THE VIDEO-ANALYSIS IN THE EDUCATIONAL-DIDACTIC PROCESS IN THE YOUTH SPORT

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ABSTRACT

This study derives from a precedent one regarding the use of video-analysis as an educational tool for learning the technical skills of futsal in a group of children aged 9-10 years, they practice it to competitive level. This study uses the video-analysis post-competition to motivate children to acquire psychological and social abilities, that could affect on pleasure (McAuley & Blissmer, 2002), on self-esteem and on self-efficacy (Felz, 1992). Therefore, the aim is to adopt the video-analysis in the educational process to help players to live all together in sport (Raiola, 2008).

The method is the study of integrated case with experimental one, comparing the data of begin with end activity between the sample group and the control group. The data are recruited by the following instruments: the register of the boys frequencies in the sample group compared to the control group; a questionnaire on satisfaction, on self-esteem and on self-efficacy drawn up by the coach, the researcher and a parent, and technical skills test assessment in the precedent study.

The results are increase of the assiduousness to the trainings (+3%); increase of the satisfaction, the self-efficacy and the self-esteem (+5%), and improvement of technical skills (+7%). The study shows the effectiveness of the use of video-analysis in the educational process and the prospective of further research involving the development system of the teaching method with the use of technologies. It would be useful in educational activities and didactic organization of a specific space to investigate the issue.

Keywords: learning skill, self-efficacy, self-esteem

INTRODUCTION

On the qualitative aspect, the futsal is a sport where the time variable is very important in the control of motor learning process (G. Raiola, 2012). It is particularly suitable to the development of motor skills unique to the technical characteristics of the game, such as the rules and the field of play for which the time to analyze, evaluate, elaborate, and execute is limited when compared to other team sports (Schmidth & Wrisberg 2008). Futsal is particularly adapted for children, ages 8-10 years, who are learning the specific techniques of play. The technical learning is represented by a set of processes (internal and external), associated with practice or experience leading to relatively permanent changes in capability for movement (Schimdt & Lee 2005) and the individual potentiality. The imitative learning revolution, brought about by the discovery of mirror neurons (Gallese, Keysers & Rizzolatti 2004), is in the ability of these neurons to activate both processes: perceptive and motor. A number of studies have shown that when we observe actions performed by others with his mouth, hand, or foot, we activate our motor system regions of the fronto-parietal corresponding to those that come into play when ourselves perform actions similar to those that we observing (Rizzolatti & Craighero 2004).

This void, that we could call “post-discovery”, it is the space to which we will go to insert our research, consistent in to use the recent discoveries in neuro-cognitive-learning (Cattaneo &, Rizzolatti, 2009), in methodological routine for the sporting teaching in young players, as well as in to find an operational model way to analyze and to value the quality of the technical learning.

METHOD

A sample of futsal team of children 9-10 years old splitting in control and experimental groups, after a pre-assessment, performed by technician, about technical skills through by evaluation grid prepared “ad hoc” on technical fundamentals taken into the study (oriented control of the ball with the bottom foot; driving the ball with the sole; shooting ball with tip shoot) to form two homogeneous groups (Experimental group n = 10, control group n = 10). Experimental group using modeling video performed by a player of National Italian Futsal Team could lead to significant changes in technical skills. Experimental group used to meet 30 minute before training, just for watch the videos, analyzed by the coach. After video they had practice the workout all together with control group as planned from coach in weekly educational planning. Both groups were videotaped in the execution of sport skills and evaluated, through a check list made by futsal indicators and evaluating in four level of descriptors (observing position of: dominant foot, working leg, support leg, trunk, arms) for each technical fundamentals, by technician every three months, watching their video in post-performance using Kinovea software. The study was been divided into three phases (input, ongoing and final). Each of these was evaluated in qualitatively and quantitatively way by the technician/researcher, and it was preparatory to subsequent stages. The first phase starting from the execution model we have analyzed the most common errors of the players through the comparison of post-performance players video. In this phase were analyzed and discussed videos of all the players suggesting where necessary to improve the technical implementation. The video of the executive model has been shown in all classes of the sample group, after a general introductory video with music and images, to search for the relaxation and increasing the concentration and motivating the group. The second phase is based on a video comparison between the individual performances of the players in the first two records, highlighting the level of improvement or worsening of technical skills. We also carried out an initial comparison between the performances of the two groups. The third, and final phase, showed after the evaluation of the third technical recording performances of the players, the incidence of the sessions of video analysis and the use of the executive model to the learning of specific technical gestures in Futsal compared with custom methodology based on the continuous repetition of technical gestures only in the field during the trainings.

