The effects of motivational and instructional self-talk on male basketball players' performance

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ABSTRACT: The purpose of this study was to compare the effects of motivational and instructional self-talk on performance of basketball dribbling, passing, and shooting skills. 60 subjects participated voluntarily in this study. They were randomly divided into three groups: control, instructional and motivational self-talk groups. Self-talk instructions were presented after the presenting of initial instructions. When the subjects' performance (dribbling, passing, and shooting) was evaluated they performed the self-talk instructions. Data were analyzed by One-way ANOVA and Tukey's Post Hoc test. The results showed that self-talk could improve the subjects' performance in dribbling, passing, and shooting. Also, the results showed that motivational self-talk could be more effective than instructional self-talk on the shooting performance and there was no significant difference between motivational and instructional self-talk on the dribbling and passing performance. In general, motivational and instructional self-talk can improve the performance but it is possible that the motivational self-talk will be more effective on some skills.

Keywords: Self-talk, instructional self-talk, motivational self-talk, basketball.

INTRODUCTION

The athletes spend much time on the skills training in different situations to achieve the better performances. On the other hand, the psychological stress is always associated with humans as an effective factor on the performance. So, athletes should apply cognitive and mental trainings alongside physical trainings to control their anxiety and arousal. Self-talk, relaxation, goal-settings, and motivation regulation are some examples of mental trainings (2). Self-talk (ST) is a mental skill that athletes can apply it before, during, and after skill performance. Meichenbaum, (1975) has referred it as a cognitive behavior modification center (19). ST refers to statements people make to themselves, either internally or aloud, and has been defined as an "internal dialogue in which the individuals interpret feelings and perceptions, regulate and change evaluations and cognitions and give themselves instructions and reinforcement" (Hackfort and Schwenkmezger, 1993) (7). Hardy, (2004) states that ST is refers to an athlete's oral statements (overt or covert) that it has essentially a multidimensional structure and one dimension of it is related to the performance (8). Bandura's self-efficacy theory is a theoretical framework that to help the better understanding of effects of self-talk on the motivation and performance consequences. Bandura expresses that ST affects on an individual's self-efficacy so an individual try to continue the skill execution. Finn, (1985) believes that ST can be applied to adjust the effort and to improve the self-confidence while Hardy (2009) knows it effective on the control of excitement and setting up of appropriate performances (11). Nideffer, (1993) use a change of attention to explain these effects (20). Landin (1999) proposed that ST can be an effective strategy for directing or redirecting attention to task relevant cues (16). Weinberg and Gould (2003) stated that athletes use ST in the different situations such as skill acquisition, the learning of task and new skills to eliminate bad habits, encouragement, the control of attention, and the mood changes (24). Zinsser), (2001) expressed that two major types of ST have been identified, namely instructional and motivational ST in addition to the positive and negative dimensions. It seems that Motivational ST refers to statements designed to facilitate performance by building confidence, increasing effort and energy

expenditure and creating a positive mood and instructional ST refers to statements designed to enhance performance by stimulating desired actions through focus of attention on the technical aspects of a skill (25). The researches have been done to survey two major types of ST but they had contradictory results. Theodorakis), (2000) compared instructional and motivational ST in four experimental tasks of two forms: fine and gross tasks (22). Tesiggilis), (2000) examined the effects of instructional ST on handball throwing skill in physical education students (N=46). They concluded that there was no significant difference between instructional ST group and control group (23). Hardy), (2005) studied the effects of instructional and motivational ST on the sit-ups task in athlete students (N=44). They stated that both ST improved the athletes' performance (10). Rezaei (2010) examined the effects of instructional and motivational self-talk on simple and complex skills. The results of this study showed that there was no significant difference between two experimental groups in the performance of simple task. There was a significant difference in favor of the instructional group in the performance of complex task (1). However there is studies about area of effects of different types of ST performance but the number of systematic studies is little and insufficient in this area. Also, lack of cognitive studies for survey of this effects and its relationship with some important components of task such as speed and accuracy is an import an obstacle to apply this cognitive strategy. According to the contradictory results of studies about the effects of types of ST on skills based on accuracy and the observing of studies about in this area with emphasis on fine and gross components, the nature of task (endurance and strength, simple and complex), there is a need for this study in the area of categories of skills (speed and accuracy). Last studies were examined the skills that require accuracy alongside endurance and strength skills but those were not examined simultaneously a skill with both speed and accuracy components. Therefore, a high arousal and anxiety can be destructive. Those are most important to achieve success in basketball skills such as dribbling, passing, and shooting. ST is known as a cognitive training that has many instructional and motivational aspects and keywords. But it is not yet clear that which instructional and motivational keywords can be useful in the effective learning. Therefore, it is necessary that studies are done about the types of ST to recognize the effects of this cognitive training. We hope that the results of this study will be used for basketball coaches and athletes and they can be able to decrease their anxiety by this strategy and to improve their performance. Thus, the differentiation of effects of instructional and motivational aspects of ST is examined in this study.

