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**The Effect of Instructional and Motivational Self Talk on Motor Performance in Adults and Adolescents****<sup>1</sup>Amir Dana, <sup>2</sup>Mohammad Vaez Mousavi, <sup>3</sup>Pouneh Mokhtari**<sup>1</sup>*Department of Physical Education and Sport sciences, Science and Research Branch, Islamic Azad University, Tehran, Iran*<sup>2</sup>*Department of Psychology, Exercise Physiology Research center, Baqiyatallah University of Medical Sciences and University of Imam Hossein, Tehran, Iran*<sup>3</sup>*Department of Physical Education, Tehran Central Branch, Islamic Azad University, Tehran, Iran*

Amir Dana, Mohammad Vaez Mousavi, Pouneh Mokhtari: The Effect of Instructional and Motivational Self Talk on Motor Performance in Adults and Adolescents

**ABSTRACT**

The present study aims at investigating the effect of instructional and motivational self talk on basketball shooting, dribbling and passing tasks in adults and adolescents. A number of 114 novice adult and adolescent participants were randomly assigned into three groups: instructional self talk, motivational self talk and control group. The assigning was carried out on each age group independently. The instructional self talk group used the phrase "wrist, center" for shooting task, "finger, target" for Passing task and "low, rhythm" for dribbling task. The motivational self talk group used the phrase "I can" for all the three tasks. The results of factorial ANOVA showed no significant difference between the effect of motivational and instructional self talk on adolescents comparing with adults in shooting task. There was no difference in Passing performance between adult and adolescent instructional self talk groups. However, there was a significant difference in passing performance between adult and adolescent motivational self talk groups. In dribbling task, instructional self talk culminated in better performance in adults comparing with adolescents. Nevertheless, motivational self talk yielded better dribbling performance in adolescents comparing with adults ( $P \leq 0.05$ ). The results supported the task-dependent relationship between age and self talk efficacy. Therefore, based on the type of the task, different types of self talk may differently affect task performance.

**Key words:** Instructional Self talk, Motivational Self talk, Motor Performance, Adults, Adolescents**Introduction**

For long, various interventions have been made to improve performance, satisfaction and personal growth in the athletes. In this regard, different cognitive procedures such as self talk, goal setting, mental illustration, relaxation training and motivational control have been proposed to help improve psychological and thought patterns in the athletes. Self talk is a specific type of these interventions, which is a strategic technique whereby the individual speak to themselves vocally or subvocally [20].

Research has shown that athletes extensively use self talk techniques to generate and enhance motivation and to create signs of physical performance [26]. Zinnser, Bunker and Williams contend that self talk improves athletic performance through better skill acquisition, enhancement of self confidence and self efficacy, modification of ineffective habits and endeavor control [27]. Weinberg and Gould reported that athletes benefit

from self-talk techniques in a variety of ways including new skill acquisition, elimination of bad habits, motivation enhancement, attention control, change in mood and self-confidence build-up [25]. Thus, self talk may be used in different situations and for different purposes.

Different categorizations have been proposed for self talk, one of which assigns self talk into two types, namely, instructional and motivational. Several studies have investigated the effect of different types of self talk on different tasks, situations and athletes. Some researchers contend that motivational self talk facilitates performance through encouraging higher levels of endeavor, creating a positive mood and enhancing self confidence, whereas in instructional self talk, task-related training statements improve performance through calling for favorable activities using concentration and performance strategy [5]. Several studies have investigated the effect of different types of self talk on athletic performance before training tasks or competitions, but they have yielded

