CHAPTER - I

INTRODUCTION

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1.1 General Introduction

Everybody should take exercise regularly to keep his body fit. Of course it is true that a modern man is too busy to undergo sufficient vigorous exercises to develop and maintain adequate levels of physical fitness. In today world, sports play an important role in our lives. Not so long ago, it showed its existence as the hobby of the idle rich. Today millions of people under modern conditions participate in it; and sports have got woven into the fabric of modern life, providing a counter weight to the excessive comforts and indulgences of today. In developing countries it helps to fight the frustration of youth, who otherwise became easy victims to boredom because of lack of opportunities in life. If we disregard the importance of sport we do so at our own peril. In games and sports the function of efficient body movement or neuromuscular skill is to provide the individual with the ability to perform proficiently which results in greater enjoyment of participation.

Running, jumping, throwing, climbing and hanging evidently formed the basic patterns of motor movements throughout the life of man. As he passed from primitive to nomadic, to pastoral, to agricultural, to industrial life, he clung constantly to certain movements. These therefore, are truly as much a part of his inheritance in function as are anatomical formations in structure; indeed, the persistence of these fundamental movements through the ages is dependent in part upon the conformation of his anatomy. His fundamental movements are truly racial (J. F. Williams, 1964).

The basic movements of the human body are bending, twisting and stretching. In bending the body contracts and takes up less space. Bending may be forward, backward or sideward; the muscle groups pull, and exert tension on stretching, the opposite of bending, is performed by other muscle groups that enable the individual to reach out into space. Twisting is the rotation of the body around its axis, and is performed by the action of other muscle groups.

In the field of movement studies, movement has been defined in different ways – locomotive movements, gross operational movements, expression movements,
athletic movements, balletic movements, dramatic movements and ritualistic movements. Each of these is a separate and distinct study of man in movement and each study must be considered and appraised in its own particular way. In each case the form of movement experience would contain its own unique features, “its own mode of operation, its own standard of appraisal and its own criteria of appropriateness”. Thus, different kind of proportional knowledge (knowing that), practical knowledge (knowing now) and acquaintance knowledge will support each distinct action (M. Latchew et al., 1969).

The immediate capacity of an individual to perform in many varied stances or athletic events is referred to as motor performance. Motor performance is related to physical fitness as the performance of motor skills rises and falls according to the elements of muscular strength, endurance, coordination etc. It may be defined as a limited phase of motor ability emphasizing capacity for vigorous work. The aspects selected for emphasis are endurance, power, strength, agility, flexibility and balance. More specifically, motor fitness might be referred to as running, jumping, dodging, falling, climbing, swimming, lifting weight, carrying loads and enduring sustained effort in a variety of situations.

In the interrogative process children must learn to hold up their head and later to manipulate tension in the muscles in order to sit up. As they gain in the necessary adjustments for posture, they are also learning patterns of locomotion. Postural-transport movement starts with crawling which resembles the movements of the amphibian. It is done with the body in contact with the floor, the arms and legs working in a homolateral pattern. The next stage of postural-transport is the child’s venture into the biped position followed by walking. Unless children master the cross-pattern activity of creeping they may have difficulty not only in walking but later in mental learning (H. M. Barrow, 1983).

All human movement is performed within the parameters and the limitations of neuromuscular skeletal system complex. The muscles provide the power and force for dynamic movement and when acting in conjunction with the myriad of levers of the skeletal system provided for an unlimited number and variety of skills. Gardner (1965) states that there may be only a limited number of skilled patterns
The concepts are inherent in any movement from the single locomotor task to complex sport skill, from the movement of unskilled labour to those of a surgeon. These concepts are important in early learning in physical education and are later integrated into the learning of all the physical activities in which one participates throughout life. Since children are curious about themselves and the movement tasks in which they engaged in Physical Education as those information are meaningful to children. These experiences help children to understand and appreciated their own movement potential. It provides an opportunity for them to develop their own ideas in challenging and enjoyable ways as they attempt to solve movement tasks.

It is important for children to develop a basic understanding of the movement concepts in the early years of school physical education programme. Integration of the movement-concept into all aspects of the programme begins with these early experiences and becomes more and important as the child progresses (B. Nichols, 1980).

The term concept is used to mean the intellectualization of an idea or notion. The development of concepts is dependent on the developmental level and intellectual capacity of the child; and a wide range of levels of understanding exists in each age group. It has been suggested that the child’s ability to understand rather complicated concepts is possible at an earlier age than that previously accepted

Jean Piaget has supported this view; with the increased emphasis on school programmes on understanding the physical world, it can be assumed that the elementary-age child is capable of understanding many of the concepts related to levers, motion and the like. The teacher is best qualified to select the concepts that are comprehensive to the children with whom he works (Jean Piaget, 1963).

