Motivation as a Measure of Motor Skills Learning Among Novice Soccer Players

Dr. Anshul Singh Thapa[1], Dr. Inder Prakash Nagi[2]

ABSTRACT

The present investigation was an attempt to find out the effect of two motivational techniques i.e., feedback training and goal setting, in learning motor skills. Feedback about the learning made by the students in a given task was provided immediately after the practice session. Similarly, goals were set for the students by using IGS Model for every week. The skills were taken from the game of Soccer i.e., passing, dribbling and kicking. There were two experimental groups, i.e., experimental group (feedback training), and experimental group (goal setting) and a control group. Each group carries 15 students. The test items taken for the study were: passing the ball in air, dribbling and kicking for accuracy from Van Rossum Soccer Skill Test constructed by Van Rossum (1968). In order to examine the hypothesis of the study, GLM Univariate Analysis of Covariance was used. The result of the study suggests that the feedback training and goal setting plays a vital role in learning. These techniques keep students motivated and committed to learn a task.

INTRODUCTION

High performance in any sport depends upon many factors and one among them is the technical aspect of the players. Techniques are the fundamentals for the concerned sports and if learned properly have greater impact on performance in that sports. But, sometimes, learning becomes monotonous and players lose their interest in learning skills. So, it is the duty of the coach to keep the players, motivated, to learn complex skills. The present investigation is an attempt to see the effect of two motivational techniques in learning complex motor skills.These skills were taken from Soccer; and the skills are passing, dribbling and kicking. The purpose of the study was to find out the effect of certain motivational techniques on learning Soccer skills. The motivational techniques used in the present study were feedback and goal setting.

The interval goal-setting model

The Interval Goal-Setting (IGS) model was devised by Frank O'Block and Frederick Evans, in the early eighties, to provide a quantifiable means of setting training targets. The model was developed in order to help coaches and athletes set more realistic and achievable goals, and it takes into consideration the athlete's past five

1. Assistant Professor, Department of Physical Education – Teacher Education, Learning and Research, Postgraduate Government College, Sector-11, Chandigarh
2. Senior Football Coach, Sports Authority of India, NSNIS, Patiala

performances in determining the target performances. It embodies most of the fundamentals of SMART goal-setting. The IGS model works most effectively for short-term goals. The following variables are required in the IGS model computation:

A= your average time over the last five performances

B= your best time within the last five performances

C = the difference between your average and best performances (A - B)

D= the lower boundary of your target interval

E= the interval midpoint

F= the upper boundary of the target interval

Motor Skill Learning

According to **Mark G. Fischman** and **Joshep B. Oxendine**, "motor skill learning is a set of internal processes, leading to relatively permanent changes in the capability for skilled movement behavior."

The process of motor skill learning undergoes three different phases i.e., cognitive phase, associative phase and autonomous phase. The quality of learning depends upon the motor programme (A motor programme is an internal programme similar to computer programme and contains a set of instructions to guide movement).

It was hypothesized before the study that there is no significant difference in the mean scores of the three groups, i.e., experimental group (feedback training), experimental group (goal setting) and control group in passing ability, dribbling ability and kicking ability of Soccer.

METHODOLOGY

To develop the desired motor programme some videos of the Soccer skills were shown to all the students of three different groups in many sessions together, so that they could develop the correct motor programme. The students (N=45) were divided into three different groups i.e., Experiment Group–I (Feedback Training Group), Experimental Group –II (Goal Setting Training Group) and a Control Group. The three groups use to attend the same instructional classes together. In order to increase the internal validity of the experiment, the three groups were selected from one class living in almost same environment i.e., boys hostel of Postgraduate Government College. They used to have same type of food in the Hostel's mess. At the same time, to enhance the external validity of the experiment certain factors like their life style, habits, daily routine of the subject of all the three groups were not altered.

Experimental group – I (Feedback Training Group):

This group was given feedback about their learning after every instruction class. There was a penal of three experts

who use to observe the performance of the students of this group during the instructional class. A set performa of evaluation of performance, which contained the areas of the common faults were given to the experts, so that uniformity could be established in order to provide feedback to the students. These performae of evaluation of performance used to upgrade after every week. Their faults which were recorded individually, by an expert, of all the students were discussed with the students after every instructional class. Students were asked to correct their fault when they perform the same task in the next instruction class.

