BHARATHIDASAN UNIVERSITY, TIRUCHIRAPPALLI - 620 024

(Accredited With A+ Grade By NAAC In The Third Cycle)

Department of Physical Education and Yoga

Bachelor of Physical Education (B. P. Ed)

EC-IV Theories of Sports and Major Games (21BPE44EA)

Sem. -IV

Credit-4

Unit-3

Scientific principles of coaching

Meaning of Sports Training:

Sport's training is the basic form of preparation sportsmen for better performance through physical exercise.

Sports Training Definition:

"Sports training is a process of preparation of sportsmen, based on scientific and pedagogical principles for higher performance".

- Harre.

Aims of sports training

Improvement of physical fitness

The sports performance depends upon the components of physical fitness like strength, speed, endurance, flexibility and various coordinative abilities.

Acquisition of motor skills

Learning and stabilizing the motor procedure is called a skill. Sports activities consist of motor movement and action and their success depends largely on their correctness.

Improvement of tactical efficiency

During competition, the sportsman can fully utilize his abilities, skills and external factors while at the same time hindering the opponent to perform is termed as tactics.

- To improve the knowledge of the rules and regulations of the specific sport.
- Improving the tactical skills.
- Tactical abilities.

Education and improvement of mental capabilities

Performance in sport is result of the total personality of the sportsman. Therefore education and improvement of mental capabilities must be an important aim which is to be achieved through sports training.

Principles of sports training and characters

Sports training is a process of preparing the sportsman for higher performance. This process is based on several scientific principles and these principles serve as guidelines for coaches and sportsman for the formulation and execution of sports training programme.

principles of continuity

This principle indicate that training process should be continuous process from day to day, week to week and year to year. There should be optimal intervals between the training sessions but too much rest between training session or cycle breaks the continuity of the training process.

Principles of progression of load

The training should be increased in order to improve the performance of the sportsman. For the continuous improvement of the performance, the load must be increased from time to time.

Principles of individualization

Since the performance of an individual depends upon his performance capacity, the training should be individualized process.

Principles of active participation

The sportsman should be trained and educated to tackle the various tasks of the training and progressively involves himself in the planning, implementation and evaluation of the training progress.

Principles of planned and systematic training

The training is a scientific and pedagogical process and for best results each and every part of training must be properly planned. As a result we have short and long term plans which forms the basis of implementation and assessment of training.

Principles of clarity

This principles not only relates to the training for technique and tactics but also applicable to the training for the improvement of strength, speed, endurance, flexibility and coordinative abilities. Every information about technique and tactics, aspects of the training must be given clearly as possible and the knowledge which is to given to the sports must be made comprehensible for him.

Principles of ensuring results (of) regulation of training

All training principles must be properly implemented. The coach should assess the achievements at and modify the plan wherever necessary. The tests will serve as a feedback to the coach for evaluation and regulation of training programme.

Principles of cyclist

The training process should be formulated in the form of shorter or bigger cycles.

Three types of cycles: micro cycle, meso cycle, macro cycle.

- Micro cycle: it is the smallest training cycle and consist of 5 to 7 days. When the duration of micro cycle in seven day. It is called weekly cycle.
- Meso cycle: meso cycle is a training cycle of medium duration is composed of a definite arrangement of 3 to 6 weeks.
- Macro cycle: this consists of 3 to 12 months and is commonly called the longest training cycle. When this duration is 12 months, it is called the yearly cycle.

Definition of Strength

- Strength is the ability of a muscle to get overcome resistance.

While playing different games and sports, the sportspersons overcome the following four types of resistance:

- Resistance of equipment.
- Resistance of own body.
- Resistance of opponent.
- Frictional resistance.

Load and recovery

Optimum load is essential to achieve good super compensation and the super compensation will take place only if enough time for recovery is given.

Specificity of load

Since specific type of load leads to a super compensation of a particular type of substance, when different performance factors need to be improved different type of load should be given.

Progression of load

The load should be increased from time to time for continuous improvement of performance. According to the need, the load should be given. For example, higher load should be given for the adaptation to a higher level.

COMPONENTS OF LOAD

Intensity

It is the rate of doing work. In other words, it is the pace at which physical activity is done. An activity can be carried out with different intensities which will have different effect on the organism. Hence practice, the total range of intensity for planning implementation and evaluation of training. The highest intensity which can be achieved by the sportsman is taken as 100 present.

In endurance training the intensity zones are made according to the heart rate. Intensity zones training the heart rate must be above 140 beats/ min.

In strength training for the beginners the intensity must be above 30% but for advanced athlete the intensity must be above 75%.

Magnitude of resistance	Intensity zone	Speed	Heart rate
30 to 50% of maximum weight lifted	Low	30 to 50% maximum running speed	130-140 beats/ min
50 to 70%	Light	50 to 60%	140-150
70 - 80%	Medium	60 to 75%	150-165
80 - 90%	Sun maximum	75 to 85%	165-180
90 -100%	Maximum	85 to 100%	180

Density

The temporal relationship between load and recovery phases in a training session is called density. It is also referred to as the rest period between two motor stimuli. In more stimuli are given in a certain time period, then the training is more dense that is high. The role of density is two-folded: 1. the fatigue is overcome in the pause. 2. The adaptation process is started.

Volume

It is the total amount of work done in a training session. The total distance covered total number of repetition or the total duration of the activity is the volume. Like intensity, the volume should also be optimum in order to have some effect on the organism (e.g. for the development of endurance, one should run continuously for at least- 30 minutes).

Overload

Overload is a state of decreased performance capacity of a sportsman due to several factors like training and competition load, social problems, family problems, professional problems, economical problems, infection, poor nutrition, lack of rest, over training etc.

Causes for overload

- ✓ Too high intensity of training.
- ✓ Improper recovery period.
- ✓ Rapid increase of load.
- ✓ Too high volume of training.
- ✓ Improper rest during daily routine and irregular sleeping.
- ✓ Similar type of training load over longer period.
- ✓ Lack of faith in coach.

SYMPTOMS OF OVERLOAD

Performance related symptoms

- ✓ Reduced performance capacity, Reduced qualities.
- ✓ Increased recovery period, Loss of co-ordination.
- ✓ Improper and tensed movement.

Physiological symptoms

- ✓ Loss of sleep, weight, appetite, Prone to injury.
- ✓ Decreased vital capacity, Slower pulse recovery.

Psychological symptoms

- ✓ Increased excitability, Uncontrolled emotion.
- ✓ Quarrelsome behaviour, Over sensitiveness.
- ✓ Decreased concentration, Depression, Loss of motivation.
- ✓ Uneasiness, Loss of confidence.


thank
you