



Intelligence and Sports: it's Interrelationship

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Abstract

The study reflected the interrelationship between Intelligence and Sports through various literature review method. Intelligence is a noticeable factor in any learning and hence the physical education teacher should understand the concept of intelligence and its impact on performance. Reviews from literature give us the basic idea about intelligence and sports: its relationship. Researcher used Raven's SPM and Otis test for measuring IQ. And many of them also used academic performance as indicator of intelligence. Very few found the inter relationship between intelligence and Physical Performance. But there were many signs which indicated that there may be positive relationship between achievers in sports and their intelligence. Researcher suggests to study more on this area which one of the important factors in sports achievement.

Key words: - Intelligence, Sports

Introduction

Sports and physical activity have been considered as an integral part of human life since its origin. It is commonly accepted that sports and games fulfil the requirements of human activities. A revolutionary achievement of electronic media has made it all the more important not only in the lives of participants but also among the millions of spectators, viewers and listeners. A sport is now popularly conceived as both socially and personally helpful activity. In modern time, the spirit of extreme competition has changed the entire scenario in sports. Direct assistance from various sports sciences such as sports physiology, sports medicine, biomechanics and sports psychology have raised the sports performance to a great height. In the modern world, scientific approach in sports training and coaching is very vital for high performance (Singh, 1983).

Intelligence

Sport is a psycho-social activity. It has both psychological and social dimensions besides physical, physiological and technical aspects. Man's interest in sports is found among all the society of the world. Most of the nation's share a common interest in sport competition,



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especially during Olympic Games, where people from all nations focus their attention on the drama of competition. But the quality of participation of the athletes and sportsmen is determined by their psychological factors. In this modern era of competition, psychological preparation of a team is as important as teaching different skills of a game on the scientific lines.

The uses of psychological principles were also important for the performance in sports and therefore, it is given greater consideration in present days. There are certain accepted psychological principles which have to be applied during training, so that players are able to show their best performance. Coaches, physical educationists and sport scientists have always expressed a great need to know more about those psychological principles which are helpful in improving the motor skill of players.

During severe competition, a sportsman undergoes many important behavioural changes. Today physical education scientists and coaches need not to be expert in the matters of skill training only but also should act as engineers who understand the mechanism of human behaviour in and outside the play field, under extremely intense situations.

Suinn (Suinn, 1976) Jean ClavateKilly, a three-time winner of Olympic gold medals, reported that his only preparation for one race was to ski (the course) mentally. Suinn uses several techniques of sports psychology to enhance performance. Of course, the methods were tailored to meet the need of each athlete. Seven gold medallist in swimming event of 1976 Olympic Games winner Mark Spitz said that at this level of physical skill, the difference between winning and losing is 99% psychological.

Now coaches and physical educators have become more aware and worried about the psychological and sociological aspects of sports rather than merely physiological fitness and skill in the various activities. They realized that psychological and sociological characteristics of the participants contribute more towards their success than mere physical fitness. They further need to know more about principles of motor learning, patterns of growth and development, the role of emotional phenomena, motivation for the peak performance, interpersonal relationship and character traits of the athletes.

Krojil(Krojil, 1964) emphasized saying that the players do not play with their bodies alone but they use various mental processes side by side. Hall (Hall, 1908) reiterated that physical education is not an end in itself but it is for the sake of mental and moral culture. It is to make the intellect feeling and will more vigorous, sane, supple and resourceful.

Kane (Kane, 1972) defined that "an individual's physical (athletic) abilities are related to his personality structure." The environment in which physical abilities are displayed (e.g. in games and sports) constitutes an ideal setting for the development of desirable personality characteristics such as confidence, sociability, self-reliance, co-cooperativeness and general personal adjustment.