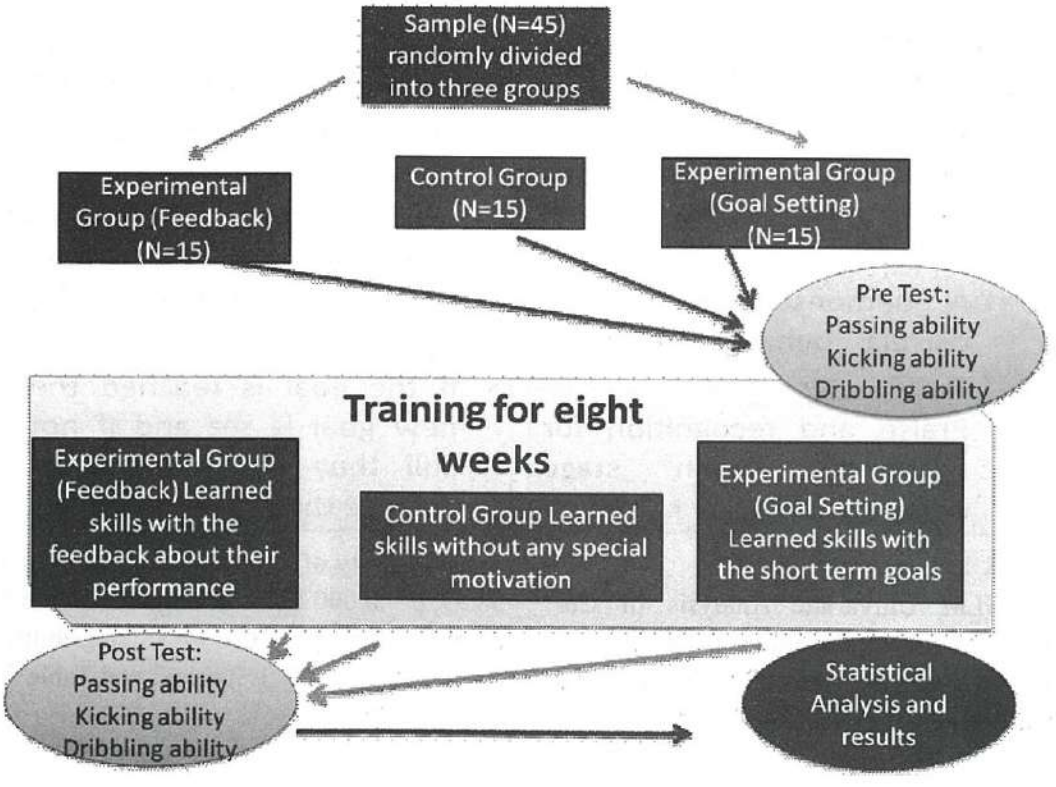
Experimental group – II (Goal Setting Training Group):

Students of this group were assessed after the end of every week and based on their performance on the last day goals used to be set for each individual separately. In order to set SMART goals Interval Goal Setting Model devised by Frank O'Block and Frederick Evans in the early eighties was used.

Control group – I:

Unlike other two groups the students of this group were not given any specialized training, they used to attend their normal instructional class in which they used to practice their skills.

Design of the study



Participants

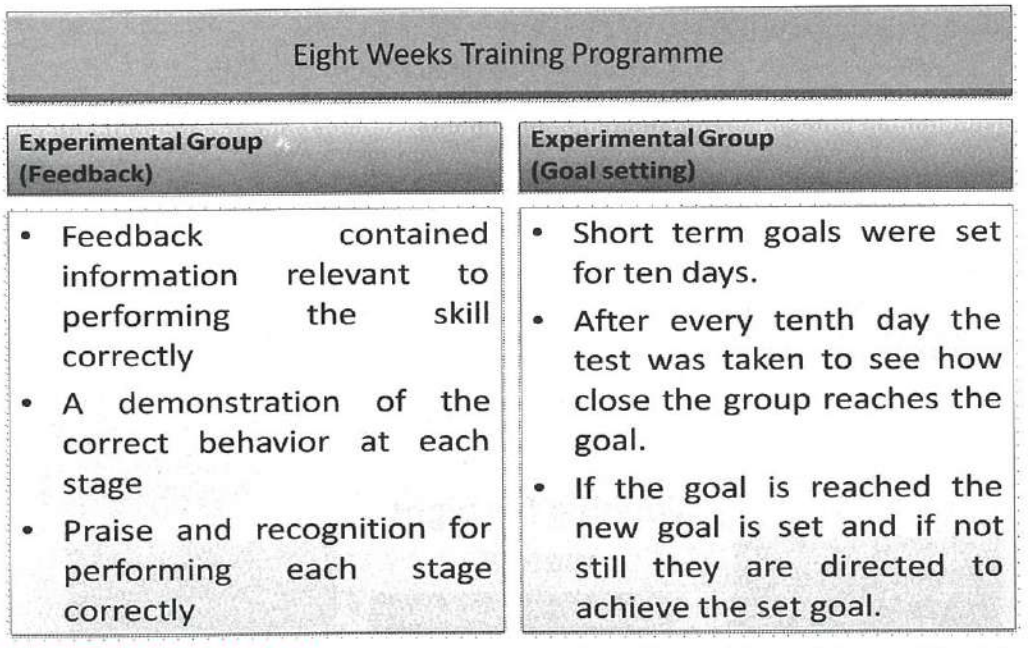
The samples selected for the study were 45 Physical Education male students studying in the first year of Bachelor of Physical Education, Department of Physical Education–Teacher Education Learning and Research, Post Graduate Government College, Sector-11, Chandigarh. Their age range between 17-19 years. The subjects were randomly divided into three different groups i.e., Experimental Group - I (Feedback Training Group), Experimental Group - II (Goal Setting Group) and Control Group.