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contradictory results. Some studies reported improvements in athletic performance in swimming, 100-meter dash, golf and tennis tasks through instructional self-talk [6,12,6,17]. Some researchers contend that both types of self talk may improve performance [18]. Most studies have investigated the effect of self talk on adults but not adolescents [2]. Some studies have reported novice task performers to benefit more from instructional than motivational self- talk [2], whereas some studies have shown that adolescent players are more interested in motivational self talk; thus, coaches need to draw upon motivational phrases to enhance self confidence in the novice [2]. Research has also shown that the efficacy of self talk relates to the nature of the task [10]. Before having athletes resort to self talk, the type of the task should be examined so as to determine whether it is an open or closed task or a simple or complex task [15]. Landin contends that task complexity affects the efficacy of self talk in improving performance. Perkos and colleagues showed that instructional self talk does not affect basketball shooting performance (as a complex task) in adolescents [15] while Chroni and colleagues reported that motivational self talk improves basketball shooting performance in adolescents [2]. Besides, Boroujeni showed that instructional self talk improves basketball shooting performance in adults [1]. Therefore, it seems that participants' age and task complexity influence the efficacy of instructional and motivational self talk.

Furthermore, there are obvious differences in mental characteristics, information processing and fitness level between adults and adolescents [22]. These differences, particularly differences in information processing capabilities, pose the problem whether or not instructional and motivational self talks as cognitive skills produce variable effects in adults and adolescents. Accordingly, considering such factors as the effects of instructional and motivational self talk on performance, cognitive and psychological differences between adults and adolescents, participants' age and the complexity of the task, the present study aims at investigating the effect of instructional and motivational self talk on performing shooting (as a complex task), Passing and dribbling (as simple tasks) in adults and adolescents.

## Materials And Methods

### *Participants:*

The population of the study consisted of all adult novice basketball players (Mean age=22.3, SD=1.7) and adolescent novice basketball players (Mean age=13.1, SD=1.4). A number of 114 participants were selected randomly, and subsequently the participants in each age group were assigned into three groups: instructional self talk (N=19), motivational self talk (N=19) and control group

(N=19). Based on the statistical power of 0.8 (the common statistical power in behavioral sciences) and the effect size of 0.62 (as reported by Meyers for cognitive approaches to motor performance), the sample size of 19 was considered sufficient at 95% confidence level.

### *Instrument*

#### *Dribbling test:*

Harrison Basketball Dribbling Test was used to examine the accuracy and speed of dribbling. To do the test, a participant should dribble cones and receive one score for each successful dribbling. The reliability of the test has been estimated to be 0.95 [2].

#### *Passing test:*

Stubbs Ball Handing Test was used in the present study. In this test, three circles with a diameter of 30 centimeters are drawn in a vertical order with 1.6 meter distances on a flat wall. The first circle is 1.51 meters high, the second is 1.21 meters high and the third is 1.36 meters high. A participant should stand behind a line with 450 centimeters from the wall. On hearing the impetus "go", the participant should throw the ball at the first circle, and having received the rebounded ball, he throws it at the second and the third circles successively. The participant repeats the throws for 30 seconds and receives one score for every throw which hits the circles. The reliability of this test is calculated to be 0.74 [2].

#### *Shooting test:*

A three-minute basketball shooting test was used in this study. In this test, a participant is required to make any possible number of shots from every arbitrary point on a semicircle line with a radius of 3.66 meters from the hoop center. The participant has to receive the rebounded balls himself. Every successful shot receives one score. The reliability of the test has been calculated to be 0.91 [2].

#### *Manipulation check protocol:*

This protocol addresses the use of self talk by participants. Indeed, this protocol is to guarantee the accuracy of experimental conditions created by the researcher [3]. The experimental subjects were asked to specify on a 10-point Likert scale (1) how many times they had used selective self talk, (2) whether they had used other types of self talk and (3) if so, what they had told themselves and (4) how often they had used it. The idea of self talk was also explained to the control subjects. Subsequently, they were asked to indicate on a 10-point Likert scale (1)

whether they had ever used self talk and (2) if so, what they had told themselves and (3) how often they had used it [8].