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It is believed that biological capabilities of athlete have reached to the saturation point. Therefore, future record will be broken with psychological approach of the competition. In modern competitive sports, psychological factors of an individual or a team have become as much important as teaching different skills of a game on scientific lines. Today, the battle is fought and won with psychological strategies and not with only guns and sophisticated weapons. Same is the case with modern competitive sports for winning a game or a race.

Many factors like personality, motivation, physical characteristics and motor abilities as well as environmental situations are regarded as having an interacting influence on an individual's selection of the achievement in various physical activities. Although variables and their effects on activity participation has been the subject of a number of studies, the role of intelligence has, to a great extent, been overlooked.

Speculation arises as to whether intelligence is related to activity participation, and if so, to what extent. If one adheres to the organismic point of view, proposed by Cattell (Cattell, 1971) and supported by some research evidences, then one probably finds strength in the theory of the inter-relatedness of factors pertaining to physical growth, motor performance, social adjustment and intelligence. On the other hand, much evidence is offered to demonstrate the independence of such factors.

The role of physical activity in the lines of individuals and groups within the formal intelligence range, within gifted children and within retarded children has evaluated in terms of the extent of their physical activity as well as their relative success in such activity. More intelligent students seem to have greater activity interests than individuals with lower intelligence. The psychological elements concerned with intellectual behaviour and emotional development are important aspects of physical education. These elements are more difficult to identify, appreciate and apply in the field because they are mostly covert in their origin, though they take external manifestations. Hence, the physical educationist should know the nature and relationship between the psychological elements and physical education aspects like intelligence, motivation, practice, method of learning, guidance, knowledge of results, transfer of training, etc. so that the roles and responsibilities are characterized, through appropriate action, to the expected goals. Some of the important, psychological elements and forces which influence the performance in physical education are motivation, individual differences in potentialities, intelligence, and maturation and so on. Psychological elements seem to be the underlying covert factors which directly and indirectly influence the performance and achievement of the students and either assist or hamper their performance.

Intelligence is a noticeable factor in any learning and hence the physical education teacher should understand the concept of intelligence and its impact on performance. It is better for him to assess the intelligence level of his students and present them significant physical tasks.



The physical educator should understand that a student who is academically weak need not be deprived in sports because performance depends on other factors like interest, motivation, type of coaching, etc. He should also not entertain the idea that participation in sports and games necessarily interferes with educational studies. The physical educator should help the students get rid of this wrong concept and support them to improve simultaneously both in academics and physical activities. Physical education, thus, has important psychological elements to be considered by the physical education teacher to bring about better physical performance by his students. Factors like personality, self-awareness, confidence attitudes, and perception influences the behaviour of a player. Physical education provides opportunities for sensory experiences which were of significant importance to intellectual growth.

According to Guilford (Guilford, 1967) one of the varieties of intelligence measured by psychometric tests is kinaesthetic perception and according to Piaget (Piaget, 1972) sensory motor activities are a form of practical intelligence. These indicate the importance of physical activity towards the growth of overall intelligence and to overall intellectual functioning.

Pestalozzi, Froebel, Montessori and the Macmillan sisters were able to see the importance of physical activity in intellectual functioning and produce forms of education that took cognizance of it. Intellectual participation in activities encourage creative and analytical thinking, minimizes professional assistance from the physical educator. Opportunities to make sound judgments and decisions, based on evidences and variables involved, require unassisted intelligence and logical thinking by the students. Thus, **intellectually supported program and its effects are indisputably essential for the improvement of effective sportsmanship.**

It is a matter of regret, however, that in spite of its role in sports, the factor of intelligence has not yet received due significance in the field of education and training in sports and physical activities.

Case studies of athletes in various European countries indicate that **those with more academic background and with higher score on Intelligent Quotient tests, as would be expected, are better equipped to engage in self-assessments of the psychological and physiological data collected about themselves than their less educated teammates.** Those less gifted intellectually, seem also to have a more difficult time engaging in self-administered relaxation and activation training prior to competition. After competition, understanding reasons for success or failure seems similarly more difficult for those athletes with lower I.Q. scores.