Tools

The test items for the study were taken were passing the ball in air, dribbling and kicking for accuracy from Van Rossum Soccer Skill Test constructed by Van Rossum (1968).

Statistical Techniques

In order to examine the hypothesis of the study, GLM Univariate Analysis of Covariance was used. Before conducting an ANCOVA – the homogeneity-of-regression (slope) assumption was first tested. The test evaluates the interaction between the covariate and the factor (independent variable) in the prediction of the dependent variable. The Pairwise comparison was also done to see which group differs from other.



RESULTS & DISCUSSION

GLM Univariate Analysis of Co-variance was conducted for the analysis of the data in present study. The ANCOVA was significant, $F(2, 56) = 4.97$, $p = 0.010$ for passing ability of the ball in air; $F(2, 56) = 38.99$, $p = 0.000$ for dribbling ability; and $F(2, 56) = 20.58$, $p = 0.000$ for kicking ability. As shown in Table 1, Table 2 and Table 3, respectively.

Table-1 : ANCOVA Summary for passing ability of the ball in air by the three groups

Source	SS	df	MS	F	p-value
Pre-test (Covariate)	125.13	1	125.13	40.4	.000
Groups	30.77	2	15.38	4.97	.010
Error	173.41	56	3.09		
Total	344.85	59			

Table-2: ANCOVA Summary for dribbling ability by the three groups

Source	SS	df	MS	F	p-value
Pre-test (Covariate)	0.48	1	0.48	2.11	.152
Groups	17.61	2	8.81	38.99	.000
Error	12.65	56	0.22		
Total	30.43	59			

Table-3: ANCOVA Summary for kicking ability by the three groups

Source	SS	df	MS	F	p-value
Pre-test (Covariate)	254.03	1	254.03	44.70	.000
Groups	233.94	2	116.97	20.58	.000
Error	318.27	56	5.68		
Total	780.73	59			

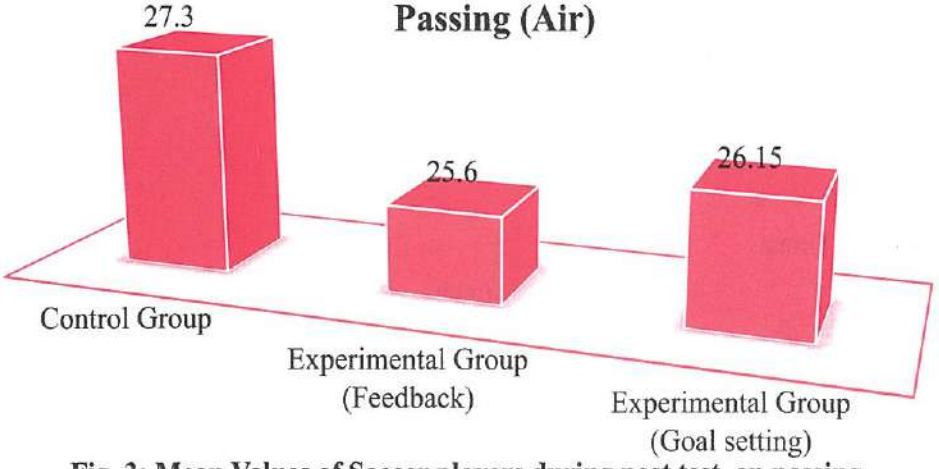


Fig. 3: Mean Values of Soccer players during post test, on passing ability of the ball in air