Human movement involves many of the organic systems of the body : the skeletal system (e.g., skeletal levers), the nervous system (e.g. impulses send message to the muscle to contract) and the muscular system (e.g. muscle contraction results in the release of force). It is also concerned with mechanical principles, on the forces that act on the body and the effects that these forces produce (e.g. gravity).
From the earliest times running has been a natural part of man’s existence, which is a pawing movement. The body is propelled forward by the force of the push backward against the ground. This propelling force and the efficiency with which it is used is the key to the speed that a runner may develop.

No two athletes run in precisely the same way as people vary in their anatomic structure and body proportion in strength and flexibility in posture and in their interpretation of some fundamental phases of running action.

Running speed is the product of length and frequency of strides their ratio changes from one phase of a race to another and from athlete to athlete. Yet these two factors are always interdependent, and maximum running efficiency exists only when they are in correct proportion; depending mainly, on the weight build, strength, flexibility and coordination of the runner.

Speed of movement seems to be a rather general quality present in both arm and leg movements which is of course, necessary in a number of skilled acts, and at the same time, apparently highly trainable. Speed of bodily movement i.e., agility, seems somewhat independent of speed of limb movement, and is related to balance and dynamic strength. The relative independence of strength and speed, however suggests that if some kind of weight training is given preparatory to athletic performances which require rapid movements, training should include movement which although “overloaded” could be rapid and similar in quality to those desired in the sports skill.

Since the level of requirements of strength abilities proper and endurance in various sports differ considerably. The characteristics of strength endurance in each sport has specifies of its own. In some sports requiring ultimate manifestation of strength. Strength endurance is determined, first and foremost by the degree of development of the strength abilities proper. In others, it depends to a greater extent on the specific factors of endurance. The longer the duration of the competitive exercises the lesser its power capacity.

Speed is also an important aspect to perform a motor task. Manifestation of any speed movement requires a good co-ordination between the body parts, which are seen to perform the movement, and regulating part, that is, neurological and
biochemical part. Simple reaction time increases about 0.5 ms per year, and choice reaction time increases 1.7 ms per year. Choice reaction time requires an additional attribute i.e., stimulus discrimination time, which increases more rapidly than motor time (Birren, 1996).

These basic supports of behaviour influences more than just the perceptual motor functioning of the individual; they are reflected in his performance in a number of kinds of mental and perceptual tasks. Physical ability traits at the intermediate level are influential only by motor ability (B. J. Cratty, 1968). The word motor involves the relationship of a nerve or nerve fiber that connected the central nervous system or a ganglion with a muscle. The motor development objective is to perform physical movement proficiently, gracefully and esthetically using as little energy as possible. Movement results as a consequence of the impulse it transmits. The impulse it delivers is known as the motor impulse.

In order to reach optimum performance in games and sports the different components of physical and motor fitness such as endurance, power, strength, speed, agility, flexibility, balance etc. are the pre-requisites. A player will not be able to perform his//her best during training and competitions unless optimum development takes places. Physical education and sports scientists have made numerous efforts to identify the factors underlying skillful performance in various games and sports. For different types of sports the definition of skillful performance would vary and so would the components constituting performance.

Motor development is a direct outcome of participation in physical education activity. It is understood with the relationship between muscular system and the nervous system of individual. Participation in game and sports improve neuromuscular co-ordination, physical fitness, and stock of movements of the individual and helps a person to be economic in his movements. These are the basis of motor ability of the individual. To be more pre size physical development is closely related with the performance of skills such as accuracy, speed and control of voluntary movements, strength, endurance, agility, balance and rhythm which are the determinacy of the motor ability (Sengupta and Banerjee, 1987).

All the factors of motor performance described in this unit depend in varying
degrees on muscular movement and thus, strength. Strength is related to a type of endurance since the more efficient the muscle is its work load, the longer it can function like explosive strength it is also a product of two motor abilities. It is the ability to overcome resistance or act against resistance under conditions of fatigue. In all sports movements, whether fast or slow, movements have to be done under lesser or higher conditions of fatigue. Even for sprints some amount of strength endurance is required in the last phase. Strength endurance, therefore, is important in most of the sports.

In general, speed may be defined as the capacity of the individual to perform successive movements of the same pattern at a fast rate. Speed of muscle contraction would appear to be an innate quality, but certainly speed of movement used in running the sprints or running in any game such as football can be improved through training in the proper techniques and through continued practice in the coordination of movements. In any event, speed is an important element in most athletic performance. Generally, speed can be measured by a short dash of 40 to 60 yards.

