

ISSN : 2229-3558

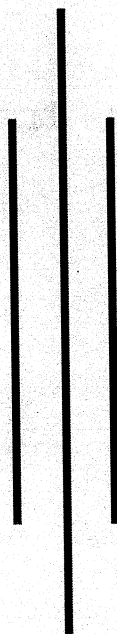
Vol. 13 No. 1

Jan to June 2013

---

# INDIAN JOURNAL OF SPORTS STUDIES

---



---

**OFFICIAL JOURNAL OF INDIA SOCIETY  
OF SPORTS SCIENTISTS  
(ISSS)**

---

[RNI - No. 11222/Eng./2001]

# INDIAN JOURNAL OF SPORTS STUDIES

## CONTENT

<b>S. No.</b>	<b>Subject</b>	<b>Writer</b>	<b>Page No.</b>
1.	A Study of Self Concept and Adjustment among Male and Female Volleyball Players	Dr. Shiv Chauhan	1
2.	Acute Effects Of Static And Proprioceptive Neuromuscular Facilitation Stretching On Agility Performance In Youth Soccer Players	Dr. Minakshi Pathak Mr. Praveen Saroha	8
3.	Role of Infrastructure in physical Education & Sports	Dr. Rajesh Triparthi Ms. Minakshi Pathak	19
4.	Multiple-Choice Question Framing Guidelines	Prof. N. B. Shukla Tushar Dar Shukla	26
5.	Evaluation Of Training Effectiveness Of Small Scale Industry Of Mandideep	Dr Dinesh Nagar Ms. Minakshi Pathak Prof. N.B. Shukla	34

# **A Study of Self Concept and Adjustment among Male and Female Volleyball Players**

---

**Dr. Shiv Kumar Chauhan**

Asst. Professor

Dept. of Physical Education & Sports

Gurukula Kangri Vishwavidyalaya, Haridwar-249404 (U.K)

## **ABSTRACT**

The present study is an attempt to find out the effect of self concept and level of adjustment among male and female volleyball players of G.K.V, Haridwar (for male players) and other PG college of district Haridwar (for both male & female players). A total number of 200 players out of which 115 were male and 85 were female under 18-28 yrs of ages were randomly selected for this study. All the players of this study were taken from the various Institutions of district Haridwar by using random sampling technique. Only interfaculty and Inter collegiate level players with good skill knowledge about playing volleyball were taken as a sample of the study. The information regarding this study was collected by using Self concept questionnaire (SCQ) constructed and standardized by Dr. Raj Kumar Saraswat (1992) and Adjustment Inventory for College Students (AICS) constructed and standardized by Dr. AKP Sinha and Dr. R.P Sinh (1992) were used. To analyzed the research data 't' test was used. Finding reveled that male volleyball players were having significantly better on level of adjustment as compare to female players but in the analysis of self concept, female volleyball players were showing greater degree of self concept as compare to male volleyball players. Justification. The results of the study reflect the level of adjustment and self concept of male and female volleyball players. The following reason may supported the result of this study Key Word: Self Concept, Adjustment, Volleyball Player's

## **INTRODUCTION:**

Games and Sports are the essential part of our daily life. If we arrange our life style as per the natural phenomenon so we can achieve more as per the requirement of the daily routine. In the same way self concept will help us to

develop the attitude towards self while adjustments help us to set a pattern in between favorable and unfavorable condition. Self concept is a dominant element in personality pattern; therefore, the measurement of self concept becomes essential. A Variety of methods and technique have been developed to measure self concept. The problem of measuring the self concept to a large extent still remains unsolved. The difficulty in conducting research in such an area is that the concept of self is not very well defined and is in a state of flux. There are several terms that are virtually synonymous with self concept among them are 'Self image' the 'Ego' 'Self understanding', 'Self perception' and 'Phenomenal Self". Self concept has been referred by Lowe (1961) as one's attitude towards self and by Paderson (1965) as an organized configuration, of perception, beliefs, feelings, attitudes and values which the individual view as per part of characteristics of him. Rogers (1951) defined self concept as 'An organized configuration of perception of the self which are admissible to awareness. It is compared of such elements as the perceptions of one's characteristics and abilities, the perception and concept of the self in relation to others and to the environment, the value qualities which are perceived as associated with experiences and objects, and the goals and ideals which are perceived as having positive or negative valence." Saraswat and Gaur (1981) described self concept as "The self concept is the individual's way of looking at himself. It also signifies his way of thinking, feeling and behaving", Lynche, Norem-Hebeisen and Gergen (1981) have quoted Willium fit's suggestion that attention should be shifted from global measures of the self concept to configurations of responses across self concept dimensions. Such configurationally pattern should be more sensitive to environmental effects.

An examination of various instruments developed to measure self concept reveals that these measures have not incorporated many important components of self concept presumed in theory and in observation. These measures do not deal with all aspects of self concept, but provide narrow and limited information depending upon purpose and interest of investigators. Adolescence is a period of life with its own peculiar characteristics and problems. Hence for deep penetration into their perceptions their own physical, social, temperamental, educational, moral and intellectual spheres of self concept need to be explored. Adjustment is the main component of human life. Living is a process of adjustment and it is a process of unique importance in human life. It is a satisfactory and harmonious relationship of an organism to its environment. Thus, the term adjustment may he defined as, "the

process of finding and adopting modes of behaviour suitable to the environment or to the changes in the environment".

The process of adjustment is slowly grow with development and started from very early stage. When he is in childhood, he requires adjustment with his mother in the form of caring and loving and in exchange of this he provides a loving smile with their naughty activity. By the continuous receiving such naughty activity, mother increase the amount of care and love and this caring and loving that he received from his mother is the main foundation of adjustment. In other word we can say that care and love are the two important aspect of adjustment. When a person is in the adulthood he fined the adjustment in the form of recognition. In this stage, he is willing to make self identification with their own. In this stage of development, he has direct contact with home, school and society that play important role in learning of skillful adjustment.

**Objective of the Study:** The main objective of the study is to find out the effect of the self concept and level of adjustment in male and female volleyball players of various institutions of district

**Haridwar:** Hypothesis: To find out the main objective of the study the following hypothetical statements was developed in view of self concept. adjustment, male, female and age group also:

- 1- There would be significant difference between male and female volleyball players in terms of adjustment
- 2- There would be significant difference between male and female volleyball players in terms of self concept.

## **MATERIAL AND METHODS:**

**Subject:** The present study was design on 200 male and female volleyball players of district Haridwar studying in GKV and other PG Institution of the adjoining area. In 200 respondents 115 were male and rest 85 were female. The players both male and female which were included in this study were inter faculty or inter collegiate level participants.

**Tools:** To analyze the whole data of the sample the following questionnaire were used:

- 1- Self Concept Questionnaire (SCQ) constructed and standardized by Dr. Raj Kumar Saraswat (1992) used to measure the self concept
- 2- Adjustment Inventory for College Students' (AICS) constructed and standardized by Dr. AKP Sinha and Dr. R.P Singh (1992) used to measure the level of adjustment

**Procedure:** The data were collected from the 200 male and female volleyball players (115 were male and 85 were female). Self concept and adjustment inventory for college students were administered on the subject for the collection of research data.

**Statistical Technique:** The 't' test was used to compare the psychological variables i.e. Self concept and adjustment inventory for college students among male and female volleyball players. Further the level of significant was set at 0.01 levels.