#### *Procedure:*

From among the population, a number of 114 participants, who were novice basketball players at the specified age range and who suffered no mental or physical disorder, were selected randomly using a personal information questionnaire. Both adult and adolescent participants were independently assigned each into three groups: instructional, motivational and control groups (4 experimental and 2 control groups). Before the study was started, the researcher met the program coach a few times to explain to him the research method and test procedures. Based on a timetable, every group came to the sports hall separately. Following the jogging and stretch training, the participants were asked to do 10 minute warm-up basketball training. Then the pretest was performed. In the pretest, shooting, Passing and dribbling tasks were examined in both the experimental and control groups without using self talk. Subsequently, self talk techniques were explained to the experimental subjects who were to use them in their task performance. The experimental subjects were asked not to talk to their teammates during task performance but to repeat either vocally or subvocally the specified self talk phrase before doing the task [2]. The instructional self talk subjects were asked to repeat the phrase "low, rhythm" to focus their attention on variations in the direction of movement and maintain a low body position before dribbling, the phrase "fingers, target" to get a better ball control and focus their attention on the target before ball handling, and the phrase "wrist, center" to direct their attention to wrist flexibility and hoop center before shooting task. The motivational self talk subjects were asked to repeat the phrase "I can" in doing all the three tasks. The control subjects did similar tasks without self talk. Upon the completion of every task, the participants took a one-minute rest during which they prepared for the next task. The same coach trained all the groups. Immediately upon the completion of tasks, the participants filled in the manipulation check questionnaire [2].

#### *Data analysis:*

Using descriptive statistics, the mean and standard deviation of research variables were calculated and tables and figures were drawn. Covariance and Kolmogorov-Smirnov tests were run to examine the homogeneity of data. Besides, factorial ANOVA was used to determine the effect of the type of self talk on motor performance in adults and adolescents and the post hoc Tukey's test was run to examine between-group differences.

#### *Results:*

The results of one-way ANOVA of adolescents shooting performance showed a significant difference among instructional self talk, motivational self talk and control groups ( $P \leq 0.05$ ,  $F(2,54)=59.89$ ). To compare the means two by two, the results of Tukey's post hoc test of basketball shooting task in adolescents showed that there is a significant difference between the mean scores of instructional self talk and control groups as well as between motivational self talk and control groups in shooting performance ( $P \leq 0.05$ ). Accordingly, instructional self talk resulted in better shooting performance in adolescents. Besides, there was a significant difference between the mean scores of instructional and motivational self talk groups in shooting performance ( $P \leq 0.05$ ), which means that motivational self talk group outperformed instructional self talk group in shooting performance. The results also revealed a significant difference among instructional self talk, motivational self talk and control groups in Passing task ( $P \leq 0.05$ ,  $F(2,54)=95.55$ ). To compare the means two by two, the results of Tukey's post hoc test of basketball Passing task in adolescents showed that there is a significant difference between the mean scores of instructional self talk and control groups as well as between motivational self talk and control groups in Passing performance ( $P \leq 0.05$ ). Besides, there was a significant difference between the mean scores of instructional and motivational self-talk groups in Passing performance ( $P \leq 0.05$ ), which means that instructional self talk group outperformed motivational self-talk group in Passing performance.

The results also showed a significant difference among instructional self talk, motivational self talk and control groups in dribbling task ( $P \leq 0.05$ ,  $F(2,54)=44.16$ ). To compare the means two by two, the results of Tukey's post hoc test of basketball dribbling task in adolescents showed that there is a significant difference between the mean scores of instructional self talk and control groups as well as between motivational self talk and control groups in dribbling performance ( $P \leq 0.05$ ). Besides, there was a significant difference between the mean scores of instructional and motivational self talk groups in dribbling performance ( $P \leq 0.05$ ), which means that motivational self talk group outperformed instructional self talk group in dribbling performance.

