and learning difficulties in academic settings; professional fields are damaged (if there are problems when writing a computer or assembling parts, the efficiency of the work is reduced) and this causes problems to our daily activity .

Coordination and rehabilitation mode

Ocular-manual coordination rehabilitation is based on brain plasticity. Basketball and volleyball aims at rehabilitating problems related to ocular-manual coordination and to other cognitive functions. The brain and its neural connections are strengthened use of functions, which are possible thanks to their activity . Therefore, even if eye-motor coordination is often trained, connections of the brain structures involved in this ability will be strengthened. So when we need to coordinate any behavior that involves both our eyes and our hands, the links will be faster and more efficient, improving the performance of such behaviors.

These sport activities (Basketball and Volleyball) must made up of a team of professionals specialized in the study of synaptic plasticity and neurogenesis processes. This has enabled the creation of cognitive stimulation programs tailored to the needs of each user. This sports begins with an accurate assessment of ocular-manual coordination and other basic cognitive functions. Based on the results of the assessment, volleyball and basketball stimulate the use of hands in such a way as to increase the cognitive assessment level, and strengthen the eye-motor coordination and other cognitive functions, deemed necessary based on the assessment.

Consistent training and education are essential to improve ocular-manual coordination. Basketball has evaluation and rehabilitation tools to optimize this cognitive function. For a correct stimulation it takes 15 minutes a day per two or three days a week.

Example of Routines:

- start dribbling all over the field by avoiding the circles (avoiding the circles will be the rule to be respected in each step)
- dribbling by defending the ball and trying to touch that of others
- dribbling by trying to touch the back of the companions
- dribbling and exchanging the ball with a companion whenever wishing for it

- dribbling only with the right hand
- dribbling only with the left hand
- combined dribble with an acoustic command: 1 whistle with the right hand, 2 whistles with the left one
- dribbling and whistling within in a circle; at the subsequent whist, getting out of it and keeping dribbling
- dribbling and high-fiving a partner
- dribbling and shaking a partner's hands
- dribbling in pairs, making the others do it accordingly
- dribbling in pairs, making touch us the others who are behind us

Other Example are showed in this figure

Figure 1: Purpose: hitting another ball with a ball thrown up by a companion

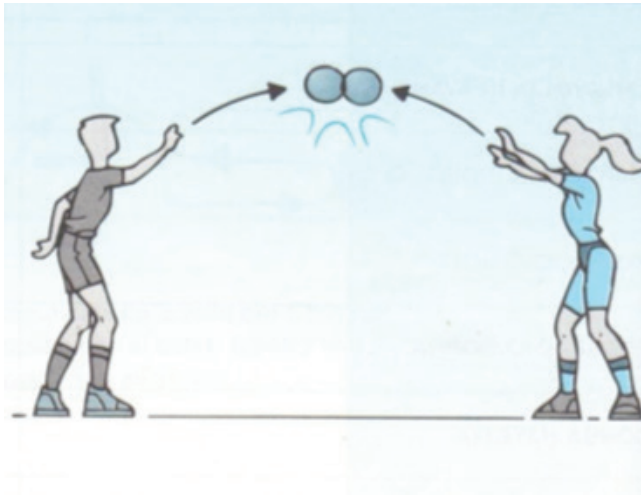


Figure 2: Purpose: hitting targets with the ball

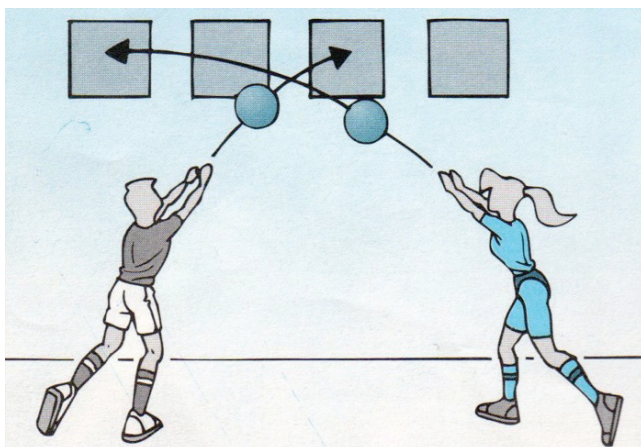


Figure 3: Purpose: Dribbling against the wall, like in volleyball, even supported by a partner

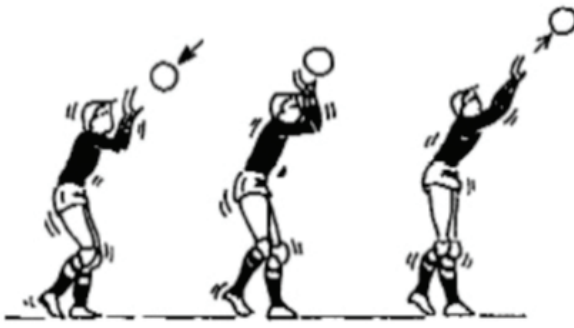


Figure 4: Purpose: Running and jumping over small obstacles, by keeping dribbling on the ground

