

SPORTS SCIENCE FOR 21ST CENTURY SPORTS

Dr. Dhruv Kumar Dwivedi¹ and Dr. Puspendra Kumar Pandey²

1. Asst. Prof. Rambai College Dabhora Rewa (M.P.)
2. Sport Officer Yamuna Prasad Sastri College Semariya, Rewa (M.P.)

ABSTRACT: Every human being has a fundamental right of access to physical education and sport, which are essential for the full development of his personality. The freedom to develop physical, intellectual and moral powers through physical education and sport must be guaranteed both within the educational system and in other aspects of social life." In the ever 21st Century changing world technology has got its own influences a result life of the people has become fast and complex in each and every aspect. Now-a-days, in physical education also technology has its own vital role to play. It has raised the standard of physical education and sports to a level, far, far away from the level it was before. The technological advancement in physical education and sports helped the profession attain the goals in an easier and simpler way. Technology has stretched out its areas such as teaching, coaching, performance, and analysis, manufacture of sports material, sports medicine, sport science, sort teaching, etc., through which the profession has grown to a great height. Many researchers have proved that teaching and learning process is positively affected by technology. In physical education and sports we notice advancement in each and every aspect. So far as sport technology is concerned, except to some extent it can't serve its best without technology in physical education and sports but it is playing vital role for coaches, trainers, officials, physical education Director, Physical Education Teachers, students and athletes.

KEYWORD: 21st Century, New technology, Sport and Physical Education.

INTRODUCTION

Sports science is a branch of science that studies the scientific principles during a sport performance and uses these principles to improve the performance of an athlete in sport. Sports sciences play a vital role in the successful sporting performance. Building a foundation of sound sports training is possible only through utilization of relevant sports sciences. Sports science helps us understand the physical and psychological effects of a sport thereby preventing injury to an athlete involved in the performance of the sport. Disciplines in sport science explain the best techniques. For a sport and the safest way of performance. Sports science is discipline that studies the application of treatment and prevention of injuries related to sport medicine. The study of sport science traditionally incorporates areas of

physiology, psychology and biomechanics but also includes other topics such as nutrition and diet.

Leonardo da Vinci said, "Those who are enamored of practice without science are like a pilot who goes into a ship without rudder or compass and has never any certainty of where he is going."

Sports scientists and performance consultants are growing in demand and employment numbers with the every-increasing focus within the sporting world on achieving the best results possible. Through the study of science and sport, researchers have developed a greater understanding on how the human body reacts to exercise, training different environments and many other stimuli.

Sports Physiology:

Physiology is the study of tissue and functions of living things. So sports physiology would be the study of how the body works and functions during athletic activities. Study of metabolic activities in plants and animals is called physiology. Human body is made of various organs and each organ has its own peculiar function, e.g. heart is the chief organ of circulation, the lungs are the organs of respiration, stomach is for digestion. The efficiency of our body depends upon the efficient working of these organs. All organs are interlinked and interdependent on each other. Muscles are acting as a machine for converting chemical energy into mechanical energy. Knowledge of the role of muscular contraction, oxygen debt and fatigue are necessary to improve sports performance.

Sports Kinesiology:

Kinesiology is the study of human and animal movement, performance and function by applying the sciences of biomechanics, anatomy, physiology, psychology and neuroscience. Applications of kinesiology in human health include physical teacher, the rehabilitation professions, such as physical and occupational therapy as well as applications in the sport and exercise industries. There are many different types of exercise interventions that can be applied in kinesiology to athletic, normal and clinical populations. The action of various joints and muscles are highly useful for learning and perfecting the motor skill prevention of sports injuries and also helpful to develop the physical fitness. The scientific training to build body weight and the overall personality of the individuals help in optimizing the movements of our body.

Sports Bio-Mechanics:

Sports biomechanics is a quantitative based study and analysis of professional athletes and sports activities in general. Biomechanics is the study of the structure and function of biological system by means of the methods of mechanics which is the branch of physics involving analysis of the actions of forces. Knowledge of Biomechanics is helpful to analyze movement and skill performance particularly with respect to laws of motion, anatomical capability and body mechanics. Sports performance is the complex mixture of biomechanical function, emotional factors, training and technique. Biomechanics is helpful to analyze and determine appropriate conditioning and treat injuries.

Sports Nutrition:

At sports nutrition, we know that fitness performance is more than just a goal it's a way of life. Intake of balanced diet is very essential for optimum growth and development of our body. A balanced diet is defined as that which contains variety of food stuffs in such qualities and proportions that the body is able to get the nutrients and it need to maintain good health. Intake of such food is helpful to the better performance. Role of nutrition in exercise and sport has increased dramatically in the recent years. Today there is no doubt that nutrition plays a vital role in exercise and performance.

Sports Anthropometry:

Anthropometry is the study the relationship between the size and shape of human body and sports performance. We use internationally standardized techniques to measure athletes and use calculations of body composition, dimensions, proportion and ratio to help improve sport performance.

Sports Psychology:

Sports psychology is the study of how psychology influences sports athletic performance, exercise and physical activity. Some sports psychologists work with professional athletes and coaches to improve performance and increase motivations. Other professionals utilize exercise and sports to enhance people lives and well-being throughout the entire lifespan. Sports psychology is a relatively young discipline within psychology. In 1920, Carl Diem founded the world's first sports psychology laboratory at the Deutsche sport hochschule in Berlin, Germany. Contemporary sports psychology is a diverse field while finding ways to help athletes is certainly an important part of sports psychology the application of exercise and physical activity for improving the lives of non-athletes is also a major focus.

Sports Medicine :

Sports medicine is a branch of medicine that deals with physical fitness treatment and prevention of injuries related to sports and exercise. Although most sports teams have employed team physicians for many years, it is only since the late 20th Century that sport and exercise medicine has emerged as a distinct entity in healthcare sports medicine contributed several techniques for helping the sports person to prepare high level achievement in competition. It deals with the sports injuries, various therapies, rehabilitation, first aid and massage. Injury is a common phenomenon in the field of sports which can convert a Hero to Zero. Sports medicine explains the injury management return-to-play criteria and various exercises to relive from injuries like flexibility exercise, stretches of hamstring. The sports medicine knowledge and techniques are not only beneficial for competing athletes but also everyone involved in the sports activities.

Sports Technology:

Sports technology is the application of engineering to sports activities. Sports technology is growing continuously as an exciting subject. The computer is being used in data collection, scouting and statistical analysis of sporting talents. Electronic instrumentations are helpful to enable the athletes to perform to their maximum potential. Sports technologists are introducing new technologies, improving the existing products and methods into the design new and innovative equipment. The best use of innovative and creative technological products and using electronic device in the sports field is the need of day.

CONCLUSION:

Sports science is one of the most exciting dynamic subjects and it can be adopted to safely enhance the performance of the athlete. Sports sciences have grown beyond the exclusive application of science towards improving competition or performance to improve health and quality of life.

REFERENCES

1. Lee Lerner K. and Brendo Wilmoth Lerner (2007), World of Sports Science, Vol. 2, USA : Thomson Gale.
2. Duane Knudson (2007), Fundamentals of Bio-Mechanics, 2nd Ed., USA : Springer.
3. Sharma, N.P. (2004), Sports Science, New Delhi : Khel Sahitya Kendra.
4. Tanva Cassidy (2007), Understanding Sports Coaching, London : Routledge.
5. Uppal A. K. (2001), Principles of Sports Training, New Friend Publications, New Delhi.