The results of one-way ANOVA of adult shooting performance showed a significant difference among instructional self talk, motivational self talk and control groups ( $P \leq 0.05$ ,  $F(2, 54)=49.5$ ). To compare the means two by two, the results of Tukey's post hoc test of basketball shooting task in adults showed that there is a significant difference between the mean scores of instructional self talk and

control groups as well as between motivational self talk and control groups in shooting performance ( $P \leq 0.05$ ). Besides, there was a significant difference between the mean scores of instructional and motivational self talk groups in shooting performance ( $P \leq 0.05$ ), which means that motivational self talk group outperformed instructional self talk group. The results also revealed a significant difference among instructional self talk, motivational self talk and control groups in Passing task ( $P \leq 0.05$ ,  $F(2, 54) = 139.16$ ). To compare the means two by two, the results of Tukey's post hoc test of basketball Passing task in adults showed that there is a significant difference between the mean scores of instructional self talk and control groups as well as between motivational self talk and control groups in Passing performance ( $P \leq 0.05$ ). However, there was no significant difference between instructional and motivational self-talk groups in Passing performance ( $P = 0.343$ ). The results also showed a significant difference among instructional

self talk, motivational self talk and control groups in dribbling task ( $P \leq 0.05$ ,  $F(2, 54) = 29.11$ ). To compare the means two by two, the results of Tukey's post hoc test of basketball dribbling task in adults showed that there is a significant difference between the mean scores of instructional self talk and control groups as well as between motivational self talk and control groups in dribbling performance ( $P \leq 0.05$ ). Besides, there was a significant difference between instructional and motivational self talk groups in dribbling performance ( $P \leq 0.05$ ), which means that instructional self talk group outperformed motivational self talk group in dribbling performance.

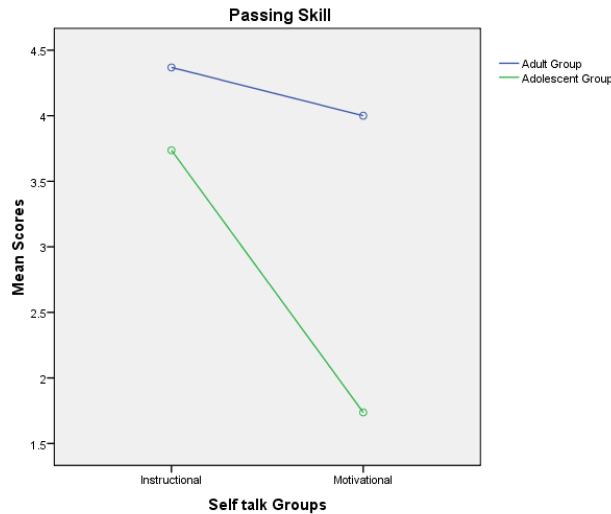
The results of factorial MANOVA showed no significant interactive effect of age and group on shooting performance ( $P = 0.143$ ,  $F(1, 72) = 2.19$ ). Figure 1 shows that there is no difference between the effects of motivational and instructional self talk on adults and adolescents in shooting performance.



**Fig. 1:** Factor analysis of the effect of age and group on shooting performance

The results of factorial MANOVA revealed that age and group have a significant interactive effect on Passing performance ( $P \leq 0.05$ ,  $F(2, 72) = 22.88$ ). Figure 2 illustrates that both motivational and instructional self talk result in better Passing performance in adults comparing with adolescents. The post hoc one-way ANOVA of the significance of

interaction showed that there is no significant difference in Passing performance between adult and adolescent instructional self talk groups ( $P = 0.051$ ). However, there was a significant difference in Passing performance between adult and adolescent motivational self talk groups ( $P \leq 0.05$ ).



**Fig. 2:** Factor analysis of the effect of age and group on Passing performance

The results also revealed that age and group have a significant effect on dribbling performance ( $P \leq 0.05$ ,  $F(2,108) = 35.7$ ). Figure 3 shows that instructional self talk results in better dribbling performance in adults comparing with adolescents. However, motivational self talk led to better dribbling performance in adolescents comparing with adults. The post hoc one-way ANOVA of the

significance of interaction showed that there is a significant difference in dribbling performance between adult and adolescent instructional self talk groups ( $P \leq 0.05$ ). As well, there was a significant difference in dribbling performance between adult and adolescent motivational self talk groups ( $P \leq 0.05$ ).