Power is recognized as one of the most basic components of movements. It is the capacity of the individual to bring into play maximum muscle contraction at the fastest rate of speed. Power is an explosive action and it is equal to the product of force time’s velocity, where force has to do with muscle strength and velocity with the speed with which strength is used in motor performance. It is the ability to release maximum muscular force at maximum speed. Speed and force are combined in athletic performance for high standards of excellence. Powers is frequently measured by some type of jump, charge, or throws. The vertical jump and the standing broad jump are most commonly used to measure leg power. It is the combination of strength and speed abilities. It can be defined as the ability to overcome resistance with high speed. Depending on the nature of combination of strength and speed the explosive, strength can be further sub-divided into start strength, strength speed (power) and speed strength. Start strength, is the ability to develop maximal muscle force during the starting phase of the movement i.e. sprint start, weight lifting etc. Strength speed is the ability to overcome heavy resistance with high speed e.g., throws, jumps etc. Explosive strength always finds expression in motor movements i.e., it is a form of
dynamic strength. Explosive strength performances, are markedly influenced by the level of motor co-ordination required for a movement e.g., inter and intra muscular co-ordination. As a result explosive strength is highly specific to the nature of a movement and for its development of specific movements (or part of these movements) have to be used as exercises.

One of the most important factors influencing movement is agility. This factor is revealed by the ability of the body or parts of the body to change student to move quickly from one position in space to another. Agility involves coordinating quickly and accurately the big muscles of the body in a particular activity. These rapid changes in movement patterns by the whole body or by some of its parts have been measured by such test items as dodge run, obstacle run, zigzag run, side step and squat thrust. Certainly agility plays an important role in physical education activities. It is revealed to a great extent in sports involving efficient footwork and quick changes in body position. Agility is critical to the success of football game. This area, more than any other, must receive priority attention when training programmes are designed. It is important to use the activity itself in most phases of the training programme, since this will help reinforce the modern pattern (Jack H. Wilmore, 1976).

The concept of agility is difficult to precisely define operationally, even though there is general agreement among most coaches, athletes and researchers on to what is meant by the term agility. Agility, typically, refers to the ability to move and change body position or direction rapidly, without losing balance or sacrificing speed. It is, therefore, a combination of speed, strength, quick reaction, balance and co-ordination, and can refer to the total body or to a specific part, such as the hands or feet (Baumgartner, T. A. and Jackson, A. S., 1975). Agility improvement also comes from changes within the CNS, although the proprioceptors are important in any functional adaptations that result from training. Repetition of basic movement patterns appears to be major consideration in improving these characteristics. Establishing learned patterns of movement that can be recalled quality and integrated into the on-going activity is the desired goal. The specific changes that occur without the nervous system are not clear at the present time.

Agility is a particular sport can be improved by developing training
programme that works on those specific components of agility. The soccer player must work on eye foot coordination and balance strength, power, reaction time, flexibility, mental alertness and the ability to concentrate and focus on the task at hand and all contributes to agility skill. Each of these components can be developed, it training can be taken separately or they can be integrated and practiced as a whole.

Endurance is the result of a physiologic capacity of the individual to sustain movement over a period of time. Endurance is of two kinds. One is associated with strength, whereas the other is associated with the circulatory-respiratory systems. Endurance is a very important ability in sports. But at the same time it is an ability the importance of which is often overlooked in several sports. Endurance is the product of all psychic and physical organs and systems. No other motor ability depends so much on the working capacity of complete psycho-physical apparatus of humans as endurance. All other performance factors depend on one or more parts of this psycho-physical apparatus and as a result are directly or indirectly affected by endurance.

Since motor ability is looked upon as a mosaic comprised of many components, then each of these components must contribute interdependently in a successful performance of a movement skill. However, there is no common agreement on what these components as possible.

Physical education has until recently been considered almost exclusively as a profession providing programmes in education institutions but is now also an academic discipline with a growing knowledge base whose focus point is human movement. “Education is a cultivating process, dealing with all round development of the moral, intellectual and physical power of the whole man” (Sathyanesan 1982).

Academic achievement is the most important objective of education. It signifies accomplishment or of a performance carried out successfully. The most important need and desire of a student is to achieve his best, which will make his life worth-living and add respect and value to his personality. It is observed that a student who has always succeeded in most of his effects will aim much higher and a student who has failed most of the time will aim lower to make sure of his success. Low achievement is an educational wastage of a nation, which amounts to a big loss to nation’s monetary resources. In our country it has been observed that the academic
achievement of the student is decreasing, which seeks a serious attention of educationists, teachers, parents and the researcher also this gradual under achievement leads to a problem of wasting of human researcher by which society suffers an irreparable losses. The raw materials of Indian democracy of tomorrow are the millions of children and youth of today. The wealth, power and spiritual forces of this nation lie in the infinitely varied potentialities of these boys and girls. Indian education commission (1964) also expressed this opinion by stating.