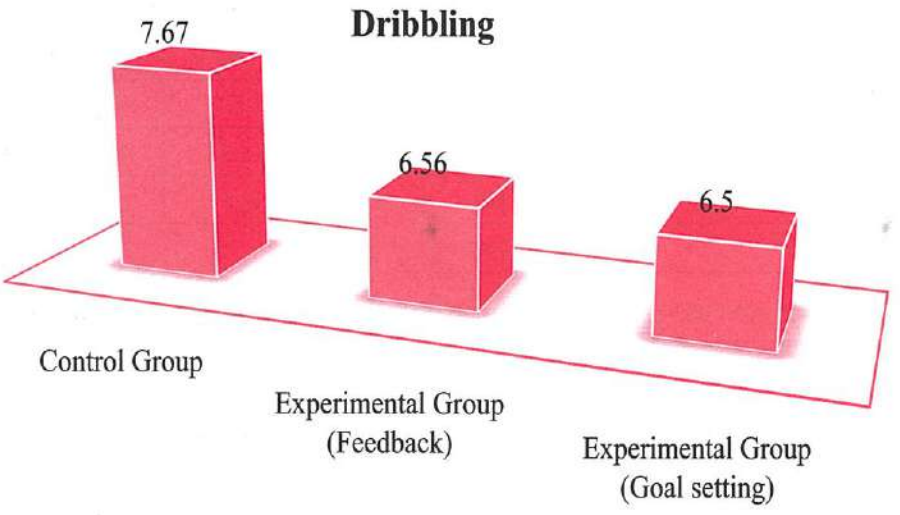


Fig. 4: Mean Values of Soccer players during post test on dribbling ability

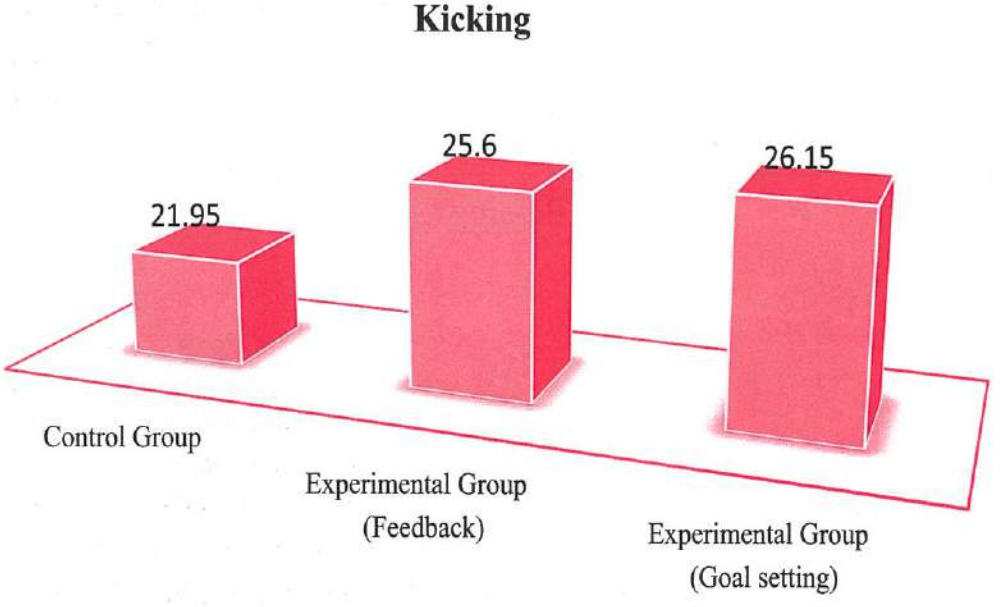


Fig. 5: Mean Values of soccer players during post test on kicking ability

Follow-up test was conducted to evaluate pair-wise differences among the adjustment means for the three groups. The results showed that those who were given goal have significant improvement than the other groups in passing ability, whereas, both the experimental groups have shown significant improvement than the control group in dribbling and kicking ability, as shown in Table 4, Table 5 and Table 6, respectively.