**Fig. 3:** Factor analysis of the effect of age and group on dribbling performance

*Discussion And Conclusion:*

The present findings showed that self talk, irrespective of its type, results in better basketball shooting, Passing and dribbling performance in both adults and adolescents. Previous research has typically supported the positive effects of self talk on motor learning and performance in regard to various variables including novice athletes [15], skilled athletes [12], learned skills [6], new skills [7], and different sports including sprints [14], skiing [18],

tennis [12], basketball ball handling, shooting and dribbling [2,21]. Therefore, the present findings correspond to previous results. Generally speaking, it seems that instructional self talk improves athletic performance through increasing concentration and athletic techniques whereas motivational self talk helps improve performance via enhancing self confidence, endeavor, energy and good temperament [5,21,25].

Recent research has focused on the comparison of instructional and motivational self talk as well as

testing the matching hypothesis based on specific task demands. The results have shown that different types of self talk may exert variable effects on performance. For example, studies on different tasks including the accuracy of football shots and badminton serving test [23], Passing accuracy [1] and golf strokes [13] showed significant improvements in performance in the instructional subjects comparing with motivational subjects. However, some studies on other tasks including push-ups [9] and the speed of basketball pass [1] showed that motivational self-talk subjects outperformed instructional subjects. Still, some studies on chest pass, goalball penalty task [24], crunch and knee extensor training [23] and basketball pass [2] showed that though motivational subjects outperformed instructional ones, the difference was not statistically significant. The conclusion to be drawn is that since self talk is employed to improve performance, it is necessary to match self talk with task demands. Based on this conclusion, Theodorakis and colleagues formulated a hypothesis which was later called task-demands matching hypothesis by Hardy and colleagues [21,4]. According to this hypothesis, instructional self talk requires more effective accuracy and timing while motivational self talk requires more effective strength and endurance for task performance [4]. Overall, these findings suggest that different types of self talk exert variable effects on performance based on the type of self talk and the task. Hatzigeorgiadis and colleagues contend that with different types of self talk having variable effects on performance, it may be better to draw upon different types of self talk for different functions [8]. According to the abovementioned discussion, studies have been conducted on different tasks resulting in different findings. For instance, Theodorakis and colleagues studied the effects of self talk on football task performance in adolescents, on badminton serving in adults, on crunch exercise in adolescents and on knee extensor training in adults [23]. The task-demands matching hypothesis was inspired by these findings. It is notable that the tasks used in the present study were not categorized as accuracy or strength tasks, rather, according to Landers and Arant, basketball dribbling and Passing were categorized as simple tasks and shooting was considered as a fairly complex task because it requires quick reactions and sprints. Therefore, it may be difficult to assign self talks to these tasks [10]. As a result, one of the marked differences between the present study and previous ones is the classification of tasks in terms of simplicity and complexity. Since different types of self talk exert variable effects on performance based on the type of the task and the self talk, hereinafter, the present findings will be compared with studies that have been carried out on basketball tasks.

The present findings on adolescents showed that motivational subjects outperformed instructional

subjects in shooting and dribbling tasks. This is consistent with the findings of Sabonchi and colleagues [22] on shooting task, Chroni and colleagues [2] on shooting and dribbling tasks and Boroujeni and colleagues [1] on speed pass, but inconsistent with the findings of Chroni and colleagues [2] on Passing and Boroujeni and colleagues on pass accuracy [1]. The present findings on adolescents also revealed that instructional subjects outperformed motivational subjects in Passing task. This is consistent with the findings of Theodorakis and colleagues [21] on shooting task and Boroujeni and colleagues [1] on pass accuracy but inconsistent with the findings of Sabonchi and colleagues on shooting, Passing and dribbling tasks, Chroni and colleagues [2] on dribbling, Passing and shooting tasks and Boroujeni and colleagues [1] on speed pass.