RESULTS

After analyzing the data from evaluation grid of the technician in the first phase *(Fig.1)* and divided the group into two homogeneous micro-groups *(Fig.1.1)*, we compared the findings of the second phase of assessments highlighting the improvements of individual members of the sample in comparison to the starting point *(Fig.2).* From the data it was possible to also appreciate the improvement in the average of the sample group (+7.1%) compared *(Fig.2.1)* to the control group (+2.5%). In particular, the second assessment showed a significant improvement in particular of those players of simple group, that in the first evaluation (input), they showed a good starting level (+11%) and a greater difference (> 5%) between the sample group than the control group *(Fig.2.2)***.** The third evaluation phase data showed, in particularly in final trainings, a minimum improvement (+2.1%) compared with ongoing phase that gave a maximum improvement *(Fig.3),* while a substantial balance in the control group with a medium improvement of 2% in every phase of training program. The third data compared with first data showed the great difference *(Fig.4)* between two groups, in particular experimental group got a biggest average improvement (+9,2%) than control group (+4,5), more than twice the amount.

SIMPLE GROUP

ANALYSIS THREE TECHNICAL GESTURES				
Technical gestures	Oriented sole control		Shoot	Driving the ball
SPECIFIC TECHNICAL	*To left side*	*To right side*	*By tip*	*Moving the ball with the sole*
Player 1	17	17	15	19
Player 2	15	15	19	18
Player 3	17	16	15	16
Player 4	13	18	13	17
Player 5	14	16	14	17
Player 6	16	14	12	13
Player 7	10	15	13	12
Player 8	13	9	13	11
Player 9	8	9	12	11
Player 10	8	9	14	8

CONTROL GROUP

ANALYSIS THREE TECHNICAL GESTURES				
Technical gestures	Oriented sole control		Shoot	Driving the ball
SPECIFIC TECHNICAL	*To left side*	*To right side*	*By tip*	*Moving the ball with the sole*
Player 1	18	16	17	20
Player 2	18	15	19	16
Player 3	16	18	13	15
Player 4	16	13	12	19
Player 5	15	12	14	15
Player 6	12	12	15	12
Player 7	12	13	13	12
Player 8	12	9	11	11
Player 9	11	8	12	10
Player 10	8	9	14	8

<10	low
>11-15<	medium/low
>16-20<	medium/high
>21	high

Fig. 1
(1th Phase) Evaluation grid of the technician: Data in input phase of Simple Group and Control Group

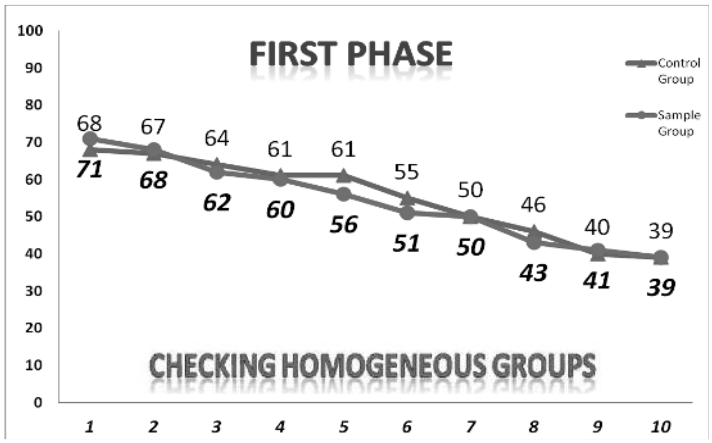


Fig. 1.1
Evaluation data input and division of the group into two homogeneous microgroups

