Original Article

The effect of feedback through an expert model observation on performance and learning the pass skill in volleyball and motivation

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Abstract:

The aim of present study was to investigate the type of feedback (observation of a videotaped expert model, videotaped expert model plus self-monitoring observation or traditional feedback- only verbal instructions on skill elements) that will affect the performance and learning of the technique and outcome on volleyball pass skill of novice students/athletes. The second aim was to check if athletes were task or ego oriented, which means if they were intrinsic or extrinsic motivated. Participants were sixty three high school students of age 12-15 (M=13.1, SD= 0.89), without any experience on volleyball. The students were divided in three groups, expert plus self-modeling observation group, expert modeling group, and control group/verbal feedback. Quantitative and qualitative evaluations of the participants' performance were used, through three measurements (pre, post intervention and retention test one week after the posttest). Results indicated that participants who observed videotaped expert model plus self-monitoring were significantly improved, concerning the technical execution and also the outcome of the pass skill. Participants of expert modeling group were also improved their technique and the outcome of pass skill than participants of control group who had the least improvement of all the groups. Concerning the task and ego orientation the results revealed that participants of experimental groups were better in task orientation than the control group, after the intervention program. It seems that this particular method of feedback using observation and verbal instructions, helps participants to perform and learn the pass skill and also motivates them to "task" (compete and practice). This method of feedback and correction of errors could be useful for teacher of physical education and coaches because help students/athletes not only to learn the skill but also to keep them motivated on their sport.

Key words: modeling, feedback, task, ego orientation, pass skill, volleyball, children

Introduction

Model observation or observational learning is considered to be one of the most important means with which people learn skills or behaviors (McCullagh, Weiss, & Ross, 1989; Bandura, 1986). In line, research evidence indicated that model observation (or skill demonstration by the teacher) was linked to effective teaching and to corresponding teacher evaluation processes (Kyrgiridis, Derri, Emmanouilidou, Chlapoutaki, & Kioumourtzoglou, 2014). Model observation is defined as the process where the observers try to imitate the skills presented by another individual (McCullagh, et al., 1989; Weiss, 1983; Gould & Roberts, 1982). The theoretical approach that the model observation was based on is social learning, as presented by Bandura (1977; 1986). This theory claims that observers, while watching the video, codify symbolically the information for the skill in question so as to use them later as a guide for performing the skill. According to Bandura (1986), model observation is effective when the four sub-procedures: attention, retention, production and motivation, are activated. Also, researchers concluded that two kinds of model observation have positive results in learning, the observation of an expert model and self-monitoring observation (self-observation of athlete when performing the skill).

According to the model type, the demonstration of an experienced model (expert-modeling) such as the teacher enhanced students' fundamental skills performance and engagement in learning (Derri, Vasiliadou, & Kioumourtzoglou, 2014). Also, expert-modeling to elementary school children was more effective than the demonstration of the execution of the participants themselves (self-modeling observation) in volleyball skills (Zetou, Fragouli, & Tzetzis, 1999; Zetou, Tzetzis, Vernadakis, & Kioumourtzoglou, 2002; Vernadakis, Zetou, Antoniou & Kioumourtzoglou, 2002). In contrast, some studies showed positive results in self-modeling observation through the use of video (Clark & Ste-Marie, 2007; Onate, Guskiewicz, Marshall, Giuliani, Yu, & Garrett, 2005; Antoniou, Gourgoulis, Trikas, Mavridis, & Bebetos, 2003; Van Wieringen, Emmen, Bootsma,

Hoogesteger, & Whiting, 1989). Zetou, Kourtesis, Getsiou, and Michalopoulou, (2008) found that self-monitoring observation of young female athletes of beach volleyball had better results than the expert-modeling and control groups on the improvement of the technique of beach volleyball skills.