## RESULTS AND INTERPRETATIONS:

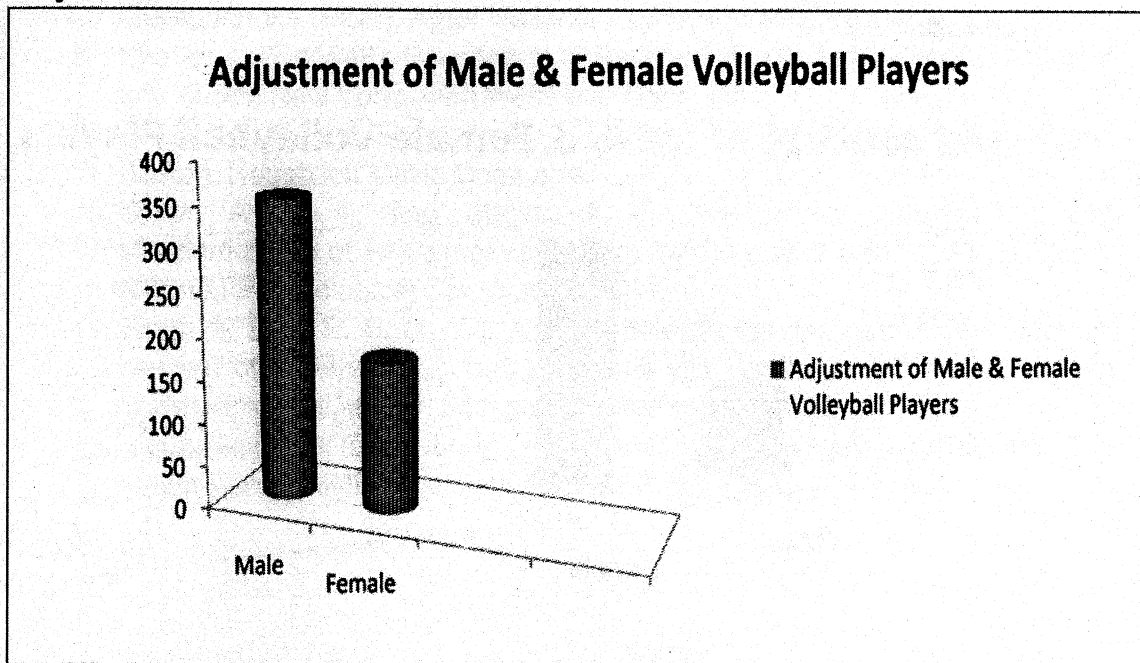
**Hypothesis No. 01** There would be significant difference between male and female Volleyball Players in terms of Adjustment.

**Table- 1 shows the mean difference of male and female volleyball players on adjustment**

Respondents/ Variables	Volleyball Players (200)						't' value
	Male			Female			
	N	Mean	SD	N	Mean	SD	
Adjustment	115	353.27	22.51	85	174.18	15.78	471.28

The table-1 reveals that male players shows a favorable level of adjustment score (M=353.27) in comparison to female (M=174.18). The 't' value (t= ) shows that male were having significantly better level of adjustment in comparison to female.

Fig.-1 shows the mean score of male and female volleyball players on adjustment.



Hypothesis No. 02 There would be significant difference between male and female volleyball players in terms of self concept.

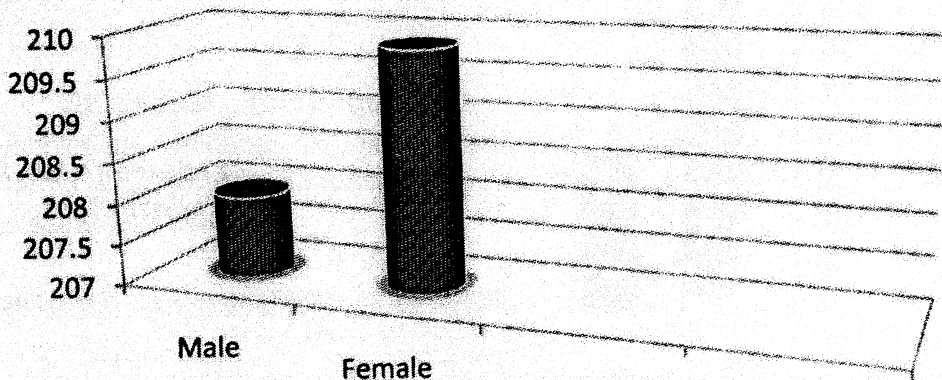
Table- 2 shows the mean difference of male and female volleyball players on self concept.

Respondents/ Variables	Volleyball Players (200)						't' value
	Male			Female			
	N	Mean	SD	N	Mean	SD	
Self Concept	115	208.00	13.36	85	209.88	13.89	

The table-2 reveals that female shows greater score (M=209.88) in comparison to male (M=208.00). The  $t'$  value ( $t=$  ) shows that female are significantly better in comparison to male in terms of self concept.

**Fig. 2:** showing the mean score of male and female volleyball players on self concept.

## Self concept of Male & Female Volleyball Players



## REFERENCES

1. Chaplin, J.P. (1970): **Dictionary of Psychology**, Delhi Publishing Co., New York.
2. Lowe, C.M. (1961): **The Self concept: Fact or artifact?** Psychological Bulletin, 58, 325-326.
3. Lynche, M.D., Norem Hebeisen, A.A and Gergen, K.J (1981): **Self Contemplations self concept: Advance in Theory and Research**, Cambridge, Mass Ballinger.



4. Pedersen, D.M (1965): Ego Strength and Discrepancy between conscious and unconscious Self concept.
5. Rogers, C.S (1951): Client Centered Therapy-its Current Practice, Implications and Theory, Boston, Houghton.
6. Saraswat, R.K and Gaur, J.S. (1981): Approaches for the measurement of self concept- an introduction. Indian Educational Review, 16(3), 114-119
7. Saraswat, R.K (1992). The construction and standardization of Self Concept Questionnaire (SCQ). Agra: National Psychological Corporation.
8. Shaffer, L. F. (1948): Foundation of Psychology, (Edited by Boring Longfeld and Weld), New York: John Wiley and Sons, Inc.
9. Shaffer, L. F. and Shoeben, E. J. (1956): The Psychology of Adjustment, Boston: Houghton Mifflin Company.
10. Sinha, A. K. P. and Singh, R. P. (1995). The construction and standardization of Adjustment Inventory for College Students (AICS). Agra: National Psychological Corporation.
11. Singh A, Brar, R. S. (1987). A study of extroversion neuroticism and self concept of university handball players in L.S. Sindhu and D.N. Mathur (ed) Sports Sciences, Health Fitness and Performance, 252-254.
12. Singh, Rajender and Kumar, Rohtash (1981). Psychology of Sports: The Indian Perspective. New Delhi: Friends Publication.