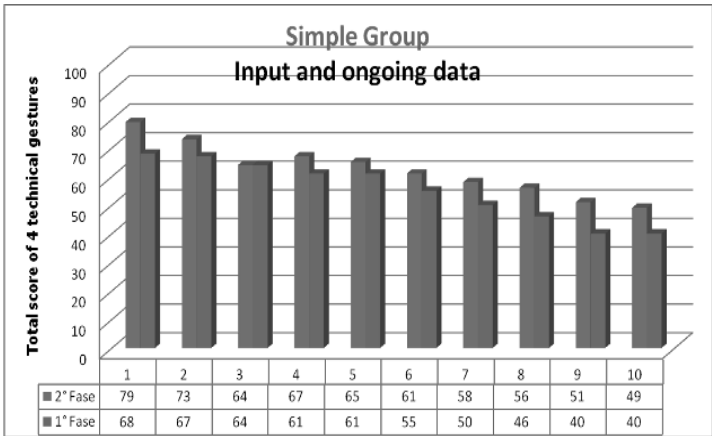


Fig. 2
(2nd phase) Comparison of the assessments in the sample group of observations
in input and ongoing with an average improvement of +7.1%

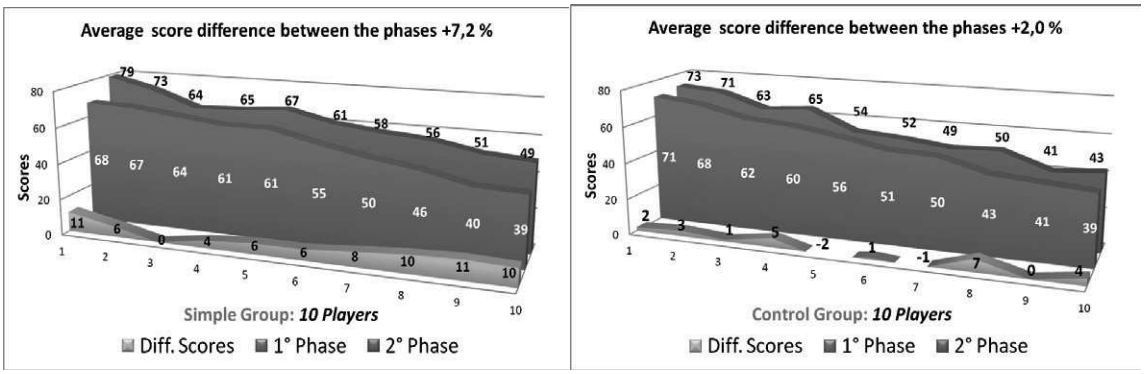


Fig. 2.1

(2nd phase) Comparison of the average score differences between the phases in two groups (+7.1 vs +2.5)

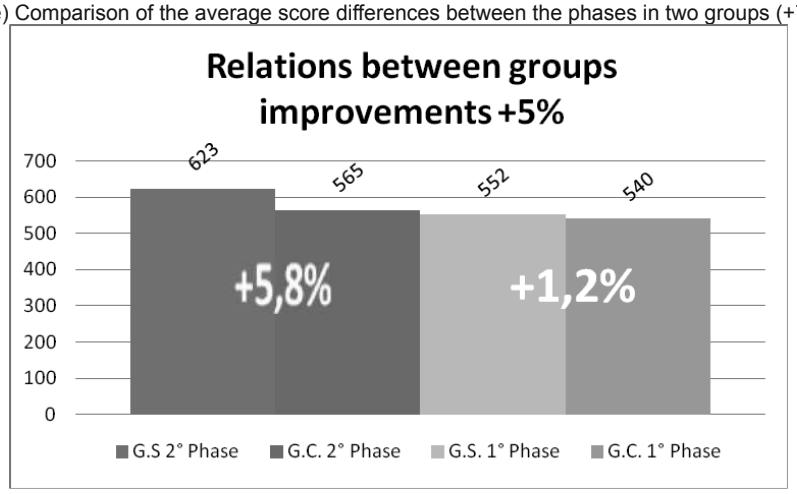


Fig. 2.2
Comparison of the difference between the two groups in input and ongoing showing an improvement of +5%