Ashford, Davids, and Bennett, (2007) hypothesize that characterizing the skill can modify the benefits of observation and conclude that self-monitoring observation through the use of video is more effective than other model types, in notable skills, such as landing from a jump in basketball (Onate et al., 2005; Vernadakis, Antoniou, Zetou, & Kioumourtzoglou, 2004; Vernadakis, Zetou, Tsitskari, Giannousi, Kioumourtzoglou, 2008, in long jump (Vernadakis, Avgerinos, Zetou, Giannousi & Kioumourtzoglou, 2006), serving in volleyball, (VanWieringen et al., 1989; Zetou, Vernadakis, Bebetos, & Makraki, 2012), volleyball in school (Vernadakis, et al., 2006), but also to continuous skills such as swimming (Clark & Ste-Marie, 2007; Dowrick & Raeburn, 1995; Starek & McCullagh, 1999; Zetou, Vernadakis, & Bebetos, 2014). Vernadakis, Antoniou, Zetou, Giannousi, & Kioumourtzoglou (2010), found positive results of learning the Setting Skill in Volleyball, comparing Multimedia Computer-Assisted Instruction, Traditional Instruction and Combined Instruction on Knowledge Acquisition and Retention. Thus, some other variables must be taken into consideration in order to determine which kind of model would be more effective.

Simultaneous verbal instructions, which accompanied the model demonstrations and direct the attention of the athletes in key points of the skills, are crucial (Derri et al., 2014). The results of the study conducted by Maleki, Shafie, Nia, Zarghami, and Neisi, (2010) have shown that feedback with model observation and simultaneous provision of verbal instructions improved learning in the skill of handstand, while feedback without verbal instructions did not show results in skills learning. Recently, Lazarides and Gorozides (2012) defined that the simultaneous use of video with verbal feedback is superior in comparison to the traditional method in teaching serving in volleyball to children of the first grade of high school and Lola, Tzetzis and Zetou (2012), defined that the video observation model effected on implicit practice in the development of decision making in volleyball serving.

Ste-Marie, Rymal, Vertes, and Martini, (2011) expanded their studies to the effect of model observation in self-regulation variables (Rymal, Martini, & Ste-Marie, 2010; Ste-Marie, Vertes, Rymal, & Martini, 2011) based on the theory about self-regulation by Zimmerman (2000). This theory claims that model observation does not just help learning new skills, but also produces changes in self-satisfaction, self-reaction and inner interest for the skill about to be learned, especially to children (Clark & Ste-Marie, 2007). Also, its use in competitive situations, combined with self-regulating strategies, such as strategic design and self-evaluation (Rymal et al., 2010; Ste-Marie, Rymal et al., 2011), had positive results.

In a recent review, Ste-Marie, Law, Rymal, O, Hall and McCullagh (2012), try to give some instructions for model observation for the performance and learning of skills. They try to answer to the questions "what?" (live or videotaped model), "who?" (expert or ordinary model), "why?" (performance or learning improvement), "where?" (lab environment or real practice environment), "when?" (what moment will the demonstration be presented). They suggest that researchers must first evaluate the athletes' and the skill's characteristics and also, what they expect from the result of the intervention and afterwards, to decide on the type of model, what will they observe exactly and if what they will observe will be accompanied by instruction, when will the observation take place and how will observers get information from observation.

Observational learning can serve both a cognitive and motivational function in sports (Feltz & Landers, 1983; McCoullagh, Weiss & Ross, 1989; Cumming, Clark, McCoullagh, Ste-Marie, & Hall, 2005). It is also recognized that observational learning can have effects on psychological factors, not only motivating to change or perform behaviour but coping with anxiety and cognitions such as self-efficacy and self-confidence (McAuley, 1985; Starek & McCoullagh, 1999; Weiss, Ebbeck & Wiese-Bjornstal, 1993).

Cognitive theories of achievement motivation supported the relevance of goal perspectives to our understanding of behavior in achievement contexts in sport environment (Ames, 1984; Dweck & Elliott, 1983; Maehr & Braskamp, 1986; Nicholls, 1984a, 1984b, 1989). This line of research is primarily concerned with the psychological, social, and behavioral antecedents and resort in two goal perspectives, namely a task orientation and an ego orientation. It is assumed that these two orientations reflect the criteria individuals use to subjectively define success and failure in achievement settings.

Sport research has supported the existence and salience of task and ego orientations among participants and nonparticipants (Gill, 1986). Nicholls (1984a, 1984b) and Dweck and Elliott, (1983) suggest that task and ego orientation is a distinct way of judging or construing one's level of demonstrated competence.

