The Effectiveness of Mental Imagery upon Sport Imagery of Middle Schools Students in Futsal

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Abstract

This study explores whether or not mental imagery has positive effects sport imagery of middle schools students in futsal. Participants were ten middle schools students. A pre- post design was used to examine the effectiveness of mental imagery on sport imagery. Findings from this study indicated the effectiveness of mental imagery on sport imagery of the target athletes. On the basis of the findings, the study advocated for the effectiveness of mental imagery on sport imagery.

***Keywords*:** Mental imagery, sport imagery, Futsal, middle schools students

Introduction

Mental imagery is the cognitive rehearsal of a physical skill in the absence of overt physical movement. This imagination leads to creation of nerve impulses similar to those generated during real performance. Along with learning skills and achieving a higher level of performance, creating coordination between the mind and the body gains importance. Sport and exercise psychologists have discussed the importance of controlling attention and thought and people use various techniques in sport situations including imagery which is perhaps the most wide-spread technique in this regard. This mental technique helps the athlete in improving performance, concentration, self-confidence, practicing strategies, and maintaining fitness at the time of fatigue and injury (Orlick & Partington, 1988).

Sport psychologists have also tried to measure self-confidence, self efficiency and mental imagery ability and examine the relationship between these factors and success or failure of athletes. This suggests that athletes have different levels of psychological ability. In other words, some athletes have higher imagery ability and this can overshadow their success in competitions(Zeinab Zivdar et al., 2012).

Block (1981) identified human imagery, the use of visualization to imagine situations, as one of the most important topics in cognitive science. Two general theories were evolved.

- The first states that when we imagine a scene in our minds eye, we are scanning an actual image that has somehow formed in our brain. This is not to say that a brain surgeon could find actual physical pictures lodged in our brains, but that the images are as real to us as an image taken from the retina of the eye. This position is held by the so called pictoralists.

- The second, position is that of the descriptionist. The descriptionist argues that there is no such thing as a mental image. That is when we imagine, but the graphic and detailed nature of our language makes it seem so. Our thoughts, as it were, actually manufacture an image so clear that we think we are seeing one.

According to Henschen (2005), often imagery is thought of as synonymous with visualization, but this is inaccurate. Visualization is only one form of imagery. Most athletes are both visual and kinesthetic (feelers) imagers. Strangely enough, the more skilled an athlete becomes normally the more a “feeler” they become. The use of imagery as a mental training technique allows performers to draw on their imagination to prefect their performance.

Smith (1987) identified five basic principles of the application of imagery in sport.

These five principles include:

 Imagery skills can be developed.

 The athlete must have a positive attitude relative to the effectiveness of imagery.

 Imagery is most effective when used by skilled athletes.

 Knowing how to relax is a necessary precursor to the effective use of imagery

 There are two kinds of imagery, internal and external.

Many of the research studies carried out during recent decades have offered greater scientific insight into mental imagery. Feltz (2007) showed that mental techniques are the most widely used techniques for improving performance of athletes in competitive situations. Orlick and Partington (1989) identified elements of success as quality training, simulation training, quality imagery, daily goal setting, precompetition planning, competition focus planning, competition evaluation procedures, and distraction control. Hans et al. (1987) reported that high-level athletes have higher self-confidence, less anxiety, higher mental imagery ability, and greater commitment. Further, Jackson et al. (2004) showed that mental practice, when combined with physical practice, can improve the performance of a sequential motor skill in people who had a stroke.

In an experiment conducted by Roure et al. (1998), they found six specific autonomic nervous system (ANS) responses that correlated with mental rehearsal, thereby improving sports performance. The subjects were placed into an imagery group and a control group. The task measured in each group was based on their ability to pass an opponents serve to a given teammate, in the sport of volleyball. The experimenters measured the variations of the ANS during the motor skill and during the mental rehearsing sessions. The ANS parameters tested included: skin potential and resistance, skin temperature and heat clearance, instantaneous heart rate, and respiratory frequency. The results of the test revealed a strong correlation between the response in the actual physical tasks (both pre- and post-test volleyball) and during the mental imagery sessions. There existed a difference in the skills between the imagery and the control group, the former being the better. In addition, no clear difference was present between the pre- and post- tests in the control group. This study showed that mental imagery induces a specific pattern of autonomic response. These include: decreased amplitude, shorter duration and negative skin potentials when compared to the control group. As a consequence of the ANS, the imagery group was associated with better performance. In light of this experiment, Roure suggested that metal imagery may help in the construction of schema which can be reproduced, without thinking, in actual practice.

In a study which examined the effects of mental imagery on performance enhancement with 7-10 year old children (Orlick et al. , 1992), table tennis players were divided into three groups. The results indicated that the children who used mental imagery had significant improvement in the accuracy and quality of their shots compared with the control group. This study shows that mental imagery training for children can be beneficial.

The Beilock et al. (2001) study involved 126 novice golfers who were either assigned to a no-imagery control group or to one of six imagery type groups. The results showed that the accuracy of the imagery group improved regardless of imagery frequency (Beilock et al., 2001).

Mohd et al. (2009) investigated the effectiveness of imagery and coping strategies in sport performance. Participants were 106 person, both male (n=42) and female (n=64) aged between 17 and 45 years old who represented the different level of participants of sport. Participants completed the SIQ questionnaires to measure imagery skill while using ACSI-28 questionnaires to measure coping skill. Result showed Malay respondents is the higher interested in the study are 79 persons. Meanwhile, sports involved of respondents are others sport (archery, football/futsal, netball, rugby, hockey and athletics) which are 50%. The most level of age participated are 21 to 24 years old. Most probably, in this age level, some of them represented for national (n=38) and state (n=46).