Today motor performance is considered to be an important adjunct of intelligence. Piagent (1981) stated that intelligence develops out of motor activity and not merely out of passive thinking. Thus the development of intelligence in a child is possible through proper interaction between the genetic endowment and the environment involving the big muscle activity. The faster child moves, the faster he grows up and develops into a thinking and acting animal. Some stated that movement is the basis of intelligence. Movement education is the powerful tool which helps an impulsive child acquire motor control and through motor control intellectual capacity and capability lead to a harmonious personality. Vigorous physical activity helps us to stabilize emotion and strengthen nerves, the apparatus of our intelligence. “Intelligence may be described as an inborn ability of brain. It is a general mental adaptation to new problems and conditions of life” (Gupta, 1989).

Higher intellectual accomplishments are beyond the reach of an individual unless he is healthy, physically active and physiologically efficient. Thinking is very much affected by the physiological functioning of the body. Intelligence is expressed through man’s motor behavior. Research studies conducted on the intellectual dimension of athletic performance point out:

a) Excellence in sports is not possible without athletes’ being reasonably intelligent to cope (adjust) with the competitive situation.

b) Training in tactics and strategies of games and sports has significantly improved the performance of athletes in competitive sports.

c) Athletic intelligence and general mental ability are not same. Hence, sportsmen should not be expected to be less intelligent than an average individual. They may have lesser academic achievement because they devote more time to hard physical
labor and it leaves them little time for hard study. Besides academic achievement is not an index of one’s intelligence (Kamalesh, 1988).

Speed movement and quick reaction are prized qualities in athletics. Coaches are frequently heard to praise certain players or an entire team for their quickness. In football a player who is extremely fast poses a constant threat to break away for the long run.

The reaction time is the stimulus-response time interval. We perceive stimulus for our environment and response accordingly. The nerve impulses through the sensory nerve from various sensory organs carry a message to the brain. Highest decision making to central nerves system judges the stimulus and makes a decision. The decision then transmitted to the organs of response by the motor nerve. The said long process takes fraction of second and all most it is an automatic process which is developed at the stage of infancy in once life. Reaction time as define by Johnson and Nelson, 1982 is the interval of the time between the presentation of the stimulus and the initiation of the response. Reaction time may be defined as time between presentation a stimulus and initiation of the response. It includes never conduction time for both incoming and outgoing impulses, and also the time necessary to integrate input and output within central nervous system (B. J. Cratty).

In physical education and sports reaction time is an important consideration of course, it is often overlooked and usually underestimated element in the preparation of athlete. What we refer to as explosiveness is often actually great reaction time. In the field of games and sports we find a constant series of reactions to auditory and visual cues. A player’s ability to response properly, quickly and precisely to the stimulus is of utmost important in determining success in sports. Thus we understand that reaction time has influence on motor ability, motor educability and movement execution or skill execution. Of course importance of reaction time for different games and sports vary. Thus, the influence of reaction ability for a sprinter or player in short catching position is different from the importance of reaction time for a marathon runner. In modern concept of motor fitness reaction time has been considered as an important influencing factor to one’s motor ability. Reaction time has been differentiated from movement time and response time. Response time is
considered as the combination of reaction time and movement time. Considering the situation of a total motor skill to be executed reaction time has been defined as the time between the onset of stimulus and onset of reaction. The movement time on the other hand is the time to complete the movement activity starting from the onset of movement.

Achievement based competition not only brings in advantage to the participant but also enhance the prestige of the individual socially. Further achievement motivates and motivation rejuvenates the urge and effort for higher achievement the vicious circle continues indefinitely like a spire. Achievement, defined as the level of performance of a given task or in a sports contest, is a part of the broader concept called cumulative achievement (Atkinson, 1978). The concept can be determined by the athletes' level of performance while engaged in training and competition in a sports discipline and the amount of time devoted to this specific activity rather than to other activities. Motivation is supposed to influence both the performance and time factors, and cumulative achievement can be illustrated by the degree of success or the personal best achieved during a career. Research has shown that career advancement is positively influenced by individual differences in the motive to succeed among persons who work on doing things by themselves and for them. Motivation is the conceptual term used to explain the cause of initiating and sustaining action, as well as the intensity at which it is perused. It consists of determinants of physiologic drives and psychologic motives which are acquired in response to our social and physical environment. The concept of motivation specifically achievement motivation has attracted the interest of many sports researchers. Motivation appears to be the key to an accomplishment either in sports or in any other competitive area (Dorothy 1978).

Soccer is one of the most important game in the world. Any soccer player can participate in any games and sports activities. Soccer is a part of physical education profession and that of coaching. A great many students who show exceptional skill in some interscholastic sport such as basketball, baseball, and football feet that they would like to become members of the physical education profession so that they may coach.