Although much more work needs to be done in this area, studies in the physical domain have also provided evidence for the hypothesized links between goal perspective and achievement behaviors such as performance (Burton, 1985), participation, and the intensity of involvement (Duda, 1988a, 1988b; Duda & Tappe, 1988). As was hypothesized, results indicated that task orientation related to the purpose-of-sport subscales tapping the prosocial characteristics associated with athletic involvement. Nicholls (1989) in terms of intrinsic motivation in sports outlines that there is a conceptual link between goal perspective theory and cognitive evaluation theory (Ryan, & Deci, 2000). The author argues that a task-involved goal perspective should foster intrinsic motivation while an ego-involved goal perspective will lead to decreased intrinsic motivation.

The athletes high in task orientation tended to believe that sport should teach people the value of trying one's best, cooperating with others, following the rules, and being a good sport (cooperation). Second, a task oriented goal perspective was also linked to the view that sport should socialize people into being honest, respectful, and concerned citizens in society at large. Third, task orientation positively related to the belief that sport participation should enhance one's self-esteem and increase the probability that people will adopt and maintain a physically active lifestyle. Also, task orientation tended to be negatively related to the view that sport should improve an individual's social status.

On the other hand, ego orientation positively related to beliefs about sport reflecting the extrinsic benefits and personal gains from the involvement in sports. In particular, the greater the emphasis on an ego oriented goal perspective, the greater the belief that sports should increase one's social status and teach people how to survive. Ego orientation was also a positive predictor of the view that sport should help a person get into college, move into top career positions, and earn more money.

Drawing from this literature, sport psychologists have advocated the value of considering differences in goal perspective in the study of behavior and experiences in sports (Duda, 1987, 1989; Gill, 1986; Roberts, 2001; Vealey, 1986).

Keeping all the above in mind, the present study was designed to investigate the type of feedback (observation of a videotaped expert model, videotaped expert model plus self-monitoring observation or traditional feedback- only verbal instructions on skill elements) that will affect the performance and learning of the technique and outcome on volleyball pass skill of novice athletes. The hypothesis in question was that a) the group of videotaped expert model plus self-monitoring observation will be better than the videotaped expert model and control groups and b) the two experimental groups (observational learning groups) will be better in task orientation (intrinsic motivation). The importance of the study rests on the fact that the intervention happens in real practice/training conditions.

Method

Participants

Participants were sixty three high school students of age 12-15 ($M=13.1$, $SD=0.89$), without any experience on volleyball. The students were divided in three groups. The first group (expert plus self-modeling observation group, $n=20$), the second group (expert modeling group, $n=21$) and the third group (control group/verbal feedback, $n=22$).

Intervention procedure

The criterion task for learning was the volleyball pass skill, which was taught in ten practice unit, of 45 minutes duration, for two times per week.

The participants of first group (EMG) were observed at the monitor (VHS 21'), a video recording demonstration of an expert model execution, for 2 minutes, in real/normal and slow (2208 Frames/min) motion, from head and side way (90° angle). The expert model was a student/athlete the same age of the participants and with five years' experience in volleyball (Lirgg & Feltz, 1991; McAuley, 1985). Simultaneously the participants received verbal instructions from the PE teacher, for the five basic elements of pass skill, that there were: body ready position, the locomotion of the body behind and under the ball, the face to the ball, the place which the ball contact the forearms and the coordination of upper and down limbs of the body during the contact of the ball. The observation procedure was repeated twice, in the beginning and in the middle of the practice session, two minutes of duration each.

The participants of second group (EM+SMG) were observed a video recording demonstration of an expert model execution plus their own video recording execution, for 2 minutes, in real/normal and slow (2208 Frames/min) motion, from head and side way (90° angle), and verbal cues wearing headphones in front of an individual monitor (VHS 21') each. The instruction cues were directed on the basic/serious mistakes of each student.