The present findings on adults showed that motivational subjects outperformed instructional subjects in shooting task. This is consistent with the findings of Sabonchi and colleagues on shooting task, Chroni and colleagues [2] on shooting and dribbling tasks and Boroujeni and colleagues [1] on speed pass but inconsistent with the findings of Sabonchi and colleagues on dribbling and Passing tasks, Theodorakis and colleagues on shooting task, Chroni and colleagues on Passing task [2] and Boroujeni and colleagues [1] on pass accuracy. Still, instructional subjects outperformed motivational subjects in dribbling task. This finding corresponds to the findings of Theodorakis and colleagues on shooting task and Boroujeni and colleagues on pass accuracy [1]. It is, however, inconsistent with the findings of Sabonchi and colleagues on dribbling, shooting and Passing tasks [26], Chroni and colleagues [2] on dribbling, shooting and Passing tasks and Boroujeni and colleagues on speed pass. The present findings revealed no significant difference between adult motivational and instructional subjects in Passing performance. This is consistent with the findings of Chroni and colleagues on Passing task [2] and Sabonchi and colleagues on dribbling and Passing tasks [26]. This is, however, inconsistent with the findings of Sabonchi and colleagues on shooting task [26], Chroni and colleagues on dribbling and shooting tasks [2], Boroujeni and colleagues [1] on speed pass and pass accuracy and Theodorakis and colleagues [21] on shooting task.

In regard to the inconsistencies between the present findings and previous ones on shooting, Passing and dribbling tasks in both adults and adolescents, a few factors may prove consequential. First, the inconsistencies may relate to the type of the tasks and skill level of participants. As stated formerly, shooting is a complex but Passing and dribbling are simple tasks. Perkos and colleagues contend that task complexity significantly affects the efficacy of self talk in skill acquisition and improved performance [15]. Therefore, before deciding on self

talk phrases, one has to ensure whether or not the task can be divided into smaller components to facilitate learning and performance. Complex tasks, which require quick and automatic performance, usually cause difficulty to self talk techniques. Thus, task type may be a reason for the present inconsistencies. Second, the inconsistencies may be attributed to the variable functions of self talk phrases so that some phrases may play both instructional and motivational roles. For example, Theodorakis and colleagues found that PE students who used the word "slow" during the three-minute throwing task outperformed those who used the word "quick". Thus, different phrases used in different studies may have led to different results. Tsiggilis and colleagues [24] reported that the type of tasks, number of repeats and the athletes' skill level may account for inconsistencies in research findings. Third, the inconsistencies may as well relate to the performance criteria used in the present study. For example, Boroujeni and colleagues [1] set the speed and accuracy of basketball pass and shooting as their criteria. In other words, drawing upon the two criteria of speed and accuracy, they sought to examine the task-demands matching hypothesis in performing basketball tasks. However, the performance criteria in the present study were set based on the successful task performance within specific time limit. Finally, research methodology may also account for inconsistencies between the present and previous findings. For instance, Perkos and colleagues used a within-group study method [15] while a between-group method was used in the present study. Besides, Chroni and colleagues [2] had two coaches train self-talk groups separately whereas only one coach trained the subjects in the present study in order to avoid training inconsistencies.

As with adult athletes, adolescents talk about good feelings and feelings of anger. During training and competitions, they may sometimes feel anxious and hapless. Adolescent athletes like adults suffer from such stresses as pressure and good or bad performance. They bear such mental requisites and characteristics as motivation, concentration, anxiety and self confidence comparable to adults [2]. However, there is scarcity of research on the effect of cognitive techniques on athletic performance in adolescents. In this regard, a significant characteristic of the present study is not only to heed the effect of self talk on adolescent athletic performance but also to investigate the effect of age so as to examine the interactive effects of age and self talk on performance. The present findings showed no interactive effect of age on instructional and motivational self talk in shooting task. Nevertheless, motivational self talk resulted in better Passing performance in adults comparing with adolescents while instructional self talk brought about no significant difference between the two groups in

Passing performance. On the other hand, instructional self talk resulted in better dribbling performance in adults comparing with adolescents.

