

## The Effect of Imagery Type on Self-Efficacy for Discrete and Continuous Soccer Skills

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### ABSTRACT

The purpose of this study was to evaluate the effects of cognitive specific and motivational general-mastery imagery on self-efficacy for discrete and continuous skills in 12-14 years old learners. Four soccer teams from soccer Academies were selected (age:  $12.85 \pm 0.45$  years). Comparing penalty and dribbling self-efficacy before and after eight weeks of cognitive specific imagery for dribble, cognitive specific imagery for penalty and motivational imagery general – mastery with control group, did not show a significant difference. Imagery instructions may be age appropriate. The use of mental imagery in the 12-14 years participants should be used with caution and under the supervision of expert Sport Psychologists.

**Key words:** Cognitive specific imagery, Motivational general-mastery imagery, Soccer, Self-efficacy.

### INTRODUCTION

Self-efficacy is defined as the judgments of person's capabilities to organize and execute actions required to attain designated types of performances (Bandura, 1997). It is affected by performance accomplishments, vicarious experiences, verbal persuasion, physiological state, imaginary experiences and emotional states (Bandura (1977); Maddux (1995)). Self-efficacy affects task choices, effort and persistence. (Taken from Klug, 2006). Educators are increasingly growing sports athletes emphasize the importance of mental preparation and mental training strategies that can help their team. (Cote *et al.*, 1995). When an athlete participates in a session of imagery, positive emotion is experienced and lead to self promotion that will increase self-imagery.

On the other hand, one explanation for the effectiveness of mental interventions is self-efficacy. Martin *et al* (1999) motivational general-mastery is the type of imagery that contains coping and mastery in challenging situations. It seems if

someone wants to develop self-confidence, should imagine the confidence and self-efficacy.

While some research has provided evidence of the positive effects of imagery on self-efficacy (Callow & Hall (2001) and Jenny *et al.*, 2013), others have reported different findings (Ramsey *et al.*, 2010, AfsanepurPurk *et al.*, 2011). Jenny *et al* (2013) found that motivational general mastery imagery enhanced self-efficacy in five squash players.

Ramsay *et al* (2010), studied PETTLEP based imagery. There was not significant effects difference between skill-based and emotion-based imagery on self-efficacy. A recent review by Martin *et al* (1999) clarified the observed inconsistency in the relationship between imagery and self-efficacy. These confounding findings can be explained by the function of imagery used in studies. Hence, the main question of this study is: Does motivational general-mastery imagery improve self-efficacy for continuous and discrete skills in very young soccer players?

### METHODOLOGY

This study was a quasi-experimental design with pre-test - post test. Four soccer teams completed penalty self efficacy scale (klug, 2006) and dribbling self efficacy scale (hall *et al*, 2009), then experienced one of this four: cognitive specific imagery for penalty, cognitive specific imagery for dribbling, motivational general-mastery imagery, additional flexibility training . Intervention lasted 8 weeks, 7 times per week. Imagery ability of participants were above 16 based on MIQ-R.

Penalty self-efficacy was measured based on Klug penalty self efficacy scale (Klug, 2006) . Reliability coefficient of the questionnaire was (0.87) and its Cronbach's alpha coefficient was 0.96.

self-efficacy for soccer dribbling was measured based on the scale presented by Hall, Monroe Chandler, Fishburne and Hall (2009). Reliability coefficient and Cronbach's alpha coefficient were (0.92), (0.63) respectively.

Ancova and repeated measure general linear model was performed by SPSS 16. Significance level was 0.05.

### RESULTS

Seven of participants due to absent, loss of interest and insufficient imagery ability were excluded. Table 1 shows Descriptive statistics .

To compare the groups in penalty self-efficacy, the scores were converted to standard z scores then ANCOVA was performed

Due to the assumption of Muchly's Sphericity (sig = 0.106),and according to  $df = 2$ ,  $F = 1.292$ , which placed confidence level at 0.278, we concluded that regardless of the maturity offset and the type of imagery, No significant differences in penalty self-efficacy were found in pre-test, acquisition and retention. With respect to  $df = 2$ ,  $F = 1.390$ , which placed confidence level at 0.253, we can conclude that the interaction between the maturity offset and penalty self-efficacy score has no significant difference in pre-test, acquisition and retention. According to  $F = 1.012$ ,  $df = 6$ , which is located at a confidence level of 0.420, we concluded that the interaction between type of intervention and penalty self-efficacy score has no significant differences between pre-test, acquisition and retention.