In the end of each practice session, the participant was executed the skill for three trials and she video recorded in front and by side option (90° angle). Then the researcher in the laboratory observed the trials and chooses the best execution, using a special program in the PC, creates the personal video/file for each student. This video/file includes the parallel execution of the expert model plus the choosing execution of the participant. The two moving images of skill trials were placed one above to the other and with this manner the differences between the two executions (the expert modeling execution and the participant execution) were obvious/clear.

The videotaped recordings for the expert model and for self-modeling were from the same distance and the same angle options. In every practice session all participants observed at the same time their own individual video file, in a room which were created personal places (20) with personal monitors (Philips 14') with video and headphones for each participant. The recording cues were for correcting the personal mistake. The whole observation procedure was repeated for two times, in the beginning and in the middle of the practice session of two minutes duration each (Christina, & Corcos, 1988; Fishman, & Tobey, 1978; Landers, 1975; McCullagh, 1987).

The participants of control group (CG) were received only verbal instructions (knowing of performance) from PE teacher, for the correct execution of the pass skill, two times, in the begging and in the middle of each practice session. Participants of all groups were performed four kinds of drills for ten repetitions of each drill, aiming the pass skill improvement.

Evaluation procedure

For the evaluation of observation effect on the participants' performance three measurements were accomplished. The first measurement (pre-test) was accomplished before the intervention procedure started; the second measurement (post-test) was accomplished after the end of intervention and the third measurement (retention test) one week without practice after the end of intervention program. Quantitative and qualitative evaluations of the participants' performance were used.

Quantitate evaluation

For the quantitate evaluation of participants' performance in pass volleyball skill the Bartlett, Smith, Davis and Peel, (1991) test was used (reliability $r=0.73$). The perfect execution for each participant was the 50 points.

Qualitative evaluation

The technique of the pass skill was evaluated from two expert volleyball coaches (10 years' experience), since their education and their intra and inter reliability was checked.

The observers were observed the videotaped execution of the participants and they evaluated the ten trials in five main elements of pass skill (Asher 1997; Kluka & Dunn, 1996; Zetou, 2006). The perfect execution for each participant was the 50 points.

Task and Ego Orientation Questionnaire

For the goal orientation achievement the Questionnaire of Task and Ego Orientation in Sport was used (TEOSQ, Duda & Nicholls, 1992). The participants were completed the questionnaire in the beginning and in the end of the intervention program. The questionnaire was consisting of two factors; ego orientation and task orientation. Task orientation factor was consisting of seven questions (1, 3, 5, 7, 9, 11, 13). Ego orientation was consisting of six questions (2, 4, 6, 8, 10, 12). The responses were in 5 scale of Likert, where 5 is the full agreement and 1 is the full disagreement with the question. The questionnaire was checked for its validity and reliability and it was used by a lot of researches (Chi & Duda, 1995; Li Hamer, & Acock 1996; Papaioannou & McDonald, 1993; White & Duda, 1994; VanYperen & Duda, 1997). The intra consistency of questionnaire was checked using Cronbach a coefficient. For ego orientation the Cronbach coefficient was $\alpha=.79$ and for task orientation the Cronbach coefficient was $\alpha=.75$.

Statistical analysis

For data evaluation the analysis of variance with repeated measures (3 groups X 3 measures) for pass skill evaluation and for "task and ego" questionnaire (3 groups X 2 measures) was used. Significance was $p<0.5$.

Results

Pre-test analyses in qualitative and quantitated assessments of volleyball pass skill and task and ego orientation questionnaire scores.

The aim of the pre-test analysis was to compare the baseline scores of participants before practice. Thus, one way-ANOVA was performed on the pre-test values. The results revealed that there were no statistically significant differences between groups in the pre-test in the quantitated and qualitative assessment of the pass skill and of task and ego orientation score (Table 1).

Table 1. Means and standard deviations in pre-test

Groups	Quantitated evaluation		Qualitative evaluation		Ego orientation		Task orientation	
	M	SD	M	SD	M	SD	M	SD
Expert model	19,62	2,24	22,52	2,27	4,13	,509	4,09	,498
Expert/self-modeling	19,10	2,36	23,70	3,42	4,16	,321	4,07	,584
Control	20,18	2,19	23,64	3,27	4,18	,359	4,26	,484

Qualitative assessments of volleyball pass skill

ANOVA with repeated measurements on the last factor (3 groups X 3 measurements) was used to assess the main factor effect and the interactions of groups and measurements on technique of volleyball pass skill (Table 2).