# ACUTE EFFECTS OF STATIC AND PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION STRETCHING ON AGILITY PERFORMANCE IN YOUTH SOCCER PLAYERS

---

Dr. Minakshi Pathak  
Dean of Physical Education  
SSSUTMS, Sehore

Mr. Praveen Saroha  
Sports Officer  
NIST, Delhi

## ABSTRACT

A warm-up is an important part of preparation for a soccer match. Stretching is typically part of the warm-up however; debate exists as to the most appropriate type of stretching to perform. The purpose of this study was to examine the effects of static and proprioceptive neuromuscular facilitation (PNF) stretching on soccer-specific agility performance in 14 male youth soccer players of L.N.I.P.E Football Academy, Gwalior, Madhya Pradesh. Participants completed 4 trials of the Balsom agility test while dribbling a soccer ball. Height, age, and body mass were collected in trial 1 and participants were accommodated to the agility test during trials 1 and 2. Trials 3 and 4 were the static and PNF treatment trials that were administered after a standardized warm-up (control) in a randomized and counterbalanced manner. There were no significant differences between the difference scores of the static and PNF stretching conditions,  $P=.06$ . Furthermore, no significant differences were found between the control and stretching trials for static stretching,  $P = .15$  or between the control and stretching trials for PNF stretching,  $P = .58$ . Neither mode of stretching significantly affected agility performance. More research is needed to **determine** the chronic effects of PNF stretching on agility performance.

Key Words: Warm up, PNF, game preparation

## INTRODUCTION

Soccer is a sport characterized by high intensity, intermittent, exercise including sprints of varying duration, rapid acceleration, jumping, and agility (21).

While high-intensity actions contribute only 11% of the total distance covered during a match, they represent the more crucial **moments contributing** to the scoring or conceding of goals (22). As such, a players' performance on **tests to measure rapid**; acceleration and change of direction will help to determine performance outcomes in a game. Traditionally, agility tests have been performed to test rapid acceleration and **change of direction**. While several agility tests exist, such as the Illinois and the 505 agility tests, the Balsom agility test is a more soccer specific agility test because **the movement patterns are similar** to those used in soccer (39). Also, these agility tests are primarily performed without a ball, which is non-representative of a game situation because maintaining control of the ball is an important aspect to the game. Therefore, some modification is needed to test soccer-specific agility. A sport specific warm-up is an important part of preparation for a soccer match as strains to muscles and tendons have been shown to be associated with inadequate warm-up exercises (10, 19, 36). Both the Sports Medicine (ACSM) and National Strength and Conditioning Association (NSCA) recommend a general warm-up consisting of aerobic exercises, followed by more sports-specific movements and light stretching before any physical activity or athletic competition (1, 3). However, debate exists as to the type of stretching that should be included. Traditionally, static stretching has been performed prior to competition; however, there is evidence in the literature that static stretching may have a detrimental effect on sports performance (13, 17, 29, 33). Static stretching is a type of stretch that involves holding a stretch at the end position for 30 seconds and includes both relaxation and concurrent elongation of the stretched muscle (3). More recently, dynamic stretching has been proposed to be a better method of stretching prior to as been shown to have a positive or neutral impact on performance (2, 5, 6, 13, 14, 17, 20, 21, 26, 27, 29). Dynamic stretching is a type of stretching that involves sport-specific movements to prepare the athlete for activity (3). Both dynamic and static stretching have the age of being performed individually, however they may not elicit the greater gains in range of motion (ROM). PNF stretching is also a common mode of stretching. PNF stretching techniques are commonly used in both athletic and clinical settings to enhance both active and passive ROM to optimize motor performance and rehabilitation (34). While static, ballistic, dynamic, and PNF stretching are all effective at enhancing joint ROM (23, 24, 40), PNF stretching produces a greater enhancement (11, 12, 16, 25). PNF stretching is thought to be superior to other stretching methods because it facilitates muscular inhibition (3). PNF stretching involves three specific

muscle actions to facilitate the passive stretch (3). To achieve autogenic inhibition, both isometric and concentric muscle actions of the antagonist are used before a passive stretch of the antagonist (3). To achieve reciprocal inhibition, a concentric muscle action of the agonist is used during a passive stretch of the antagonist (3). The main goal of any PNF stretching technique is to activate the Golgi tendon organs (GTO), a mechanoreceptor which is sensitive to increases in muscle tension and, when stimulated, causes a muscle to reflexively relax thus increasing ROM. While studies have been conducted to assess the effect of PNF stretching on increased ROM (8, 35, 42) and vertical jump performance (4, 6, 7), the authors are unaware of any published studies that have examined the effect of PNF stretching on agility performance. This lack of studies on agility performance is surprising given the fact that PNF is commonly used by trainers on the sidelines of many sporting events such as soccer that heavily involve an agility aspect to the game. Information regarding PNF's effect on performance is needed to determine if PNF is beneficial or detrimental to performance in sports requiring high levels of agility. Therefore, the purpose of this study was to investigate the effects of static and PNF stretching modalities on soccer specific agility test in male youth soccer players. It was hypothesized that PNF would produce a greater decrease (improvement) in the time to complete the agility course than static stretching.

## METHODS

### Participants

The participants in this study included 14 male youth soccer players from Football academy of L.N.I.PE Gwalior. This team was chosen as a convenience sample of youth players. The age range of the participants was 12 years-14 years with the majority being 14 years of age ( $n = 10$ ). Other demographic characteristics are presented in Table 1. To assure there were no physical injuries at the time of data collection, players and coaches were interviewed.

Table 1. Demographic Characteristics of the Youth Male Soccer Players (N = 14).

Variable	M	SD
Age (Yr)	13.6	0.6

Height (cm)	162.8	9.2
Body Mass (kg)	53.1	11.6

Note. M = Mean, SD = Standard Deviation.

## Procedures

During trial 1, the participants' height and body mass were recorded. Body mass was recorded in kilograms to the nearest 0.1 kg via a scale with participants dressed in shorts and a shirt. Height was measured with a stadiometer to the nearest 0.1 cm. Participants were asked to **remove** their soccer cleats for both measurements. Analyses of variance (RMANOVA) were utilized to compare the difference scores for the static and PNF conditions as well as the difference between the control and **treatment** trials within the static and PNF conditions. Statistical significance was set at an alpha of .05 for the analysis.

## RESULTS

There were no significant differences between the difference scores for the static and PNF conditions on the Balsom agility test, Wilks' Lambda  $F(1, 13) = .21$ ,  $P = .658$ . Statistical power for this analysis was .07, and partial eta squared was .02. There were also no significant differences between the static control trial and static treatment trial on the Balsom agility test times, Wilks' Lambda  $F(1, 13) = 2.37$ ,  $P = .15$ . Statistical power for this analysis was .30, and partial eta squared was **.15**. **Also, no significant differences were found between the PNF control trial and PNF treatment trial on the Balsom agility test, Wilks' Lambda  $F(1, 13) = .32$ ,  $P = .583$ .** Statistical power for this analysis was .08, and partial eta squared was .02. Neither mode of stretching significantly affected performance on the Balsom agility test (see tables 2 and 3).

Table 2. Descriptive Statistics by Condition.

Condition	M	SD
Statics Control	14.06	1.04
Static Treatment	14.41	1.42
PNF Control	14.57	1.57
PNF Treatment	14.73	1.25
Static Difference	0.34	0.83
PNF Difference	0.16	1.04

## DISCUSSION

The purpose of this investigation was to examine the effects of static and PNF stretching on soccer-specific agility performance in male youth soccer players. The hypothesis that PNF stretching would produce a greater decrease in agility time with a soccer ball was not supported. A notable finding of this study was that static stretching also did not produce a statistically significant decrement to agility performance. It was thought that PNF stretching would produce faster agility times because PNF stretching has been shown to produce an increase in musculotendinous unit (MTU) stiffness.