Football is undoubtedly one of the most popular and highly appreciated sports
in India. The Indian people play the game of football quite extensively, as they love playing and watching the game very much. Football has a long and rich tradition in India and the history of Indian football is something. Football started its journey in India when the British rulers brought it with them and in no time, it became popular among the masses. The first recorded game held in India took place between the Calcutta club of civilians and ‘The Gentlemen of Barrackpore’ in 1854. The first ever football club in the history of Indian football, the Calcutta FC was established in 1872. However, there are reports the initially a rugby club and later switched its attentions to football in 1894. Some of the other ancient football clubs in Mohan Bagan Athletic Club, founded in 1889, the Dalhousie Club, the Traders Club and also the Naval Volunteers Club. Bagan AC was later named as the ‘National club of India’.

The first football association in India, the Indian Football Association (IFA) started its journey in Calcutta in 1893; however, it did not have a single Indian on its board till the 1930s. In 1898, the oldest in India and also the third oldest football tournament in the world, the Durand Cup football tournament was started in Shimla. The tournament was inaugurated by and named after the then Foreign Secretary of India, Sir Mortimer Durand. The first mentionable achievement for the Indians in Football came in 1911, when Mohun Bagan AC became the first Indian team to win the IFA-Shield Trophy. The trophy was previously won only by the British teams based in India. The win is still referred as one of the biggest achievements in the history of Indian football.

Soccer is a very famous major game in India. Specially in West Bengal. To play soccer all the components of motor ability viz. strength, agility, speed, endurance, accuracy, intelligence, reaction time, and motivation, are required. It is body contact game of eleven players of each team. The British’s first used to play this game on the green meadows in the 12th century. At that period there were no rules and regulation. The English Association of Soccer was formed in 1863 and some rules and regulation of were implemented for the popularization of this game, soccer was included in the International Olympic in 1900 at Paris.

Perform means to execute performance means to get into action as much higher degree as possible. There are four major groups of factor that are responsible for
motor performance, (i) Genetic traits, (ii) Acquisition of specific skills, (iii) Specific type and level of physical fitness, (iv) General psychological fitness. Sports performance is an unity of execution and result of sports action or a complex sequence of sports action measured or evaluated according to agreed and socially determined norms. The general anthropometric measures are depending upon the genetic factor one inherited from his ancestors which ultimately influence the motor performance.

Research findings show that soccer performance is significantly related to body weight, sitting height, arm length, thigh and calf circumference. Further it has been shown moderate positive correlation between high circumference and their fitness components, i.e. speed, strength and endurance and negative correlation between abdomen circumference and said three fitness components. However, fitness components are the prime requirements for the performance.

In a study of Jr. High School athletes, Shelly (1969) found that those athletes who were outstanding in football were largely mesomorphic and that they were taller and heavier than other.

A high level performance in sports and games not only require certain physical qualities like speed, endurance etc. It is evident that the body build or body profile ‘gets primary’ attention at the time of selection of sports person for various games and sports where superior performance are involved. Physique is useful in choosing suitable physical activity for an individual whose sole purpose is to find and develop talent. Body composition have wide range of implications on performance in games and sports. The components of body profile vary from individual to individual, height, weight, age, body fat% also important for motor performance.

Though kabaddi is primarily an Indian game, not much is known about the origin of this game. There is, however, concrete evidence, that the game is 4,000 year old. It is a team sport, which requires both skill and power, and combines the characteristics of wrestling and rugby. It was originally meant to develop self-defense, in addition to responses to attack and reflexes of counter attack by individuals and by groups or teams. It is a rather simple and inexpensive game, and neither requires a massive playing area, nor any expensive equipment. This explains the popularity of the game in rural India. Kabaddi is played all over Asia with minor variations.
Kabaddi is known by various names viz. Chedugudu or Hu-Tu-Tu in southern parts of India, Hadudu (Men) and Chu-kit-kit (women) in eastern India, and Kabaddi in northern India. The sport is also popular in Nepal, Bangladesh, Sri Lanka, Japan and Pakistan. The first World Kabaddi Championship in the history of the game, was organized in Hamilton, Ontario, Canada, when more than 14,000 people packed the Copps Coliseum, to watch the top players from India, Pakistan, Canada, England and the United States compete.

In kabaddi dominated countries such as India and Canada, it is played on a professional basis with top players earning $25,000 and more for a 2 month season. The player who has made most out of the game is Balwinder Phiddu, who started playing in 1975 and only recently retired after the 1997 World Cup.