Table 2. Means and standard deviations of three measurements in qualitative evaluation.

Groups	Pre-test		Post-test		Retention test	
	M	SD	M	SD	M	SD
Expert model	22,52	2,27	36,33	1,88	36,62	2,22
Expert/self modeling	23,70	3,42	39,70	2,22	39,00	1,97
Control	23,64	3,27	30,73	3,21	30,45	2,77
Total	23,29	3,02	35,44	4,48	35,22	4,32

The study revealed a significant interaction between groups and measurements ($F_{(4,118)}=32.75$, $\eta^2 = .526$, $p < .01$). Significant main effects of group ($F_{(2,59)}=36.80$, $\eta^2 = .555$, $p < .01$) and of measurements ($F_{(2,118)}=685.11$, $\eta^2 = .921$, $p < .01$) were also found. More specifically, it was found that the groups had significant differences between them on three measurements when the technique of volleyball pass was assessed (Table 3). Bonferroni post-hoc analysis revealed that the participants of Modeling Group were better compared to the participants of the Modeling plus Self Modeling and Control Group. Participants of Modeling plus Self Modeling group were better than participants of Control Group in the post-test technique scores. The same results were found at the retention test (Table 3).

Quantitative assessments of volleyball pass skill

ANOVA with repeated measurements on the last factor (3 groups X 3 measurements) was used to assess the main factor effect and the interactions of groups and measurements on volleyball pass (Table 3).

Table 3. Means and standard deviations of three measurements in quantitated evaluation.

Groups	Pre-test		Post-test		Retention test	
	M	SD	M	SD	M	SD
Expert model	19,62	2,24	23,95	2,69	36,33	1,88
Expert/self modeling	19,10	2,36	25,70	3,01	39,70	2,22
Control	20,18	2,19	22,82	1,53	30,73	3,21
Total	19,62	2,24	24,11	2,70	35,44	4,48

Bonferroni post-hoc analysis revealed that the participants of Modeling Group were better compared to the participants of the Modeling plus Self Modeling and Control Group. Participants of Modeling plus Self Modeling group were better than participants of Control Group in the post-test technique scores. The same results were found at the retention test.

Task orientation

ANOVA with repeated measurements on the last factor (3 groups X 2 measurements) was used to assess the interactions of groups and measurements and the main factor effect on task orientation score of participants (Table 4). It was found that there was significant interaction between groups and measurements ($F_{(1,60)}=63.74$, $\eta^2 = .68$, $p < .01$), it was not main effect of measurement ($F_{(1,60)}=.004$, $\eta^2 = .000$, $p = .952$), but there was a main effect for the groups ($F_{(2,60)}=13.88$, $\eta^2 = .316$, $p < .01$). Bonferroni post-hoc analysis revealed that the participants of Modeling Group and the participants of the Modeling plus Self Modeling and Control Group were better compared to participants of Control group in the final score. More specifically, it was found that both the participants of experimental groups were better than the Control group at task orientation score in the final test.

Table 4. Means and standard deviations of task orientation.

Groups	Pre-test		Post-test	
	M	SD	M	SD
Expert model	4.07	.58	4.48	.24
Expert/self modeling	4.09	.49	4.56	.20
Control	4.26	.48	3.40	.21
Total	4.14	.52	4.13	.58

Ego orientation

ANOVA with repeated measurements on the last factor (3 groups X 2 measurements) was used to assess the interactions of groups and measurements and the main factor effect on task orientation score of participants (Table 5). It was found that there was not significant interaction between groups and measurements ($F_{(1,60)}=1.319$, $p = .275$) and was not main effect of measurement ($F_{(1,60)}=.005$, $p = .943$) and for the groups ($F_{(2,60)}=.015$, $p = .985$).

Table 5. Means and standard deviations of ego orientation.