MATERIALS AND METHODS

Method
The method of this study research was semi empirical.

Participants
The statistical population of this study was all students who had passed 2units of basketball in Islamic Azad University Karaj branch except the physical education and sport sciences students. 60 students were selected by convenience sampling. All the subjects were in physical health and they had not a cognitive problem. They were not familiar with the skill of basketball.

Instruments and tasks
The instruments were used in the study includes a standard ground, digital stopwatch, barriers, and basketball.

Task Measures
1. Dribbling test. The dribbling test was part of the Harrison Basketball Battery (as cited in Barrow & McGee, 1979). It involved weaving in and around cones continuously for 30 seconds while dribbling the ball. Each cone successfully passed earned one point. According to Harrison's work, the test-retest reliability coefficient was 0.95 (Barrow & McGee, 1979).

2. Passing test. The Stubbs' Ball Handling Test was utilized (as cited in Barrow & McGee, 1979). On a vertical flat wall, three adjacent circles each one 30 cm in diameter were drawn at a distance of 160 cm from each other. The first circle was drawn at 151 cm above the floor, the second at 121 cm, and the third circle at 136 cm above the floor. The athlete stood behind a painted line located at 450 cm away from the wall. On the verbal signal "Ready, … Go" the athlete threw the ball towards the first circle using a chest pass, retrieved the ball and passed to the second circle, retrieved the ball and passed to the third circle, then retrieved the ball and passed to the second circle again, then to the first, second, third, etc. The athlete continued passing the ball to the three circles for 30 seconds consecutively. Each bounce, either inside the painted circle or on

its perimeter, earns one point. According to Stubb, a validity coefficient of 0.74 was achieved when the ratings were correlated with best of two trials on the test (Barrow & McGee, 1979).

3. Shooting test. A three-minute shooting test was used; similar to the one performed in the Weinberg, Fowler, Jackson, Bagnall, and Bruya (1991) study. More specifically, the participant was asked to execute as many shots as possible from any position on a marked perimeter of 366 cm radius from the hoop for 90 seconds. The participant was responsible for shooting and retrieving the ball himself. Each successful shot earned one point. Test-retest reliability has been reported at 0.91 (Weinberg)., 1991).

Procedure

The subjects were randomly divided into three groups (N every group=20): control group, experimental group (A) (instructional ST), and experimental group (B) (motivational ST) after 10 minutes warm up that it was included stretching exercises and the wrist and ankle warm up for 5 minutes and a slow running for 5 minutes.

First, the subjects performed the passing test. Instructional ST group were used "chest and center" cues with the execution of this test. Motivational ST group were used "I can" cue with the execution of this test. Control group performed the test without using of ST cues during the execution of this test.

After the rest break subjects performed the shooting test. Instructional ST group were used "wrist and center" cues with the execution of this test. Motivational ST group were used "I can" cue with the execution of this test. Control group performed the test without using of ST cues during the execution of this test.

After the rest break subjects performed the dribbling test. Instructional ST group were used "knee and Changing Hands" cues with the execution of this test. Motivational ST group were used "I can" cue with the execution of this test. Control group performed the test without using of ST cues during the execution of this test.

Every subject' score were recorded in his score sheet for each skill-test.

Self-talk content

The instructional ST cues used in this study were "chest and center" for passing test, "wrist and center" for shooting test, and "knee and Changing Hands" for dribbling test (Perkos, 2002). The instructional ST cues used in this study were "I can" for all three skill-tests (Theodorakis, 2000, Van Raalte, 2000).

Data analysis

The collected data were classified by descriptive statistical methods and were analyzed by One-way ANOVA and Tukey's Post Hoc test in this study. The SPSS software (version 19) was used for data analysis (α≤0.05).

RESULTS AND DISCUSSION

Results

The subjects' individual characteristics were presented in the table (1).

Table 1. The description of subjects' individual characteristics in the three groups

Statistical indices / Group	Mean and SD of subjects' age	Mean and SD of subjects' height	Mean and SD of subjects' weight
Motivational ST	7.20±1.03	1.74±0.40	69.15±6.03
Instructional ST	20.10±1.44	1.75±0.03	72.45±5.82
Control	21.40±1.63	1.75±0.03	72.10±5.20

Table 2. The results of One-way ANOVA for the determination of statistical differences between performances of instructional ST, motivational ST, and control groups in the shooting skill

Statistical indices / Group	Mean and SD of shooting	$F_{2,57}$	P
Motivational ST	1.24±7.84	19/972	0/000*
Instructional ST	1.45±6.25		
Control	1.21±8.10		

According to the results of table (2), there was a significant difference between instructional ST, motivational ST, and control groups in the shooting performance ($F_{2,57}$=19.972, Sig=0.000). Also the results of Tukey's Post Hoc test showed that the instructional and motivational ST groups were better than control group in the shooting performance.

In addition, this test showed that there was a significant difference between motivational ST group and instructional ST group in basketball shooting performance (sig=0.026).