Kabaddi is one of the very popular sports in India and gaining popularity, in different parts of Asia. Recently held world cup in Mumbai, is an indication to its popularity, in which twelve countries participated. Kabaddi is a body contact game in which raider attempts to touch the defence players and tries to escape when caught, while the defence players try to escape being touched by the raider and attempt to hold the raider, individually or collectively, by forming a chain.

Performance in a given sport is a complex combination of several factors. Certain factors are dominating and other supportive. Nevertheless, every factor has its own role to play. The complex nature of performance is not merely the product of physical, psychic, physiological prerequisites. It is the accrued result of training and competition, over a period of time, supported by the society in general. The teacher or coach will have to organize and lay stress and guide this process.

Movement in sports and games are highly specific and are the result of training and experience. Motor abilities are causal to fundamental body movements and specific to sports skills. For successful performance of a skill, components of motor ability contribute independently and interdependently. The role of motor abilities, for successful sports performance, cannot be disputed. Strength, endurance, speed, flexibility, agility and coordinative abilities are the prerequisites for motor actions, in all sports. The improvement and maintenance of these components are very important in sports training. Numerous research studies, conducted by experts, in the field of
sports and physical education, have emphasized the importance of motor ability, technical and tactical efficiency, physical and mental qualities, for achieving top performance (Harre, 1982; Bumpa, 1983; Matveyev, 1981; Singh, 1991; Barrow and McGee, 1979). A careful surveillance of performance enhancement, in team games and dual sports, in the recent times, is due to perfection in execution of technique and tactical variations, application of speed and power, and faster game tempo.

Football and kabaddi these days have become the most popular and widely played games throughout the world. In the present study a special emphasis has been laid to find out the differences existed (i.e., Motor ability, Academic achievement and psychological potentialities) between district level male football and kabaddi players.

1.2 Statement of the Problem

The present investigation is concerned with the “Comparative Study of Selected Motor Ability, Academic Achievement and Psychological Parameters between District Level Football and Kabaddi Players”.

1.3 Nature and Scope of the Problem

In India, physical education is, no doubt, a new profession which does not show its sophisticated prosperity and is, as yet, unable to spread its importance throughout the country. So, naturally, the facilities available are not sufficient for any scientific, organized and systematic research work in comparison to other developed countries in all respects of the field.

Particularly in West Bengal the scope of research in this field is limited simultaneously with the limitation of research workers. At the same time it is difficult to have a great number of male players selected for the subject so far as the two games, Football and Kabaddi, are concerned. In spite of all these problems and limited facilities in physical education the researcher is showing greater interest to solve his research problem. The nature of this study is directed towards a comparative one.
1.4 Purpose of the Study

The purpose of the present study is:

1) To observe the selected motor ability between district level football and kabaddi male players.
2) To assess general academic achievement between district level football and kabaddi players.
3) To find out the differences existed on psychological parameters between district level football and kabaddi players.

1.5 Significance of the Study

Result of the study would be helpful in the field of Physical Education and sports in the following ways:

1) The motor ability status of the subjects of both the groups would be known.
2) The academic achievement of both the football and kabaddi players would be known.
3) Results would also indicate the level of intelligence of football and kabaddi players.
4) The difference between football and kabaddi players in reaction time would be clearly known.
5) The status of sports achievement motivation of football and kabaddi players would also be understood.
6) This comparative study may reveal some important difference in motor ability between football and kabaddi players which, in turn may throw new light onto the superior achievement of motor ability levels of players performing in other games.
7) Various investigators in the field of Physical Education and sports may facilitate the supplement of their research thinking concerning not only football and kabaddi but also other related games.
8) The results might be helpful to improve the quality of teaching and coaching methods.
9) It may also help the Physical Educators and trainers to categories their player’s
development of quality and achievement of excellence in all aspects.

10) The results might help any future research in both district level football and kabaddi players.

1.6 Delimitation of the Study

1) The subjects of this study had been confined to male football and kabaddi players at district level of West Bengal.

2) The age group considered for the investigation was 15–18 years.

3) This study was confined to players of Darjeeling, Jalpaiguri and Coochbehar district of West Bengal.

4) The subjects of the present study were 40 district level football and kabaddi players. They were selected randomly from sports authority of India (S. A. I.), Siliguri. There were two groups and each group had 20 players.

5) Psychological parameters were intelligence level, reaction time and sports achievement motivation

6) Selected motor ability parameters were sit ups, shuttle run, standing broad jump, 50 yard dash and 12 min run and walk.

1.7 Limitation of the Study

The study conducted under the following limited conditions:

1) The subjects selected were residents of sports hostel. The researcher had no control over their routine life, diet etc.

2) Time and money were the limiting factors of the study.

3) The research work was done for male footballers and kabaddi players.

4) The degree of interest of the subjects was also a vital limiting factor.