Groups	Pre-test		Post-test	
	M	SD	M	SD
Expert model	4.13	.50	4.16	.48
Expert/self modeling	4.16	.32	4.17	.33
Control	4.18	.35	4.14	.41
Total	4.16	.39	4.16	.41

Discussion

The present study was conducted in a real world environment (school setting) and attempted to examine differences in learning a motor skill under different observational conditions (Bandura, 1977; Mc Cullagh, 1986, 1987). More specifically the aim of the present study was to investigate the type of feedback (observation of a videotaped expert model, observation of videotaped expert model plus self-monitoring or traditional feedback-only verbal instructions on skill elements) that will affect the performance and learning of the technique and outcome on volleyball pass skill of novice athletes. The hypothesis in question was that a) the group of videotaped expert model plus self-monitoring observation will be better than the videotaped expert model and control groups and b) the two experimental groups (observational learning groups) will be better in task orientation (intrinsic motivation).

According to the results of the present study, during the final recording, the athletes which observed videotaped expert model plus self-monitoring were significantly improved, concerning the technical execution and also the outcome of the pass skill. The athletes of expert modeling group were also improved their technique and the outcome of pass skill. The athletes of control group that received only the traditional method of teaching by their teacher had the least improvement of all the groups.

Thus, it seems that the athletes of the group who observed the videotaped expert model plus self-monitoring during the execution of the standard practice were interrupted to observe their previous effort, were compared their execution with the model and were recognized their mistakes. Consequently, the athletes of the two experimental groups (using observation) recognized the main elements that require their focus and attention were improved to a greater extent compared to the athletes of the group that received only verbal feedback. That means that the athletes who received only verbal additional feedback in 5 key points, had the least degree of improvement. The athletes of the control group that did not receive any extra information but that of their teacher, seems that it constrained their progress compared to the other groups of athletes.

Thus, firstly, the method of the videotaped expert model plus self-monitoring and secondly, the expert model observation, where the groups that observed, but also recognized, the most important elements of the skill, seem to be the most appropriate methods to be applied in novice athletes, if the aim of teaching/practice is the skill acquisition and learning.

The results of the retention test were also similar, so that it could be determined whether and to what extent the improvement of the participants of each group was permanent, that is whether there was retention and we can therefore assume that this results in learning effects. The importance of the retention test (Cristina & Shea, 1993), that was conducted in this study as well, lies in the need to determine whether a method is effective and has continuity in learning the kinetic information and also a way of assessing individual teaching skills of each coach-teacher.

Thus, the results of the present study showed that there was a downward trend in all three intervention groups, as well as in the control group, but not lower than that of the final test. So, all groups retained their performance (learned the pass skill), something which was expected, since they had been practicing for five weeks. Consequently, the participants of all three groups had gains in performance and in learning as a result of practice, but the EM+SMG method was proved to be the most effective, followed by the method of EMG and least effective group was the traditional method that includes summary verbal feedback. However, one can assume that young athletes were assisted to a greater degree from observing an expert athlete but also from observing themselves performing, in order to try imitating the right movement and comparing with the expert execution avoiding mistakes. Thus, this study comes to the conclusion that expert modeling plus self-modeling observation, as a source of feedback, is more effective than observing only an expert model, but also more effective compared to the traditional method of teaching.

There are no references using this type of observation (combination of two types of modeling) for skill learning, but there are studies using self-modeling or expert modeling observation apart. The results of other studies such as that of Law and Ste-Marie (2005) who experimented the self-modeling effect in figure skating jump performance and Zetou, et al. (2002) revealed that children of expert-modeling group were more effective compared to self-modeling group, in an intervention aimed at teaching volleyball skills.

Nevertheless, there is a debate about the effectiveness of audiovisual feedback by using audiovisual material, compared to traditional teaching. For example, Rikli and Smith (1980) who supported the notion that providing feedback by using visual material was not very effective on experienced athletes. Also, other researchers reinforced this opinion and stressed that this source of feedback is overestimated (Emmen et al.

1985; Van Wieringen, et al., 1989). In the same vein, recent studies from Vernadakis, et al. (2002), compared the effectiveness of the two methods of teaching using high school students (first and second grade), between the traditional method and teaching method using observation in the computer, aiming the set volleyball skill learning and basketball shooting skill (Vernadakis, et al., 2004). The results of this study showed that multimedia technology is not superior to traditional teaching, but certainly not inferior and equally effective.