Rees et al. (31) found that 4 weeks of PNF stretching contributed to an increase in MTU stiffness with simultaneous gains in ankle joint ROM. Because a stiffer MTU system is linked with improved ability to store and release elastic energy, it was thought that PNF stretching would benefit athletic performance due to reduced contraction time or greater mechanical efficiency (31). A few differences exist between this study and the present study. First, female participants were included in the Rees et al. (31) study whereas in the present study, the participants were male. Also, the present study tested the acute effects of PNF stretching. The

findings from this study indicate there is no statistically significant decrement in agility performance from acute static stretching. Although the majority of existing studies have found static stretching impairs performance, there are also studies that have shown no decrement to performance (5, 18, 30, 32, 38, 41). Training status may mediate the relationship between stretching and performance. Static stretching was not detrimental to high

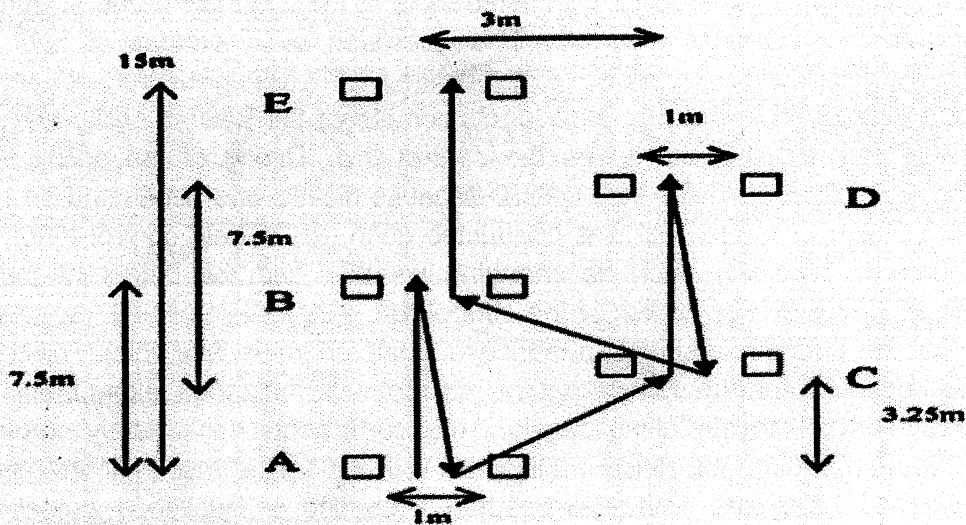


Figure 1. Balsom Agility Course (13).

All participants in this study completed 4 trials of the Balsom agility test; each trial was separated by at least a 48-hour period of recovery. The protocol for this test has been previously

riefly, the participant began the test at point A and ran to point B, then turned and ran back to point A before running through point C to point D, then turned and ran back through point C before running through point B to the finish at point E (see figure 1). Time keepers with stop watch were placed at point A and point E with participants standing 0.5 m behind the starting line at point A. Trials 1 and 2 were familiarization trials to allow participants to become accustomed to the testing protocol with no stretching treatment performed on the participants during these trials None of the participants had previous experience with the

Balsom agility test; therefore each participant was permitted to run the course as many times as he wanted during trials 1 and 2. It was the hope of the researchers that this would attenuate the learning curve for the testing protocol to provide a more accurate evaluation of the effect of the treatment. Using a repeated measures experimental design, the order the participants completed the stretching conditions (trials 3 and 4) was randomly assigned. During trials 3 and 4, participants remained blinded to the purpose of the testing with no feedback on their performance being provided until all participants completed trials 4. Prior to trials 3 and 4, participants completed a standard warm-up. This consisted of 3 minutes of light jogging (selfselected pace) followed by 2 minutes of passing/rur Immediately, after completion of this warm-up, participants completed the Balsom agility test with the soccer ball and this served as the control trial. Timing of the agility test was recorded manually with a stop watch. Because testing was conducted on a soccer field outside, a control test was conducted each trial to help control threats to the validity of the study such as changing weather and the height of the grass. Immediately after completion of the control run, either static or PNF stretching was performed on the hamstrings, quadriceps, gastrocnemius, and solei. The treatment was reversed for the following trial for a counterbalanced experiment. At the completion of the stretching session, the participants immediately completed a second run through the Balsom agility test with the soccer ball. PNF stretching was performed using the hold-relax method according to published guidelines (3). Briefly, the stretch consisted of 10 seconds of a passive pre-stretch to a point of mild discomfort, followed by an isometric contraction for 6 seconds, and finishing with 30 seconds of passive stretching. This pattern of stretching was completed twice on each leg for each muscle group and was performed by the principal investigator who was trained on properly performing this method of stretching. The static stretching was also performed according to published guidelines (3). Briefly, the stretch was held for 30 seconds at a point of mild discomfort. Each stretch was performed twice on each leg for each muscle group.

## **Statistical Analysis**

The Statistical Package for the Social Sciences for Windows (SPSS Inc., Chicago, IL, Version 17.0) was used for statistical analysis. A difference score was calculated by subtracting the control run from the treatment run for both stretching conditions. One-way repeated measures



Table 3. Raw Agility Times (s) and Difference Scores (s) (Treatment-Control) by Participant

Note. Negative difference scores indicate faster time in the agility trial following that stretch. PNF = Proprioceptive Neuromuscular Facilitation.

Participant	Static Stretch			PNF Stretch		
	Control	Treatment	Difference	Control	Treatment	Difference
1	12.06	12.15	0.09	14.85	14.31	-0.54
2	12.18	12.97	0.79	15.17	14.80	-0.37
3	14.19	13.65	-0.54	16.60	17.04	0.44
4	12.91	12.96	0.05	14.56	16.73	2.17
5	13.51	12.41	-1.10	14.85	15.25	0.40
6	14.48	14.40	-0.08	12.60	14.01	1.41
7	14.70	14.60	-0.10	11.85	12.84	0.99
8	14.89	16.88	1.99	13.41	14.74	1.33
9	14.61	15.39	0.78	12.51	12.86	0.35
10	14.20	15.84	1.64	13.49	13.21	-0.28
11	14.24	14.71	0.47	16.62	15.12	-1.50
12	15.64	15.96	0.32	15.95	15.29	-0.66
13	14.91	14.52	-0.39	16.26	15.27	-0.99
14	14.38	15.26	0.88	15.24	14.68	-0.56

Speed performance when included in a warm-up for professional soccer players (21). Competitive male middle distance runners' running economy

was found not to be affected by prior impaired in trained college-aged women following static or ballistic stretching (9, 37).

Some authors have suggested that trained athletes might be less susceptible to stretch-induced performance deficits than untrained individuals (9, 37).

Unick et al. (37) suggested that a training effect enhances neuromuscular recovery or other mechanisms that result in a reduced effect from static stretching. The participants in the current study were elite youth soccer players and therefore their training status may be the reason for the lack of performance decrement following static stretching. Because this was the first study to test PNF's effects on agility performance, it is speculative to say if PNF is beneficial or detrimental to performance. Previous studies using PNF stretching on various performance outcomes have been equivocal.