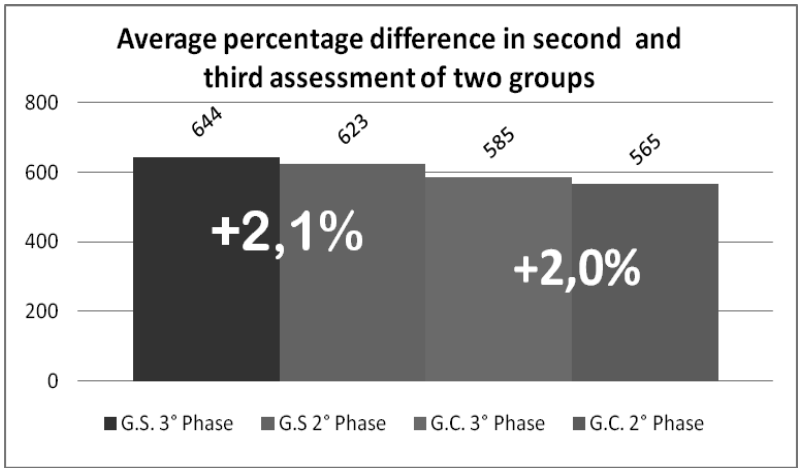


Fig. 3
Comparison of the difference of average percentage scores in second and third assessment of two groups

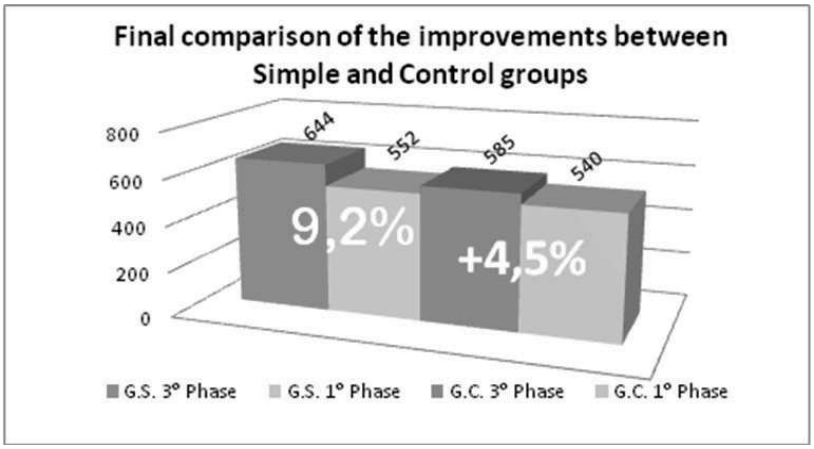


Fig. 4
Final comparison of the improvements between Simple and Control groups

DISCUSSION

Data evaluation showed that both methodologies, by using video analysis and by classical methodology only in the field, have shown the improvement of the technical skills in research groups. Data from the second assessment showed a significant improvement in some subjects in the sample group. In particular, the second assessment showed significant improvements, particularly in players who showed a good skills level already in first phase. The data could be explained by a higher relevance of the “ideo-motor” system especially in players who have a good basic technical ability and therefore less correction in the adaptation phase of technical gestures, after viewing the executive technician model or cause the ability to self-correction, after displaying the technical model, is higher in players who already have technical skills better. The third data assessment confirmed a good improvement in both group without significant difference between simple and control group. That could be explained by a greater difficulty of improvement and then a more slow acquisition of technical accuracy as much as approaches the hypothetical perfect execution (gestures of modeling). Also the third data showed a biggest improvement between

simple group with control group at the end of study, confirming hypothesis that using the videos before training, we make better at learning specific techniques, improving more than double compared to the control group. Study shows that using video-analysis by modeling approach as a tool in teaching method has the maximum improvement in first part of training program according to motor control theory of Motor Imagery. Starting phase should be played by video modeling teaching method to learn sport skills in qualitative aspects and then should be played according good sport practice in didactics.

CONCLUSION

The process of teaching-learning is too often taken for granted, inevitable and automatic when a person shows to what he knows or he is able to do. Scientific evidences shows that this superficial approach for the most of case, frustrates the efforts of the educators and creates frustration in the young players, making dissatisfied both the parts. So, once more, the circle virtuous theory-practice-theory making the learning process engaging and fascinating at the same time. The study has the purpose to find a valid tool and a point of departure for trainers and researchers of the learning in young sport players group. The results show as this study can help the trainer to prepare the team in to sharpen the technical abilities and to analyze it in a “different” and “original” way, creating a methodological system that helps to improve in aware form the learning of the typical based technique technicians of a sport as the Futsal. The insertion in the technical planning of the video-analysis with educational finality, as an methodological approach, and as value system, can also stimulate the self-valuation in the young players to considering it the true point of departure for the correct construction of the technical-motor knowledge. The narrowness of the work group (n=20) doesn’t allow generalizing the results in statistic way, but surely it sets the bases of observation for the development of this kind of searches.

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