Table-4: Pairwise comparison and effect size of passing ability of the three groups

Group	Mean	Adjusted Mean	1	2	3
Control Group	27.30	26.96		1.13	0.61
Experimental Group (Feedback)	25.60	21.33	1.13		1.74*
Experimental Group (Goal setting)	26.15	19.36	0.61	1.74*	

*Significant at 0.05 Level

Table-5: Pairwise comparison and effect size of dribbling ability of the three groups

Group	Mean	Adjusted Mean	1	2	3
Control Group	7.67	7.67			
Experimental Group (Feedback)	6.56	6.62	1.08*		
Experimental Group (Goal setting)	6.50	6.48	1.29*	0.21	

*Significant at 0.05 Level

Table-6: Pairwise comparison and effect size of kicking ability of the three groups

Group	Mean	Adjusted Mean	1	2	3
Control Group	21.95	21.72			
Experimental Group (Feedback)	25.60	25.73	3.99*		
Experimental Group (Goal setting)	26.15	26.15	4.37*	0.38	

*Significant at 0.05 Level

Sven, Florian, Alwine and Gunther (2015) examine the influence of goal-setting on worker performance in an industrial production process. The major results are that even without financial incentives goal-setting improves worker performance by 12 to 15% compared to the situation where no goals were defined. This holds true for the groups which had to maximize either output quantity or output quality, as well as for the group which was obliged to be as energy efficient as possible. Alan (2009) Goal setting is one of the most important skills taught to athletes in order to help them achieve optimal performance. The goal-setting process helps athletes understand where they are currently and also where they want to go. A mental skills training consultant or sport psychologist can teach an athlete how to set systematic goals that are focused on the process and performance rather than focused on the outcome of competition. Similarly, in the present investigation while learning passing

skill (air) of Soccer significant improvement have been shown by those who were given goals to achieve during the training period than the other two groups i.e., experimental group (Feedback) and Control group.

Maria, Ferenik and Efthimis (2017) investigated the effects of feedback on the freestyle swimming learning and performance of novice swimmers. Sixty male (Mage=18.7, SD=1.82) first year students were randomly assigned into four groups: self-modeling, expert-modeling, verbal, and control group. The intervention program lasted for seven weeks. Participants were evaluated in 25m freestyle swimming, with a pool buoy between their legs and breathing every three hands through a pre-test, a post-test and a retention test. The result revealed that self-modeling group was the most effective, in comparison with the other types of feedback, in terms of improvement of the technique in novice swimmers. There were no differences between the groups in the speed performance of 25m freestyle swimming. Overall, the present study provides valuable evidence for the effects of self-modeling on performance in freestyle Swimming, and encourages research to further explore such effects between different types of feedback in real training conditions.

George, Evandros and Thomas (2008) investigated the effects of three corrective feedback methods, using different combinations of correction, or error cues and positive feedback for learning two badminton skills with different difficulty (forehand clear - low difficulty, backhand clear - high difficulty). Outcome and self-confidence scores were used as dependent variables. The 48 participants were randomly assigned into four groups. Group A received correction cues and positive feedback. Group B received cues on errors of execution. Group C received positive feedback, correction cues and error cues. Group D was the control group. A pre, post and a retention test was conducted. A three way analysis of variance ANOVA (4 groups X 2 task difficulty X 3 measures) with repeated measures on the last factor revealed significant interactions for each depended variable. All the corrective feedback methods groups increased their outcome scores over time for the easy skill, but only groups A and C for the difficult skill. Groups A and B had significantly better outcome scores than group C and the control group for the easy skill on the retention test. However, for the difficult skill, group C was better than groups A, B and D. The self confidence scores of groups A and C improved over time for the easy skill but not for group B and D. Again, for the difficult skill, only group C improved over time. Finally a regression analysis depicted that the improvement in performance predicted a proportion of the improvement in self confidence for both the easy and the difficult skill. It was concluded that when young athletes are taught skills of different difficulty, different type of instruction, might be more appropriate in order to improve outcome and self confidence. A

more integrated approach on teaching will assist coaches or physical education teachers to be more efficient and effective. In the line of the above two research the results of the present study also suggests that groups who were given feedback and goals to achieve during the training have shown significant improvement in learning dribbling skill of Soccer.

CONCLUSION

Further, the two groups who were given feedback and goals to achieve during the training have shown significant improvement in learning kicking skill of Soccer. It may therefore be concluded that the feedback training and goal setting plays a vital role in learning. These techniques keep students motivated and committed to learn a task.

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