Molacek et al. (28) found that both low- and high-volume PNF and static stretching had no significant acute effect on 1-repetition max bench press in resistance trained collegiate football players. Christensen and Nordstrom (6) found no significant effect on vertical jump performance with warm-up only, dynamic stretching, or PNF stretching. However, a study by Franco et al. (15) found PNF stretching decreased bench press endurance while a low volume of static stretching did not have a significant effect. Church et al. (7) found a decreased vertical jump with PNF stretching, and concluded that PNF before vertical jump would be detrimental to performance. It is apparent that there is still controversy in the literature about PNF stretching's effect on performance. Future research is needed with larger sample sizes of elite youth soccer players to determine if PNF stretching is beneficial or detrimental to soccer performance. Furthermore, studies are needed with female elite soccer players to see if there is a sex difference. It would appear that the sex of the participant would affect the results since women tend to be more flexible (3). Future studies should also address the chronic effects of PNF stretching on agility performance. In conclusion, the results of this study indicate that there was no negative effect on agility performance in elite male youth soccer players following static or PNF stretching.

## REFERENCES

1. ACSM's guidelines for exercise testing and prescription (8th ed.). Baltimore, MD: American College of Sports Medicine, 2010.
2. Amiri-Khorasani M, Sahebozamani M, Tabrizi KG, Yusof AB. Acute effect of different stretching methods on Illinois agility test in soccer players. *J Strength Cond Res* 24(10): 2698-2704, 2010.
3. Essentials of Strength Training and Conditioning (3rd ed.). Champaign, IL: National Strength and Conditioning Association, 2008.
4. Bradley PS, Olsen PD, Portas MD. The effect of static, ballistic, and proprioceptive neuromuscular facilitation stretching on vertical jump performance. *J Strength Cond Res* 21(1): 223-226, 2007.
5. Chaouachi A, Castagna C, Chtara M, Brughelli M, Turki O, Galy O, Chamari K, Behm DG. Effect of warm-ups involving static or dynamic stretching on agility, sprinting, and jumping performance in trained individuals. *J Strength Cond Res* 24(8): 2001-2011, 2010.
6. Christensen BK, Nordstrom BJ. The effects of proprioceptive neuromuscular facilitation and dynamic stretching techniques on vertical jump performance. *J Strength Cond Res* 22(6): 1826-1831, 2008.
7. Church JB, Wiggins MS, Moode FM, Crist R. Effect of warm-up and flexibility treatments on vertical jump performance. *J Strength Cond Res* 15(3): 332-336, 2001.
8. Decicco PV, Fisher MM. The effects of proprioceptive neuromuscular facilitation stretching on shoulder range of motion in overhand athletes. *J Sports Med Phys Fitness* 45(2): 183-187, 2005.
9. Egan AD, Cramer JT, Massey LL, Marek SM. Acute effects of static stretching on peak torque and mean power output in National Collegiate Athletic Association Division I women's basketball players. *J Strength Cond Res* 20(4): 778-782, 2006.
10. Ekstrand J, Gillquist J. The frequency of muscle tightness and injuries in soccer players. *Am J Sports Med* 10(2): 75-78, 1982.
11. Etnyre BR, Abraham LD. Gains in range of ankle dorsiflexion using three popular stretching techniques. *Am J Phys Med* 65(4): 189-196, 1986.
12. Ferber R, Osternig L, Gravelle D. Effect of PNF stretch techniques on knee flexor muscle EMG activity in older adults. *J Electromyogr Kinesiol* 12(5): 391-397, 2002.

13. Fletcher IM, Monte-Colombo MM. An investigation into the effects of different warm-up modalities on specific motor skills related to soccer performance. *J Strength Cond Res* 24(8): 2096-2101, 2010.
14. Fletcher IM, Monte-Colombo MM. An investigation into the possible physiological mechanisms associated with changes in performance related to acute responses to different preactivity stretch modalities. *Appl Physiol Nutr Metab* 35(1): 27-34, 2010.

## **Role of Infrastructure in physical Education & Sports**

---

**Dr. Rajesh Triparthi**  
**VNS College of Physical**  
**Education Bhopal**

**Ms. Minakshi Pathak**  
**VNS College of Physical**  
**Education Bhopal**

A Broad vision a dynamic outlook and a flexible attitude are necessary in planning and construction of infrastructure.

Planning infrastructure is no child's play. Good planning makes construction and management easy. Physical education personnel should tread cautiously and steadily in planning infrastructure. Wise and efficient planning care of several important factors such as objectives, programmes, resources, needs standards, requirements. Important guide lien for infrastructure planning are given below :

1. The need of the program should determine the level of infrastructures required for instance a synthetic track may be a while elephant for an ordinary school/college where the major aim of the Physical Education is health, fitness and well being.
2. While planning infrastructure, Physical Educators should not wholly depend upon their own knowledge and experience alone but seek advice and expertise of the administrators, architects and engineers. This will solve many managerial, technical, functional and operational problems.
3. Infrastructure for a particular sports event should no be planned without consideration of the overall planning which includes academic, health, fitness play and exercise programs.
4. Economy should be the underlying principle in planning, construction, operation and care and maintenance of infrastructure without compromise on quality
5. in design, structure and appearance the infrastructure should be appealing to the human eye. It should be measure up to base minimum aesthetic standards.  
That which is functionally good should also be aesthetically satisfying.
6. Infrastructure should be within physical and financial reach of the people.

7. Sports infrastructure standard are never absolute they are relative and must be modified in the light of needs of the users, local conditions and resources of the institutions/ organizations.
8. In planning infrastructure health and safety considerations should be given top priority.
9. All most economy should be exercised in planning administrative management buildings.
10. Infrastructure should be planned with an eye on the future.

“A movement's ..... at the planning stage is so far too good then the unending headache resulting from hurrying”.

It is erroneous to be too optimistic about the architects and constructions engineers. Keeping abreast of latest trends, concepts, design and innovative ideas about sports infrastructure constructions. Physical educators should provide input to them on matters of importance. A visit to a newly constructed infrastructure also where along with architects and engineers may be immovably advantageous.

Irrespective of the level and dimension of a infrastructure, it is very important for the planners to :

1. Identify needs of the organization, institution or people for whom the infrastructure is being constructed;
2. To have a clear picture of the goals, philosophy, interests and future projections in one's mind;
3. Selected well qualified, knowledge and competent architectural agency, and
4. Provide correct inputs to if for locating and designing various units of that infrastructure economically, aesthetically and scientifically.

### **Type of the Infrastructure :**

Physical education is an unbounded field of experience, It includes activities of a wide variety. There two extremes can be located hundreds of Physical

Activities, sports, passions, exercise systems. Both indoor and outdoor to be organized in unique ways for which infrastructure required are also unique.

The Physical infrastructure can primarily be categorized into buildings (indoors) and play fields (Outdoor).

In schools, indoor infrastructure are seldom feasible to have so the major concern of the Physical educator is management of play fields, athletic track and a swimming (if available). In colleges and Universities, indoor infrastructure are being promoted though the number of participants in regular physical activity and sports programmes very low. With implementation of national policy of "Compulsory" Physical education planning, construction and maintenance of infrastructure would become a serious obligation for all concerned.

### **Infrastructure Requirements :**

"The battle of Waterloo was won on the play fields of education" and "India needs more of football ground than temples" (Swamy Vivekananda) signify importance of play fields. A play ground is not simply a plain, level, turfed open piece of land, it is laboratory and a temple of learning which enables children to acquire the most essential skills required to transform siblings into Olympians.