So, eight weeks of cognitive specific or motivational general –mastery imagery did not result higher scores on penalty self-efficacy scores.

Due to the lack of Muchly's Sphericity assumption (sig = 0.042), the amendment Greengouse-Geisser was used. According to  $df = 1.834$ ,  $F = .026$ , which placed confidence level at .967, we concluded that regardless of the maturity offset and intervention type, dribbling self-efficacy scores, between the pre-test, acquisition and

**Table. 1: Descriptive Statistics**

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
PSEpretets	73	36.00	71.00	47.0137	8.92016
PSEacquisition	73	37.00	71.00	50.2603	8.22940
PSEretntion	73	36.00	65.00	49.4658	6.87807
DSEpretest	73	13.00	22.00	17.3836	2.07920
DSEacquisition	73	12.00	24.00	18.9863	2.13107
DSEretention	73	11.00	22.00	17.6027	2.32582
VMIQpretest	73	16.00	28.00	20.9863	3.80604
KMIQRpretest	73	16.00	28.00	20.6301	3.84602
Chronologicalage	73	12.01	13.82	12.8590	.45517
Maturityoffset	73	-2.85	-.84	-2.0772	.50934
Valid N (listwise)	73				

retention has no statistically significant differences. According to  $F = 0.032$ ,  $df = 1.834$ , which placed confidence level at 0.960, we concluded that the interaction between maturity offset and dribbling self-efficacy score between the pre-test, acquisition and retention, has no significant differences. According to  $df = 5.503$ ,  $F = 1.161$ , which placed confidence level at 0.332, we concluded that the interaction between type of intervention and dribbling self-efficacy scores in pretest, acquisition and retention has no significant differences. So, eight weeks of cognitive specific and motivational general-mastery imagery will not result higher self-efficacy score in soccer dribbling task in the acquisition and retention.

About main effect of group for the acquisition of penalty self-efficacy, according to  $df = 3$ ,  $F = 3.189$ , which placed confidence level at 0.029, in penalty self-efficacy scores, there were no significant differences between groups. The eight-week motivational general mastery imagery did not lead to higher self-efficacy scores than cognitive specific imagery.

According to  $F = 2.416$ ,  $df = 3$ , which placed confidence level at 0.074, we concluded, in penalty self-efficacy scores at retention phase, there was no significant difference between groups. The eight-week motivational general mastery imagery did not lead to higher penalty self-efficacy scores than cognitive specific imagery. According to  $df=3$ ,  $F=0.333$ , which placed confidence level at 0.801, we concluded, in dribbling self-efficacy scores at acquisition phase, there was no significant difference between groups. Thus, eight-week motivational general mastery imagery did not lead

to higher self-efficacy scores than cognitive specific imagery. According to  $F = 1.082$ ,  $df = 3$ , which is placed confidence level at 0.363, we conclude that at retention phase, in dribbling self-efficacy, there was no significant difference between groups. Thus, eight-week motivational general mastery imagery did not lead to higher self-efficacy scores than cognitive specific imagery.

## DISCUSSION

Eight weeks of intensive cognitive specific or motivational general-mastery imagery didn't lead to improved self-efficacy score on discrete and continuous skill. This finding is inconsistent with the predictions of the model of Martin and colleagues (1999). Jenny *et al* (2013), Monroe-Chandler *et al.* (2008), Ramsey, Cumming and Edwards (2008) presented evidence for improving self-efficacy after imagery, Ramsey *et al* (2010) and Afsanepurk *et al* (2012)) did not observe a significant effect of imagery on self-efficacy. Afsanepurk *et al* (2012) suggested that lack of time between imagery and measurement of self-efficacy in was the reason for the lack of effectiveness of mental practice. Monroe-Chandler *et al* (2008) examined the relationship between motivational general-mastery imagery and self-confidence in adults. Their findings were explained by the model of Martin *et al* (1999).

Given the young age of the participants in this study, weak transfer of instructions may be one of reasons. Other researchers have suggested that, other modes of transmission such as a videotape or audiotape instructions be studied. Also, individualizing imagery instructions may be important.

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