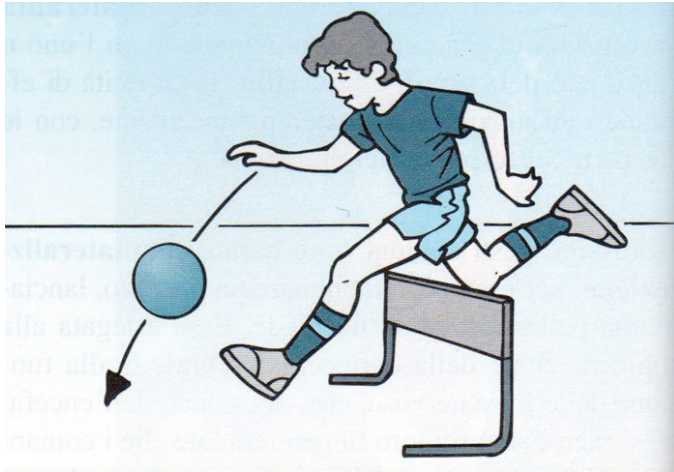


Figure 5: Purpose: Running and dribbling on the ground

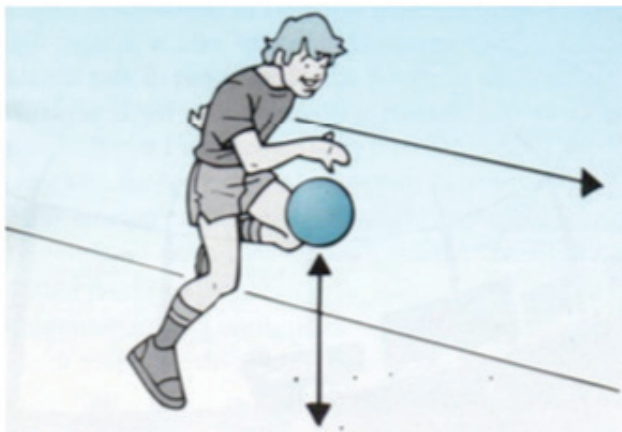


Figure 6: Purpose: Throwing the ball at the teammates in various ways

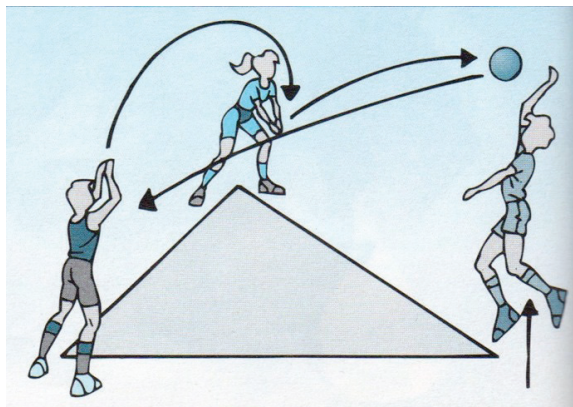
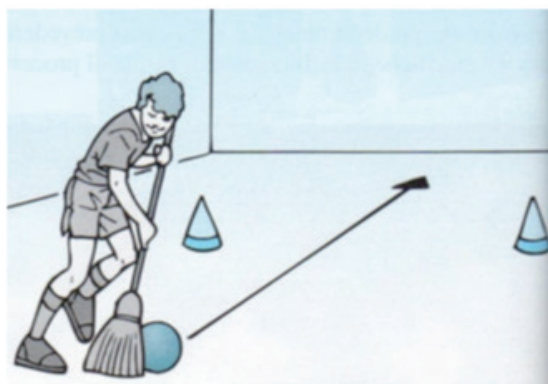


Figure 7: Purpose: throwing the ball with a broom



Conclusions

Ocular-podalic coordination can be trained through these exercises, by using the ball in group disciplines like basketball and volleyball.

In addition, this type of activity also strengthens the individual in his/her social relationships with others, making this type of work also suitable for socializing and making new friends.

References

- Ambrosini C., Pellegatta S. (2013). The game in development and psychomotor therapy. Edizioni Centro Studi Erickson: Trento.
- Berthoz A. (2011). The simplicity. Editions Code: Turin.
- Bruner, J. S. (1991). Early stages of cognitive development
- Le Boulch J. (1992). Psychomotor development from birth to six years. Educational consequences of psychokinetics in school age. Armando Editore: Rome.
- Meinel K. (1955). Movement theory. Sketch of a theory of sports motive under the pedagogical aspect. Sports Press Society: Rome.

- MIUR (2012). National guidelines for the nursery school and the first cycle of education. *Annals of Education*.
- Pellegrini R., Dongilli L. (2010). *Teaching to write: pregraphism, printed and italics*. Erickson: Trento.
- Piaget, J., Inhelder B. (1976). *The representation of space in the child*. Giunti Barbera: 8)Florence.
- Rossi P. G., Rivoltella P. (2012). *The didactic action. Manual for the teacher*. The School: Brescia.
- Sibilio M. (2002). *The intelligent body*. Simone SpA: Naples. Sibilio M. (2014). *The teaching is simple*. Liguori: Naples.
- Vayer P. (1974). *Psychomotor education in school age. 500 Oculo-Manual coordination Exercises*.