Like desire, facility needs know no bounds with abundant resources one can go to any extent to plan sport infrastructure in an educational institution. The Central advisory Board of Education, India (In fifties) set the following norms :

1. Primary Schools --60 fit X 60 fit Open space,
2. Secondary School with 160 students 2-3 acres

with 320 students 3-4 acres.

with 480 students and above factors.

Ever since no changes have occurred in their norms experts field that play field norms could be fixed on per capita basis at various levels of education as given below.

Primary School 50 - 100 sq. fit. per students.

Middle School 100 -- 250 sq. fit. per students.

High School 250 - 500 sq. fit. per students.

**Conclusion :** Treatment of physical activity as a low priority area, budgetary constraints all round, high cost of construction, to sophisticated models of infrastructure for competitive purposes.

A gymnasium, track or a good play field is brought into existence once in life from out of the time grant under the capital head. A favorable state policy helps to develop there infrastructure gradually one period of time.

Finally Physical education and sports infrastructure should be optimally used. Making infrastructure available to general public on make shift basis or "Pay and play" basis will generate revenue for the organization/ institution and keep the infrastructure operative. Proper vigilance supervision and efficient service system are necessary to make this arrangement successful.

Over the year several new trend in the management of infrastructure (Construction care and maintenance) have emerged all over the world. Economy efficiency and expediency are there watch words. Physical Educators therefore, need to keep themselves abreast of the latest techniques of facility management so as to help the institution to economies on maintenance cost of the infrastructure.

### **Online International Interdisciplinary Research Journal,**

All the sixty four male hockey players who participated in intercollegiate Hockey tournament were selected to serve as subjects for the collection of data.



Data using the prepared rating scale was obtained independently from three hockey experts on all the subjects. The subjects were asked to perform the three skills i.e hitting, dribbling and scooping in a non competitive situation. The judges were given five point rating scales to evaluate the three skills (hitting, dribbling and scooping) in hockey. Data on playing ability detailed guidelines assigned independently by three hockey experts was collected during the league matches of Intercollegiate Competition. Further data was collected by administering the Henry-Friedel Field Hockey test on all the subjects. The coaches of the teams were consulted at the personal level to conduct the test on Hockey players. All the coaches were made full conversant with study. The researcher approached each player after giving proper and timely information before the tests were conducted. Before administering the tests the subjects were briefed about the purpose of the study the details of the tests were explained to them. They were also given sufficient number of trials to enable them to become familiar with the test. To ensure uniform testing conditions, the subjects were tested in the morning and evening sessions. The subjects were directed to come in proper playing kit during the performance of the tests. No special motivational techniques were used to enhance their performance. But the nature of the test was such that each subject was so enthusiastic that he performed tests in the spirit of competition to surpass his counterpart and know his status of specific skills. The subjects gave maximum cooperation throughout the test administration.

The reliability of the rating scales was established by test-retest method employing product moment method of correlation on twenty randomly selected subjects.

The objectivity of the rating scales was established by correlating product moment method (each test item scores judged by two experts who noted the performance of the subjects independently).

Validity of each rating scale was established by product moment method of correlation i.e. correlating average of each rating scale scores with the average of hockey playing ability scores assigned independently by three hockey experts.

In order to check the effectiveness of the rating scales, the average rating scale scores and the Henry-Friedel Hockey Test scores were correlated by using Pearson's product moment of correlation.)

## RESULTS: 8

For scientific authenticity of the rating scales researcher established the objectivity and validity of the test item i.e. hitting, dribbling and scooping.

The researcher obtained the fresh data on 20 hockey players with the help of rating scales and computed objectivity of the test items. The average of the scores assigned independently by three hockey experts who noted the performance of the subjects was correlated in order to obtain an objectivity coefficient. The objectivity coefficient of the rating scales have been presented in table-1

### Reference

1. Franco BL, Signorelli GR, Trajano GS, de Oliveira CG. Acute effects of different stretching Nexercises on muscular endurance. *J Strength Cond Res* 22(6): 1832-1837, 2008.
2. Funk DC, Swank AM, Mikla BM, Fagan TA, Farr BK. Impact of prior exercise on hamstring flexibility: a comparison of proprioceptive neuromuscular facilitation and static stretching. *J Strength Cond Res* 17(3): 489-492, 2003.
3. Gelen E. Acute effects of different warm-up methods on sprint, slalom dribbling, and penalty kick performance in soccer players. *J Strength Cond Res* 24(4): 950-956, 2010.
4. Hayes PR, Walker A. Pre-exercise stretching does not impact upon running economy. *J Strength Cond Res* 21(4): 1227-1232, 2007.
5. Heiser TM, Weber J, Sullivan G, Clare P, Jacobs RR. Prophylaxis and management of hamstring muscle injuries in intercollegiate football players. *Am J Sports Med* 12(5): 368-370, 1984.
6. Jaggars JR, Swank AM, Frost KL, Lee CD. The acute effects of dynamic and ballistic stretching on vertical jump height, force, and power. *J Strength Cond Res* 22(6): 1844-1849, 2008.
7. Little T, Williams AG. Effects of differential stretching protocols during warm-ups on high speed motor capacities in professional soccer players. *J Strength Cond Res* 20(1): 203-207, 2006.

8. Little T, Williams AG. Specificity of acceleration, maximum Little T W:11; speed, and agility in professional soccer players. *J Strength Cond Res* 19(1): 76-78, 2005.
9. Lucas RC, Koslow R. Comparative study of static, dynamic, and proprioceptive neuromuscular facilitation stretching techniques on flexibility. *Percept Mot Skills* 58(2): 615-618, 1984.
10. Magnusson SP, Aagard P, Simonsen E, Bojsen- Moller F. A biomechanical evaluation of cyclic and static stretch in human skeletal muscle. *Int J Sports Med* 19(5): 310-316, 1998.
11. Magnusson SP, Simonsen EB, Aagaard, P, Dyhre- Poulsen P, McHugh MP, Kjaer M. Mechanical and physical responses to stretching with and without preisometric contraction in human skeletal muscle. *Arch Phys Med Rehabil* 77(4): 373-378, 1996.

## Multiple-Choice Question Framing Guidelines

---

**Prof. N. B. Shukla**  
**Tushar Dar Shukla**

Multiple-choice exams are commonly used to assess student learning. However, instructors often find it challenging to write good items that ask students to do more than memorize facts and details.

Multiple-choice items can be used to measure knowledge outcomes and various types of learning outcomes. They are most widely used for measuring knowledge, comprehension, and application outcomes.

When writing multiple choice items to test higher-order thinking, design questions that focus on higher levels of cognition. A stem that presents a problem that requires application of course principles, analysis of a problem, or evaluation of alternatives is focused on higher-order thinking and thus tests student's ability to do such thinking. In constructing multiple choice items to test higher order thinking, it can also be helpful to design problems that require multi-logical thinking, where multi-logical thinking is defined as "thinking that requires knowledge of more than one fact to logically and systematically apply concepts to a problem".

**A Multiple choice item** consists of a problem, known as the STEM, and a list of suggested solutions, known as ALTERNATIVES. There is one correct or best alternative known as the ANSWER, and various incorrect or inferior alternatives, known as DISTRACTORS.