5) Motivation of the subjects was a limiting factor for obtaining data.

6) Instruments used were also a limiting factor with regard to their precision.

7) The Bengali version of the questionnaire was used to assess the sports achievement motivation of the subjects.

8) The Standard Progressive Matrices (sets A, B, C, D & E) was used to assess the level of intelligence of the subjects.
9) Weather, temperature and situation for conducting the test were also limiting factors.

10) The researcher could not measure all the components of psychological parameters but selected only three items measuring (i) intelligence level, (ii) reaction time and (iii) sports achievement motivation.

11) The researcher could not measure all the components of motor abilities but selected only five items measuring (i) strength endurance of abdominal muscles, (ii) agility, (iii) explosive strength, (iv) speed and (v) endurance.

12) For conducting the test coaches and teachers assisted the researcher. Though all of them were oriented with the whole procedure yet individual difference and human factor could not be avoided.

1.8 Hypothesis

On the basis of personal experience and conception formed out of literature surveyed, the following hypotheses were formulated from the present study:

1) There would be significant difference in physique (weight and height) between district level male football and kabaddi players.

2) There would be significant differences between the male football and kabaddi players in performing motor ability variables.

3) Significant differences existed in academic achievement between the groups.

4) Significant differences existed in psychological variables between district level male football and kabaddi players.

1.9 Meaning and Definition of the Terms

(a) Physique:

Physique refers to the shape, size and form of an individual (Sodhi, 1993).

(b) Motor Ability:

Motor ability means the ability to perform fundamental motor skills involving all basic performance traits including co-ordination of arm eye and foot eye, muscular power, agility, muscular strength, cardio-respiratory endurance, flexibility and speed (H. Harrison Clarke, 1976).
According to Mathews motor ability is the ability to carry out particular motor tasks, certain kind of specific motor task have indentified and tested extensively strength, velocity and muscular co-ordination are the factors appeared most frequently in motor ability tests (D. K. Mathews, 1968).

(c) **Strength Endurance**:

Strength endurance is the ability to overcome resistance or to act against resistance under the conditions of fatigue (Singh, 1991). It was considered as the combination of strength and endurance. In the present study, strength endurance of abdominal muscles was measured by knee-bent sit up.

(d) **Agility**:

Agility is the ability to change the direction of the body or its parts rapidly (De Vries, 1971). It is the physical ability, which enables an individual to rapidly change body position and direction in a precise manner (Johnson and Nelson, 1982).

Agility refers to the maneuverability of the body or body parts. It involves and ability to change rapidly the position and direction of body or body parts (Verducci, 1980).

Agility is the ability to change direction quickly and effectively while moving as nearly as possible at full speed (Johnson, B. P. et. al., 1975).

Agility is the changing direction in motion. In the present study agility was measured by shuttle run.

(e) **Athletic Power (Explosive Leg Strength)**:

It is the ability to exert maximum energy in one explosive act (Fleishman, 1964). It is the ability of the sports man to overcome resistance with high speed. The explosive strength is always dynamic and is an, important ability in almost all the sports. Explosive strength is a complex conditional ability and is a combination of strength and speed (H. Singh, 1991).

Power is the amount of work force used per unit of time and in other words power is the capacity of the performer to apply maximum muscular contraction at the fastest rate. Power is a product of the principle of force, times, velocity. In this case
force is the strength of the muscle and velocity is the speed with which the strength is used in movement (Barrow, H. M., 1977). In the present study the leg power was measured by standing broad jump.

(f) Speed:

Speed ability primarily signifies the ability to execute motor movement with high speed. These movements may be cyclic or acyclic in nature.

Schnable (1987) has defined “It is the performance prerequisite to do motor actions under given conditions (movement task, external factors, individual prerequisites) in minimum of time”.

The capacity to move at the highest possible velocities (differentiated according to acceleration and loco-motor velocity) (Harre, 1982).

Time taken by a subject to complete a course 50 yard was recorded to the nearest 1/10th of a second to measure speed. Speed is the capacity of an individual to perform successive movement of the same pattern at a fast rate or even one single movement. The rapidity of any movement may be affected by body weight, density, muscle viscosity and structural and nutritional features such as length of the body part or range of flexibility of the joint. A person who possesses speed is able to make a series of similar movements in a short span of time. Speed in swimming relates to the number of arm and leg strokes a swimmer takes in a given period of time. Muscular strength and the aspect of speed are highly related (Larson, L. S. and Yocom, R. D., 1951) Speed was considered as the rate of change of position. In the present study speed was measured by the performance of 50 yard dash.

(g) Cardio-Respiratory Endurance:

Cardio-Respiratory endurance is characterized by moderate contractions of large muscle group of relatively long period of time during which maximum adjustment of the circulo-respiratory system is necessary (Balley, 1977).