Motivational self talk resulted in better dribbling performance in adolescents comparing with adults. As discussed, age and sex exert variable interactive effects on basketball shooting, Passing and dribbling performance. This variation may relate to the nature of the task since shooting is a complex but Passing and dribbling are simple tasks which are further divided into distinct and continuous tasks. As an example, the difficulty in assigning the appropriate self talk phrases to various aspects of shooting task in both adult and adolescent groups may have prevented the interactive effect of age on self talk in the present study. The present findings also revealed the interactive effect between self talk and age in dribbling performance. The superiority of adult instructional subjects in dribbling task comparing with adolescents may relate to information processing capacity in adolescents. Obviously, adolescents have different information processing capabilities comparing with adults. In cognitive processes like selective attention and speed of information processing, adolescents differ from adults. Moreover, they use different approaches to processing information in the tasks which require the utilization of object recognition memory, focus of attention and verbal learning [16]. Therefore, it may be that adolescents have failed to focus their attention on respective signs such as cones. Adults may have benefited from their richer motor experience to discern respective signs, hence their better performance. As far as the adolescent advantage in motivational self talk over adults is considered, it seems that adolescent athletes usually tend to use motivational self talk since it helps build up self-confidence [2]. Accordingly, they may have made more endeavors in using motivational self talk as improved effort is one of the effective mechanisms of motivational self talk in performance. All in all, such factors as the task complexity, the amount of self talk used, participants' motor experiences and differences in information processing capacities between adults and adolescents may together account for the present findings. Besides, there may be some developmental cognitive differences between the ages 12 and 16, which may have potentially affected the interpretation of results [22]. Consistent with self talk studies in using manipulation check protocol [24], a questionnaire was administered to the participants to report on what they thought during task performance. Over 95% of the participants in both instructional and motivational groups reported that they used self talk during task performance, which is an acceptable percentage [4]. Excluding the participants who reported they had not used self talk during task performance, the data was analyzed again, which



yielded the same results. The control subjects reported that they did not use self talk in doing tasks.

Overall, the present findings supported the interaction between age and self talk efficacy based on the nature of the task. Accordingly, different types of self talk may exert variable effects on performance based on the nature of the task and participants' age. The present findings may be generalizable to similar ages, levels of experience and situations. Therefore, it is recommended that future studies investigate the interactive effect of age and self talk on other motor skills in different sports as well as the effect of self talk on competitive performance.