### **Procedural Rules:**

- Use Correct answer format, which refers to one and only one correct answer.
- Format the items vertically, not horizontally (i.e., list the choices vertically)
- Use good grammar, punctuation, and spelling consistently.
- Minimize the time required to read each item.

- Avoid trick items.
- Use the active voice.
- Avoid giving unintended cues – such as making the correct answer longer in length than the distractors.

### **Content-related Rules:**

- Base each item on the objective of the competitive examination and the syllabi, not trivial information.
- Test for important or significant information.
- Focus on a single problem or idea for each test item.
- Keep the vocabulary consistent with the examinees' level of understanding.
- Avoid cueing one item with another; keep items independent of one another.
- Avoid overly specific knowledge when developing items.
- Avoid textbook, verbatim phrasing when developing the items.
- Avoid items based on opinions.
- Use multiple-choice to measure higher level thinking.
- Be sensitive to cultural and gender issues.

### **Stem Construction Rules:**

- State the stem in either question form or completion form.
- When using a completion form, don't leave a blank for completion in the beginning or middle of the stem.
- Ensure that the directions in the stem are clear, and that wording lets the examinee know exactly what is being asked.
- Avoid window dressing (excessive verbiage) in the stem.
- Word the stem positively; avoid negative phrasing such as "not" or "except." If this cannot be avoided, the negative words should always be highlighted by underlining or capitalization: Which of the following is NOT an example  
.....
- Include the central idea and most of the phrasing in the stem.
- Avoid giving clues such as linking the stem to the answer (.... Is an example of an: test-wise students will know the correct answer should start with a vowel)

## **General Option Development Rules:**

- Place options in logical or numerical order.
- Use NUMBERS in front of options rather than letters; our OMR of offline exam or software of online exam accepts only numerical values.
- Keep options independent; options should not be overlapping.
- Keep all options homogeneous in content.
- Keep the length of options fairly consistent.
- Avoid the phrase all of the above.
- Avoid the phrase none of the above.  
Avoid options 1 & 2 correct, options 2 & 3 correct and options 1,2 & 3 are correct
- Phrase options positively, not negatively.
- Avoid distractors that can clue test-wise examinees; for example, absurd options, formal prompts, or semantic (overly specific or overly general) clues.
- Avoid giving clues through the use of faulty grammatical construction.
- Avoid specific determinates, such as never and always.
- Position the correct option so that it appears about the same number of times in each possible position for a set of items.
- Make sure that there is one and only one correct option.

## **Distractor (incorrect options) Development Rules:**

- Use plausible distractors.
- Incorporate common errors of students in distractors.
- Avoid technically phrased distractors.
- Use familiar yet incorrect phrases as distractors.
- Use true statements that do not correctly answer the item.
- Avoid the use of humor when developing options.
- Distractors that are not chosen by any examinees should be replaced.

## SAMPLE QUESTIONS

**Note: The Examples are only sample question, some of which have appeared in previous competitive examinations, hence are only meant for understanding and not to be used in framing quesyon, either partly or whollty.**

### **Type 1: Simple Multiple Choice Questions with only one correct option**

Q) What is the old name of Iraq ?

1. Mesopotamia
2. Persia
3. Turkmenistan
4. Alexandria

{Ans: 1)

Q Who among the following was the last king of the Qutub Shahi dynasty of Golkonda ?

1. Abdullah Qutub Shah
2. Ibrahim Qutub Shah
3. Abul Hasan Tanisha
4. Mohammad Quli Qutub Shah

{Ans: 3

**Type 2: Multiple statement based questions, with options containing various combinations of the statements (not related to each other) with only one correct option.**

Q) Consider the following statements:

- A. Arya Samaj was founded in 1835

B. Lala Lajpat Rai opposed the appeal of Arya Samaj to the authority of Vedas in support of its social reform programmes

C. Under Keshab Chandra Sen, the Brahmo Samaj campaigned for women's education

D. Vinoba Bhave founded the Sarvodaya Samaj to work among refugees

**Choose the option in which all the statements are correct:**

1. A and B
2. B and C
3. B, C and D
4. C and D

{Ans: 4}

**Type 3: Simple Match the Following questions**

Q) Consider the following pairs:

List-I

List-II

- |                |  |
|----------------|--|
| A. Article 54  | 1. Election of the President of India                                    |
| B. Article 75  | 2. Appointment of the Prime Minister and Council of Ministers            |
| C. Article 155 | 3. Appointment of the Governor of a state                                |
| D. Article 164 | 4. Appointment of the Chief Minister and Council of Ministers of a State |
|                | 5. Composition of Legislative Assemblies                                 |



Choose the option in which the items of list-1 are correctly matched with the items of list-2

1. A-1, B-2, C-3, D-4
2. A-1, B-2, C-4, D-5
3. A-2, B-1, C-3, D-5
4. A-2, B-1, C-4, D-3

{Ans:  
1}

Q) Consider the following pairs.

Tribe	State
A. Limboo	Sikkim
B. Karbi	Himachal Pradesh
C. Dongaria Kondh	Odisha
D. Bonda	Tamil Nadu

Choose the option consisting the correctly matched pairs

1. A and C only
2. B and D only
3. A,C and D only
4. A,B,C and D

{Ans: 1}

Type 4: Find the correct order (increasing/ decreasing) in chronological based questions

Q) Arrange the following in chronological order:

- A. The Bahamanis of Deccan
- B. The Reddis of Kondaveedu

- C. The Kakatiyas of Warangal
- D. The Rayas of Vijayanagara
- E. The Gajapatis of Orissa

1. C,B,A,D,E
2. B,A,C,E,D
3. D,C,B,A,E
4. C,B,D,A,E

{Ans: 4

Q) As per the succession of Prime Ministers of India, which order among the following is correct?

- A. Indira Gandhi
- B. Rajiv Gandhi
- C. Charan Singh
- D. Morarji Desai
- E. Chandrashekhar
- F. Gulzari Lal Nanda

1. F,A,D,C,B,E
2. F,D,B,E,A,C
3. F,B,D,E,C,A
4. D,A,B,C,F,E

(Ans: 1}

**The percentage of questions to be covered under various types:**

Type :1	50%
Type:2	20%
Type:3	20%
Type:4	10%

**Out of 150 Questions The Number of questions to be covered under various Difficulty Levels:**

**D1 (Most Difficult) 50**

**D2 (Moderate) 75**

**D3 (Less Difficult) 25**

# Evaluation Of Training Effectiveness Of Small Scale Industry Of Mandideep.

---

Dr Dinesh Nagar  
Ms. Minakshi Pathak  
Prof. N.B. Shukla

## Introduction

**“ Training is a process of learning sequence of programme behavior. It is application of knowledge”.**

**(E. B. Filippo)**

Every Employee works as part of system. Over a period of time he gets used to other member in a group. He becomes a part of the group though constant interactions at various levels. Eventfully, the group emerges as an organization. With an identify of its own. Every organization needs to have well-trained and experienced people to perform the activities that have to be done. The education and training a person already carries is usually not adequate for a job he is employed for. Even a qualified / experienced person shall find many gaps in his occupational knowledge. This can be seen from the roles the individuals play in an organization. These gaps are filled in through appropriate training in order to keep him fit and alert to the requirement of his job within the organization.