Harre (1986) defines endurance as the ability to resist fatigue. Thiess and Schnabel (1987) also define endurance as the resistance ability to fatigue. Martin (1979) and Matweyew (1981) have also used concept of ability to resist fatigue
for defining endurance. The author presents the following definition of endurance:

"Endurance is the ability to do sports movements, with the desired quality and speed, under conditions of fatigue".

According to Gupta and Giri, endurance is an individual having more vital capacity and longer expiratory phase can retain more oxygen for more time in lungs which is an essential constituent required performing each physical activity for longer duration (Gupta, V. P. and Giri, C., 1965).

In the present study cardio-respiratory endurance was measured by 12 minutes run and walk.

(h) Academic Achievement:

According to dictionary of education, "Academic achievement is the (a) knowledge attained or skill developed in the school subjects, usually designed by test scores or by marks assigned by teachers, or by both, (b) performance of pupils in the so-called "academic subjects such as doing arithmetic and reading history as contrasted with skills developed in such areas as industrial arts and Physical Education".

In the language of Freeman (1962) "A test of educational achievement is one designed to measure knowledge, understanding or skills in a specified subject or groups of subjects".

Academic achievement refers to the progress of a child makes in school as measured by scores on achievement tests, grade points average, and promotion from grade to grade and the development of proper attitude. Any experienced teacher knows that academic achievement requires more than intellectual capacity. Non-intellectual factors, such as the will to achieve, health and self-concept are almost certain to play an important part in a student’s ability to achieve academically (Bucher, 1983).

Academic achievement means proficiency in academic subjects which is measured by the marks obtained from the annual examination by the students in their own school records (Mathew, 1973).
(i) Intelligence Level:

"Intelligence is the aggregate of global capacity of the individual to act purposefully, think rationally and deal effectively with his environment" (Wechsler, 1979).

"Intelligence may be described as an inborn ability of brain. It is a general mental adaptation to new problems and conditions of life" (Gupta, 1989).

In 1921, 14 experts were asked what they understood by intelligence. Among the definitions given were included the following (Kamlesh, 1988).

i) The power of good responses from the point of view of fact (E. L. Thorndike).

ii) The ability to carry on abstract thinking (L. M. Terman).

iii) The ability to learn to adjust oneself to the environment (S. S. Colvin).

iv) The ability to adapt oneself adequately to relatively new situations in life (B. Painter).

v) The capacity for knowledge and knowledge possessed (V. A. C. Herman).

vi) A biological mechanism by which the effect of a complexity of stimuli are brought together and given a somewhat unified effect in behavior (J. Peterson).

vii) The capacity to inhibit an instinctive adjustment (L. L. Thurstone).

viii) The capacity to acquire capacity (H. Woodrow).

ix) The capacity to profile by experience (W. F. Derrback).

In the present study intelligence level was measured by Questionnaire of Standard Progressive Matrices (Raven, 1977).

(j) Reaction Time:

Reaction time is the interval time between the presentation of a stimulus and the initiation of the muscular response to that stimulus. A primary factor affecting a response is the number of possible stimuli, each requiring their own response, that are presented.

Hick (1952) discovered that the reaction time increases proportionally to the number of possible responses until a point at which the response time remains constant despite the increases in possible responses (Hick's Law).

Reaction time as defined by (Johnson and Nelson, 1982) is the interval of the
time between the presentation of the stimulus and the initiation of the response.

Reaction time may be defined as time between presentation a stimulus and initiation of the response. It includes never conduction time for both incoming and outgoing impulses, and also the time necessary to integrate input and output within central nervous system (B. J. Cratty).

In the present study reaction time was measured by Nelson Reaction Timer (1965).

(k) Sports Achievement Motivation:

Achievement based competition not only brings material advantage to the participant but also enhance the prestige of the individual socially. Further, achievement motivates and motivation rejuvenates the urge and effort for higher achievement: the vicious circle continues indefinitely like a spire.

Watson (1982) states that in sports, achievement motivation is the degree to which a player is willing to approach competition situation. Murray et al. (1938) revealed that need achievement is manifested in behaviour expressing a desire for accomplishment, prestige, ambition, the need to overcome obstacle, to seek challenge, to exercise power, etc. when desire for achievement becomes dominant concern for the person, it is expressed in restless driving energy aimed at achieving excellence, getting ahead, improving things better, faster, more efficiently and finding unique solutions to difficult problems. People with strong achievement motivation generally are self confident and they set challenging goals demanding maximum effort. Lazarekic and Bacanac (1985) showed that sports motive achievement significantly correlated with emotional engagement in sports achievement situations.

In the present study sports achievement motivation was measured by Questionnaire of M. L. Kamlesh (1987).