## References

- Boroujeni S. T., 2011. The Effect of Instructional and Motivational Self-Talk on Performance of Basketball's Motor Skill. *Social and Behavioral Sciences*, 15, 2011, pp. 3113-3117.
- Chroni, S., S. Perkos, Y. Theodorakis, 2007. Function and Preference of Motivational and Instructional Self-talk for Adolescent Basketball Players. *The Journal of Sport Psychology*, 66, 88-101.
- Hardy, J., C. Hall, C. Gibbs, C. Greenslade, 2005. Skill performance: An Experimental Approach? *The online Journal of Sport Psychology*, 71, 94-101.
- Hardy, J., E. Oliver, E. Tod, 2009. A Framework of The Study and application of self-talk within sport. In. S.D. Mellalieu S. Hanton (Eds.), *Advances in applied Sport psychology. A review* (pp. 37-74). New York: Routledge.
- Hardy, L., G. Jones, D. Gould, 1996. *Understanding psychological preparation for sport: Theory and practice*. Chichester, England: Jones Wiley & Sons.
- Harvey, T., J. Van Raalte, B. Brewer, 2000. Relationship between self-talk and golf performance. *International Sports Journal*, 1, 84-91.
- Hatzigeorgiadis, A., Y. Theodorakis, N. Zourbanos, 2004. Self-talk in the swimming pool: The effects of self-talk on thought content and performance on water-polo tasks. *Journal of Applied Sport Psychology*, 16(2), 138-150.
- Hatzigeorgiadis, A., Zourbanos, N., Goltsios, C., & Theodorakis, Y. (2008). Investigating the functions of self-talk: the effects of motivational self-talk on self-efficacy and performance in young tennis players. *The Sport Psychologist*, 22, 458-471.
- Kolovelonis A., M. Goudas, I. Dermitzaki, 2010. The effects of instructional and motivational self- talk on students motor task performance in physical education. *Psychology of Sport and Exercise*. 1-6.
- Landin, D., 1994. The role of verbal cues in skill learning. *Quest*, 46, 299-313.
- Landin, D., E.P. Hebert, 1999. The influence of self-talk on the performance of skilled female tennis players. *Journal of Applied Sport Psychology*, 11, 263-282.
- Landin, D.K., G. Macdonald, 1990. Improving the overheads of collegiate tennis players. *Journal of Applied Research in Coaching and Athletics*, 5, 85-100.
- Linner K., 2011. The Effect of Instructional and Motivational Self-Talk on Self-Efficacy and Performance in Golf Players. (C-essay in sport psychology 61-90 ECTS credit) school of social and health sciences. Halm stad University.
- Mallett, C.J., S.J. Hanrahan, 1997. Race modeling: An effective cognitive strategy for 100 m sprinter? *The Sport Psychologist*, 11, 72-85.
- Perkos, S., Y. Theodorakis, S. Chroni, 2002. Enhancing performance and skill acquisition in novice basketball players with instructional self-talk. *The Sport Psychologist*, 16(4), 368-383.
- Pollock, B.J., T.D. Lee, 1997. Dissociated contextual interference effects in children and adults. *Percept Mot skills*. 84(3 pt 1):851-858.
- Rushall, B.S., 1984. The content of competition thinking. In W.F. Straub & J.M. Williams (Eds.), *Cognitive Sport Psychology* (pp 51-62). Lansing, NY: Sport Science Associates.
- Rushall, B.S., M. Hall, L. Roux, J. Sasseville, A.S. Rushall, 1988. Effects of three types of thought content instructions on skiing performance. *The Sport Psychologist*, 2, 283-297.
- Stamou, E., Y. Theodorakis, D. Kokaridas, 2007. Stefanos Perkos and Mel Pomeni Kessanopoulou, The Effect of self-Talk on The Penalty execution in Goalball, *British Journal of Visual Impairment*, 25;233
- Sellars, C., 1997. *Building self- confidence*. Leeds, UK: National Coaching Foundation.
- Theodorakis, Y., S. Chroni, K. Laparidis, J.V. Bebesto, E. Douma, 2001. Self-talk in a basketball shooting task.perceptual and motor skills, 92, 309-315.
- Sullivan, K. J., S. Kantak, A. Burtner, 2008. Motor Learning in Children: Feedback Effects on Skill Acquisition, *Physical Therapy Volume 88 Number 6:720-732*.
- Theodorakis, Y., R. Weinberg, P. Natsis, I. Douma, P. Kazakas, 2000. The effects of motivational versus instructional self-talk on improving motor performance. *The Sport Psychologist*, 14, 263-272.
- Tsiggilis, N., G. Daroglou, N. Ardamerinos, S. Partemian, P. Ioakimidis, 2003. The Effect of Self-Talk on Self-Efficacy and Performance in a

- Handball Throwing Test, Directory of Open Access Journals, 2, 1, 189-196
25. Weinberg, R.S., D. Gould, 2003. Foundations of sport and exercise psychology (3rd ed.). Champaign, IL: Human Kinetics.
26. Weinberg, R.S., R. Grove, A. Jackson, 1992. Strategies for building self-efficacy in tennis players: A comparative analysis of Australian and American coaches. *The Sport Psychologist*, 6, 3-13.
27. Zinnser, N., L. Bunker, J.M. Williams, 2006. Cognitive techniques for building confidence and enhancing performance. In J.M. Williams (Ed.), *Applied Sport Psychology: Personal growth to peak performance* 5th Ed. (pp. 349-381). New York, NY: McGraw-Hill Companies, Inc. Higher Education.