**(Late Rani, 1995)**

Training is a process of learning a sequence of programmer behavior. It is application of knowledge and gives people an awareness of rules and procedures to guide their behavior. Training needs are fairly obvious in order to combat occupational obsolescence of professional and scientific personnel (Zeli Koff, 1969) training are the corner stone of sounder management, for it makes employees more effective and productive. It is actively and intimately connected with all the personnel and managerial activities (Byars & Schwefes, 1969; Mohancy, 1969).

Training is practical and vital necessity because, apart from the other advantages, it enables employees to develop and rise within the organization and increase their market value earning power and job security: it also enables management to resolve sources of friction arising from parochialism. To bring home to the employees' attitudes a better co operation with the company and greater loyalty to it training moreover heightens the morale of the employees for it helps to reduce dissatisfaction. Complaints, grievances absenteeism and reduces rate of staff turnover, further trained employees make a better and economical use of materials and equipments, therefore wastage and spoilage are loosened and the need for constant supervision is reduced.

**(Belbin,1965)**

Training gives people an awareness of the rules and procedures to guide their performance on the current job or prepare them for an intended job. Training is basically a task-oriented activity aimed at improving performance in current of future jobs. The term " management Training' connotes equipping managers with such knowledge, skills and techniques as are knowledge, skills and techniques as are relevant to managerial task and functions.

The main areas in which training is provided are:

- Knowledge: The training in this area aims at helping the trainee learn to understand and to remember facts, information and principles.
- Technical Skills: The trainee is taught physical acts or actions like operating a machine, working with a computer, using mathematical models to take decisions, etc.
- Social skills: The employees are provided opportunities to acquire and sharpen such behavioral and human relations skills as are necessary for improved interpersonal relationship, better team work and effective leadership.
- Techniques: This involves teaching of application of knowledge and skill to dynamic situations.
- Attitudes: This involves attitudinal change towards increased work commitment and a positive orientation towards the organization and

society. The basis of attitudes, and the knowledge and skill with which to change them have to be carefully diagnosed.

## SYSTEMATIC TRAINING

" The systematic development of the attitude / knowledge/ Skill/ behavior pattern required by an individual to perform adequately a give task or job." Department of Employment Glossary of Training Terms 1971. " The acquisition of skills, concepts or attitudes that result in the improved performance in on-the job environment. "Goldstein, 1980 Training usually planned using a process like that in fig. Which is after a systematic training cycle.

### SYSTEMATIC TRAINING CYCLE: -

Identification of -----training

Training needs ----- objective

Evaluative feedback ----- selection and design loops ----- of programs

Carry out training

This module is very common and used for teaching an individual how to carry out a well- defined job and where the information and / or skills practice give are closely match to the job which is not changing. Peter Bramly suggests another training model. As a way enhancing organization effectiveness this is essentially an interventionist are with training being the catalyst. The facts are on what can be achieved relatively short term. Using the resources and skills, which either is

already available or which can be developed with some training input. Evaluation of training is both practical and necessary.

Evaluation of training effectiveness is the most critical phase in not only assessing the quality of training imparted but also to see what future changes in training plan should be made to make it more evaluation of various aspects of training immediate after the training is over and judging its utility to achieve the goals of the organization while the first is bet easy to valuable. The second poses complications. The effect of training on performance to achieve organizational objectives is difficult to isolate because performance is a function of complex forces and motives.

### **These can be 5 types of evaluation**

1. **Context Evaluation:** -obtaining and using information about the current operational context i. e individual difficulties organizational deficiencies i. e. training need assessment as basis for decision and to what extent are training courses related to job environment.
2. **Input Evaluation** - determining and using facts/ opinions about human/ ma for training to decide training method or types of training prepare inventory of outside training programmes.
3. **Process evaluation** - monitoring training as it is in progress, continuous examination of administrative arrangements and feedback from training
4. **Out Evaluation-** measuring effects of training on the relation to his job.
5. **Consequences evaluation** - measuring effects of training on overall efficiency of department / organization. This evaluation is at the functional level. This involves efficiency of the firm, effect on other's behavior, cost reduction etc.
6. Different scholars have conducted different studies in the field of training and evaluating training effectiveness. Mehta 1970, points out in a study that the training effectiveness is dependent on two considerations. Firstly, trainers are fully responsible for training. he emphasize that if the employees do not show results the trainer should be held accountable for it. Secondly training effectiveness depends on the kind of atmosphere and culture that is prevalent back home. Jain (1985) collected date on 119

managers in a steel- industry who had attended in company or external Training programme. A questionnaire was administered and their responses were tallied. A majority of the respondents were found to be satisfied with the instructors, the size of the training group. The training duration, the reading material and the training equipment. Except for one respondent all felt that training contributed substantially in developing their knowledge skills and attitudes. They also felt that the environment did help in implementing some of the learning that took place during training.

### **Objectives of the study**

The main objectives of the present study are: -

1. To empirically examine the effectiveness of skill training received by employees.
2. To analyse what other type of training may be given to increase the employee's effectiveness on the job.
3. To analyze strength and weakness of the training programme.
4. To evaluate whether the participants perceive the training to be effective or not.
5. To evaluate whether training helps the participants to perform more effectively.
6. To examine how the training programmes can be made more effective.

**Sample:** - The data will be collected on 70 employees, which included 35 of the male worker and 35 of the female worker, who received training at the industry in Mandideep.



## **METHODOLOGY**

### **Material used: -**

The material used for this study will be developed after interacting with the owner and plant manager who had experience. On the basis of the interaction, certainty dimensions will and then a surveys questionnaire will and then a survey questionnaire will constructed to evaluate effectiveness of the small-scale industry.

This three-page survey instrument contained some General Instrument in the beginning in which it was made clear to the respondents filling up the questionnaire that it will be purely for research purpose. It will guaranteed to them that the information thus collected will not be used for my other purpose they will asked not travel their names if the so desired However for information research purpose, They will ask to fill some information regarding their jobs in the organization. The questionnaire will be structured one i. e. the questions were of a definite and predetermined standard and presented in the some order to all respondents.

A brief description of their items is presented below Personal Information: - Questions relating to the personal background of the participants. Their age designation, Years off services and their material status will be inquired. After this the participants will ask to give their ratings on a five-point scale, which will: - "After this the participants will ask to give their ratings on a five-point scale, which will: -

1. Very dissatisfied
2. Dissatisfied
3. Neither satisfied nor dissatisfied
4. Satisfied
5. Very satisfied

Embedded in the questionnaire are some open- ended questions dealing with the participants perceptions of improving the training effectiveness, benefits of training & area (needs) of training.

## **Procedure:**

Before the actual collection the investigator approached the owner of the small-scale industry Mandideep, to seek permission for undertaking the research project. The owner, after undertaking the research project. The owner, after understanding the objectives of the project, solicited his approval. He gave the investigator necessary details pertaining to the training

The time and date collection will fix well in advance in order to reduce uncertainty. The owner as well as the participants will be kept confidential, and be used for the research purpose only.

The prepared survey schedule will be distributed to the participants and all the items will well explained to them. Although there will no time limit allotted to complete the survey schedule, yet, no participants took more them 15 minutes to accomplish it.

After this, the questionnaire will collect and the participants will thank for their co-operation.

## **Results**

After the data collection phase will be over, the data will be compiled and various content analysis and bivasiate analysis will be conducted understand the effectiveness of training programme