The primary research question was, what effects will mental imagery have upon sport imagery of middle schools students in Futsal.

Method

Participants

The subject sample consisted of 10 preparatory school students boys, from grades one – to three. The age range of the participants was 13 to 15 years. For the study, athletes(students) were required to participate in both practices and competitions in Futsal .The athletes that participated in the study responded to an invitation to participate in a mental-skills training program. Informed consent was obtained from all of the participants.

Measure

Sport Imagery Questionnaires (SIQ). Hall, Mack, Paivio and Hausenblas (1998) developed the Sport Imagery Questionnaires (SIQ) for the purpose of measuring how an athlete uses imagery. The Sport Imagery Questionnaires (SIQ; Hall et al., 1998) assesses the frequency with which participants engaged in five types of imagery: CS (Cognitive Specific- specific skill), CG (Cognitive General- game plans and strategies), MS (Motivation Specific- specifics goals and goal oriented behaviors), MG-A (Motivation General-Arousal- arousal, anxiety and relaxation), and MG-M (Motivation General-Mastery- confidence and mental toughness). The SIQ has 30 items and is also scored on a 7-point Likert scale, which ordinarily ranges from 1 (*never*/*rarely*) to 7 (*often*). However, it has previously been found that having digit 1 refers to both "never" and "rarely" can be problematic for participants (Nordin & Cumming, 2006). The SIQ has adequate psychometric properties, with Cronbach's alpha coefficients ranging from 0.70 to 0.88 (Hall et al., 1998).

Procedure

In this study we used quantitative data to examine the imagery (SIQ) of athletes (students) who participated. The questionnaires were given to the selected athletes. The sessions of completing the questionnaires were took 5 minute when explanation of the purpose and information on the completion of the questionnaires. This to ensure that the athletes completed the questionnaires as required. The researcher then passed the questionnaires on to the participants to complete when they attended training sessions. All of the respondents have signed the consent letter to participate in this study. The completed questionnaires were collected back after finish the sessions.

Results

The objective of the study was to determine the effect of mental imagery upon sport imagery of middle schools students in Futsal. The treatment consisted of training through use of mental imagery. Table 1. shows Z Value results for the differences in pre- post- test mean rank scores for the experimental group in Sport Imagery Questionnaires. The table shows that (Z) values were(-2.041)for Cognitive Specific (CS),(-2.060) for Cognitive General (CG), (-2.071)for Motivation Specific (MS) (-2.048)for Motivation General-Arousal (MG_A), (-2.051)for Motivation General-Mastery (MG_M and(-2.060) for the composite score. These values are significant at the level (0.05) .This indicates that use of mental imagery had a positive effect on sport imagery of middle schools students in Futsal.

Table 1. *Z Values results for the comparison of mean rank scores of experimental group at pre- and post intervention in sport imagery*

Variables	**Negative Ranks**		**Positive Ranks**		**Z Value**	**Sig.**
	Mean	Sum	Mean	Sum		
Cognitive Specific (CS)	3	15	Zero	Zero	-2.041	0.05
Cognitive General (CG)	3	15	Zero	Zero	-2.060	0.05
Motivation Specific (MS)	3	15	Zero	Zero	-2.071	0.05
Motivation General-Arousal (MG_A)	3	15	Zero	Zero	-2.048	0.05
Motivation General-Mastery (MG_M)	3	15	Zero	Zero	-2.051	0.05
Composite	3	15	Zero	Zero	-2.060	0.05

Discussion

The present study evaluated the effects of mental imagery upon sport imagery of middle schools students in Futsal. The study results showed that mental imagery was effective for all students participated in this study.

Athletes who practice and who can master the imagery skill at the highest will have vast improvement in their sports performance. This was proved by Vealey and Greenleaf (2006), studies which have investigated the effect of imagery training have examined sport skills such as basketball shooting, volleyball serving, tennis serving, golf shots, football placekicking, figure skating, swimming starts, dart throwing, alpine skiing, karate skills, diving, trampoline skills, competitive running, dance, rock climbing and field hockey performance. Mamassis and Doganis (2004) said imagery has also been used as an intervention technique to enhance confidence. Furthermore Nordin, Cumming, Vincent and Mcgrory (2006) found that athletes use MG_M type of imagery in a deliberate way, they also found that high level athletes use more deliberate images.

Paivio (1985) developed an analytic framework that identified the functional roles through which imagery influences sport performance. The frame work indicates that imagery affects performance through both cognitive and motivational functions with each operating at a general and specific level. Motivational specific (MS) imagery use involves imaging goal and goal attainments. Cognitive general (CG) imagery entails rehearsing strategies of play and routines and cognitive specific (CS) imagery involves the rehearsal of specific skills. However, Hall and his colleagues (Hall, Mack, Paivio, & Hausenblas, 1998) later identified a fifth function of imagery use in sport when the further divided the motivational general function into motivational general_mastery (MG_M) and motivational general_ arousal (MG_A) functions. MG_M imagery is used to imagine oneself in a difficult situation and then image overcoming that difficultly. The MG_A imagery function may used to control athletes emotions.

In summary, mental imagery has great effect on sport imagery of middle schools students who participated in this study. Overall, results from this study contribute to the mental imagery literature.

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