It is, of course, apparent that the intellectual group such as athlete has of himself and of appropriate training strategies should, to a large degree, influence his success in maintaining and improving his condition within the unknown environment earlier to and during high level



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competition. Cratley (Cratley, 1972) suggested that it is a common observation that runners and swimmers possess a sense of time or pace that enables them to swim or run more "intelligent races". Whether such a quality is primarily perceptual or intellectual is debatable.

According to Best, (Best, 2009) intelligence is the ratio of mental age to chronological age multiplied by 100 to eliminate decimals. The persistent notion that there are some kinds of thought processes and intellectual strategies important in athletics has continued to plague those interested in cognitive aspects of sport. Several researchers in the mid 1980s have begun to shed some light on these important relationships (Bumett, 1987)

The field of intelligence is slowly spreading its tentacles into other fields where human interaction with the environment is more. A sport is another such field where intelligence is required to a greater level.

Intelligence test

The study of human behaviour and intelligence in context to games and sports raised many an eye brow for, most people think that physical activity has nothing to do with the thinking process in a man. This view is wrong because research on human psychology has upheld that - cognitive, affective and motor process are so interlinked that talking about one is irrelevant without talking about the another.

To many people, the word "intelligence" refers to an individual's ability to perform cognitive task, whereas, some psychologists argue that intelligence refers to an amalgamation of a number of relatively separate abilities. Intelligence tests measures achievement as well as ability. This means that the two people can earn the same score of different reason; one because of high ability and low achievement and other the vice-versa. Booz (G.O.Booz, 1957) told that intelligence is a term which is so commonly used and yet rather difficult to define in a precise and generally accepted form.

From many intelligencetestes, **Standard Progressive Matrices (SPM)** (John C. Raven) intelligence test for general intelligence is used in Sports. Intelligence score (quotient) indicated by the Standard Progressive Matrices (SPM) intelligence test for general intelligence. (**Reliability** $r = .90$, **Validity** $r = .70$) The Standard Progressive Matrices (SPM) is a group or individually administered test that nonverbally assesses intelligence in children and adults through abstract reasoning tasks. It is sometimes called Raven's, although the SPM is only one of three tests that together comprise Raven's Progressive Matrices. Appropriate for ages 8-65, the SPM consists of 60 problems (five sets of 12), all of which involve completing a pattern or figure with a part missing by choosing the correct missing piece from among six alternatives. Patterns are arranged in order of increasing difficulty.

The test is untimed but generally takes 15-45 minutes and results in a raw score which is then converted to a percentile ranking. The test can be given to hearing- and speech-impaired



children, as well as non-English speakers. The Standard Progressive Matrices is usually used as part of a battery of diagnostic tests, often with the Mill Hill Vocabulary Scales. The SPM is part of a series of three tests (Raven's Progressive Matrices) for persons of varying ages and/or abilities, all consisting of the same kind of nonverbal reasoning problems. The SPM is considered an "average" level test for the general population.

Discussion

Reviews from literature give us the basic idea about intelligence and sports: its relationship. Intelligence is a noticeable factor in any learning and hence the physical education teacher should understand the concept of intelligence and its impact on performance. These indicate the importance of physical activity towards the growth of overall intelligence and to overall intellectual functioning. Intellectually supported program and its effects are indisputably essential for the improvement of effective sportsmanship. Those with more academic background and with higher score on Intelligent Quotient tests, as would be expected, are better equipped to engage in self-assessments of the psychological and physiological data collected about themselves than their less educated teammates. Researcher used Raven's SPM and Otis test for measuring IQ. And many of them also used academic performance as indicator of intelligence. Very few found the inter relationship between intelligence and Physical Performance. But there were many signs which indicated that there may be positive relationship between achievers in sports and their intelligence. So researcher suggests to study more on this area which one of the important factor in sports achievement.

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