Table 3. The results of One-way ANOVA for the determination of statistical differences between performances of instructional ST, motivational ST, and control groups in the passing skill

Statistical indices Group	Mean and SD of Passing	$F_{2,57}$	P
Motivational ST	1.34±7.85	8/575	0/001*
Instructional ST	1.53±8.05		
Control	0.88±6.50		

According to the table3, there is a significant difference between instructional ST, motivational ST, and control groups in the passing performance ($F_{2,57}$=8.575, Sig=0.001). Also the results of Tukey's Post Hoc test showed that the instructional and motivational ST groups were better than control group in the passing performance. In addition, this test showed that there was no significant difference between motivational ST group and instructional ST group in basketball passing performance (sig=0.876).

Table 4. The results of One-way ANOVA for the determination of statistical differences between performances of instructional ST, motivational ST, and control groups in the dribbling skill

Statistical indices Group	Mean and SD of dribbling	$F_{2,57}$	P
Motivational ST	1.14±12.45	6/687	0/002*
Instructional ST	1.40±12.25		
Control	1.20±11.10		

According to the table (4), there is a significant difference between instructional ST, motivational ST, and control groups in the dribbling performance ($F_{2,57}$=6.687, Sig=0.002). Also the results of Tukey's Post Hoc test showed that the instructional and motivational ST groups were better than control group in the dribbling performance. In addition, this test showed that there was no significant difference between motivational ST group and instructional ST group in basketball dribbling performance (sig=0.871).

Discussion and conclusion

The purpose of this study was to examine the effects of motivational and instructional ST on male basketball players' performance. The results of this study showed that ST could improve the subjects' shooting, passing, and dribbling performance. Although motivational ST was more effective than instructional ST in the basketball shooting performance and there was no significant difference between motivational and instructional ST in the basketball passing and dribbling performance.

The results about performance shooting, passing, and dribbling skills showed that motivational and instructional ST groups had better performance than control group. It was observed that there was statistically no significant difference between performance of motivational ST and instructional ST. These results of this study showed that ST was effective on the development of motor skills and it improved the skills execution. These results are consistent with the researches result of Rachel (1988) for swimming; Landin and MacDonald (1990) 100 m sprint; Molt and Hanrahan (1997) for golf; Harvey) (2000) for figure skating; Rezaei and Farokhi (2010) for simple and complex skills; Hatzigeorgiadis (2006) for swimming (1, 12, 13, 16, 17). It can be said that when task requires fine motor movements, an instructional ST strategy is more effective, whereas when task requires predominantly strength and endurance, both motivational and instructional strategies are effective (Theodorakis, 2000) (22). We suspect that subjects use instructional ST to acquire a movement pattern. Since the process of action produce and the outcome has an interactive relationship so a desired pattern will lead to the better results. On the other hands, motivational ST plays an energetic role in the subjects' achieving an environmental goal. We can say that both motivational and instructional ST can have the same effects on the performance in the learning of basketball skills. In addition, the performance of motivational ST is better than instructional ST in the shooting skill. According to the Hall's theory, an athlete's motivation is one of effective factors on the performance so that it has an energetic role and it improves an individual's performance. This result with the results of previous studies showed that instructional ST can be effective but it leads to little improvements in the behavior. It is consistent with the researches result of Gregg) (2004) for running, Messer) (1993) for gymnastics, Hebert) (1996) for tennis (5, 15, 18). It is conflict with Betterige)'s (2006) study that they stated instructional ST is inefficient on the elite skiers' jumping. The reason of this inefficient can be that elite athletes have learned the desired pattern of skill so when we present instructional ST, a part of the athlete concentration is on these instructions during a task execution and it leads the athlete does not pay all his/her attention to a skill

execution. Then, this issue can cause the athlete have a lack of efficiency from this ST and he/she puts it aside or if the athlete perform a skill with attention to this ST it will lead to decrease his/her performance. Hardy and Hall's (2005) study showed that athletes prefer to use motivational ST than instructional ST. according to researchers' statements, motivational ST help athletes to create motivation, self-confidence, and to increasing effort and to control their anxiety and arousal (10). Hardy) expressed that motivational ST enable athletes that they perform a task with better concentration and clear thoughts (9). Therefore, we suspect that the subject assign more attention to the throwing task execution of the shooting skill in the condition of instructional ST. So he does not pay all his attention to the environmental goal and this issue can be lead to weaker performance than motivational ST group. Also motivational ST can cause that subjects perform the skill with better concentration and self-confidence and more relaxation. This issue is an advantage for motivational ST.

The results of this study show that ST can be used as a strategy to increase the performance so that coaches can use interventional programs of ST for athletes' desired performance. Since the personality type is related to ST so it is recommended that further studies use ST cues proportional to personality type like this study due to uncertainties are resolved about the application of results of this study. In addition, the subjects were novice in this study. It is recommended that further studies can examine the effects of ST types at the different skill levels.

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