The results of the present study confirmed the original hypotheses. Visual feedback, combined with audio feedback, that is verbal instructions of focus on particular points of the aforementioned skill, proved to be more effective than only verbal feedback and traditional teaching. Many researchers claim that using verbal cues is very effective, especially for very young children that attempt to learn a new kinetic pattern, especially when verbal cues are linked to practice. In a relevant study, Mohnsen and Tomson (1997), who studied the use of audiovisual media and how they can help improve learning, showed that it is advised to videotape the technique of each athlete and then to reflect and analyze, in order to correct any mistakes (Weiss & Clint, 1987; Mc Cullagh, Stiehl & Weiss, 1990).

As for the effect of different methods of feedback in improving the quantitative performance of the athletes of the groups, the results showed that there were differences between the tests, which mean that all groups improved their score with practice, and there were significant differences between them. In this particular case, we cannot claim improvement in technique and as a result, improvement of the outcome scores. The method of self-monitoring observation, and generally, the audiovisual feedback method are greatly accepted in the field of coaching. The means that technology can offer us today are numerous, easy to use and easily accessible. Besides, sport coaching is in a constant search of methods that can easily be applied in the training and that can be effective.

A lot of studies suggest that self-monitoring observation could be applied to both individual and team sports, for both simple and complex skills. Besides, the evidence existing in the relevant literature is that using audiovisual feedback improves athletes' performance.

Further research should be done in younger ages (8-10 years old) because within that age span children begin to practice sports and learn sport skills. The same design could be applied to three age categories (6-10, 11-16 and 17 and over) in order to determine which method of feedback/instruction would be the most appropriate for each age. This same design could possibly be done without practice intervention, in order to determine the effect of the kind of model without the effect of practice. Additionally, since nowadays computers are used extensively, a computer could be used, using appropriate programs to create models, which would look like the participants (age, sex, character, even facial characteristics) so as to have better results in skill learning, of course always combined with practice.

Concerning the task and ego orientation the results revealed that participants of experimental groups were better in task orientation than the control group, after the intervention program. It seems that this particular method of feedback (using observation and verbal instructions) helps participants to perform and learn the pass skill and also motivates them to "task" (compete and practice). The researchers were agreeing that participants, who are motivated in "task", are intrinsic motivated in sport. Relating the ego orientation there was not any difference between groups. It seems that participants that were oriented in ego in the pre-test, they remain motivated in ego in the post-test.

This means that the success or the failure of the goal achievement is an intrinsic affair of the person (Dweck, 1999; Nicholls, 1989). Children with task orientation motives, usually put challenging goals, without are afraid of the possibility of failure. Even if they fail, they are optimists and have insistence to continue their attempts using new strategies for their goals achievement (Dweck, 1999; Kaplan & Maehr, 1999; Pintrich, 1989).

The predisposition factors are responsible for the creation of the goal setting environment (Roberts, 2001; Dweck, 1999; Duda, 1993). The orientation of goal achievement is expressed as ego and task orientation (Nicolls, 1984a; 1989). The significant factor that mediate and influence the orientation of achievement and the effort which a person makes to perform a skill, is the person's anticipation ability (VanYpenen, & Duda, 1997; White & Zellner, 1996; Biddle, Akande, Viahopoulos, & Fox, 1996; Walling, & Duda, 1995; Duda, Chi, Newton, Walling, & Catley, 1995; Hassandra, Goudas & Chroni, 2003).

Persons who are ego oriented, choose an action/movement to perform, so that to demonstrate their ability to perform it and to take rewarding comments or to avoid the failure and the negative criticism (Dweck, 1999; Dweck & Leggett, 1988). They usually choose a very easy action/movement to perform, so that they avoid reducing their self-perception ability (Bandura, 1990).

Conclusions

In conclusion, the combination of visual feedback, and more specifically, the method of expert plus self-modeling observation, may be the most effective way to learn new skills and also to improve performance in general, and is another useful tool for the coaches and Physical Education teachers. The particular method of teaching also helps participants to enhance their intrinsic motivation, which is a significant factor for young athletes to continue practicing in their sport.

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