Information Technology and Science in Sports

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Abstract

Modern sports are imbued with the spirit of competition and are played to win. Sports have become the routine of the day all over the world. Countries that excel in sports receive special attention from fellow countries. As a result, all countries are seriously involved in achieving excellence in the field of sports, nowadays sports is not just a display of muscle power but a game of the mind. Along with a healthy body, a healthy mind is also necessary. India is the second most populous country in the world. But in the field of sports, they have lagged behind and it is still 'difficult' for Indian athletes to win a gold medal in the Olympics. After independence, a large number of physical education and sports institutes have been established in the country, some of which offer research programs in related fields. Therefore, athletes and sports scientists need to identify new methods and techniques to enhance sports performance. Keeping all the above in mind, updated information should be provided to athletes and sports scientists in a timely, effective and efficient manner. Libraries and information centers can play an important role in this regard. they should also provide information technology based information services to athletes and sports scientists by developing collections according to their needs. Research and technology in the field of sports and its importance are expressed in this research paper.

Keywords: Sports Science, Research, Technology, Physical Education

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Introduction:

The origin of the game can be traced back to the beginning of any civilization. World history is full of examples and anecdotes that refer to sports in various contexts. Greek, Roman, Indian and Chinese civilizations each developed their own indigenous games and made them an integral part of the culture. In ancient times, games were used to spread cultural morals and ethics. Sports are as old as the history of mankind, physical activity is the basis of human existence and recreation is a basic human need. Whether formally organized or not, sports and games have played an important role in human history since prehistoric times because being physically fit was essential for survival. Therefore, physical activity is used by all societies for self-

preservation, health and well-being, and recreation. The concept of organized physical activity as physical education arose from the modern concept of education. Nowadays it has become an object that is used for drama and exhibition. It can also be considered that sports provide a sense of spirituality, goal achievement, teamwork, personality development, identity and satisfaction, which are not generally available in everyday life. Although sports are part of physical education, there is a difference from both points of view. Physical education is for the masses, but sports are about maximum performance, breaking records and winning. Currently electronic and print media are promoting sports and for this purpose there are a large number of TV channels available and sports content is published in a large number of dedicated sports magazines, web resources, scholarly journals and newspapers. Sports are now played for prizes, publicity and financial gain as well as for entertainment, both nationally and internationally. Now it has become an industry. The newly emerging sub discipline of physical education in the field of sports science is contributing greatly to supporting research initiatives in related fields. Information technology is playing an important role in every corner especially in research activities related to sports. Many physical education and sports institutes and sports clubs have been established in the country and their number is increasing day by day. When we talk about education and research in the field of physical education and sports, we need to focus on some other aspects related to this field, because physical education is 'through education' in the framework of holistic education. Now it has become an integral part of education and the emphasis is on educational experience rather than just building muscles. Educational development in physical education is also a very important area that needs to be discussed as teacher training institutions grow, physical education departments begin to be established. It formally started in the West a hundred years ago and the concept reached India from Britain. In fact, due to the continental influence of education, the entire system of physical education changed. In England, when prospective teachers are required to undertake teaching jobs at various levels, basic entry qualifications, duration of training courses, theoretical course materials, teaching practice lessons etc. The development of England in the field of education in India also had an impact and thus the work of sports research in India also increased.

ICT and Sports Science:

Computers have many applications and new techniques are being developed every day due to rapid changes in information technology. In physical education and sports, computers are used in every aspect, be it personal, staff work, class organization and conduct, health care, assignments, budgeting, financial aid, accounting, publishing, advancement of knowledge,

fund management. Everywhere, conference, library or gym Sharma (2005) indicated that physical education has always been a neglected area for research. But with the emergence of sports sciences like sports medicine, sports psychology, sports sociology, exercise physiology, kinesiology and biomechanics, the face of the subject is gradually changing and it is entering a new era, where sports have a sense of competition. There is a need to find new techniques and methods to improve the performance of sports around the world. Bhagirathi (2005) pointed out that information communication technology is also playing an important role in physical education and exercise for sports Useful for professional development, research, management and resource sharing of physical education and sports teachers.

Technology for physical well-being:

A player who is fit and well nourished is called the 'long race horse' of the field. Technology is constantly helping athletes improve nutrition. There is one such software called Body bite, which allows athletes to track their nutritional and fitness levels. Software like Body bite also provides all the information related to athletes' nutrition, fitness and training. Also, it is more accurate than any kind of estimation done on human basis. Athletes and coaches also use the same technique for diet and training routines. Today, there are also modern gyms through which athletes maintain their fitness. It is through exercises in the gym that athletes control their body muscles so that they do not risk becoming unfit during the game. Now it is believed that not only athletes but also other people can use gym to get fitness. The coaches of each team work on the fitness of the players according to the game.

Impact of Technology on sports:

You can also imagine how much the game has improved with the advent of technology. If we talk about cricket, earlier there were only a few cameras on the field and almost three decades ago it was not possible to cover an entire cricket match, so many times the cameramen missed the happenings on the field. Times have changed and sports have also been revolutionized through technology. The matches are now broadcast live. Usually 22 to 30 cameras are used for a live cricket match, so that there is less chance of missing an interesting moment happening on the field. Here are some techniques that revolutionized the game. Spider Cam (Sky Camera) is becoming very popular in cricket matches today. It is suspended above the ground on a string tied at its two ends and the match is recorded at some height above the ground. Spider cam is very popular not only in cricket but also in many sports including football, tennis. This unique camera was discovered in 1984 in America. Although this camera has some disadvantages in cricket, if the ball in the air

hits the camera and falls, it can move around. 2014 has started a new experiment in IPL. The chief umpire standing on the pitch has a camera attached to his cap, called an umpire cam, which shoots a close-up shot of the bowler as he bowls.

Now, even the stumps are fitted with microphones so that the movement around can be monitored. Earlier, wicket keepers used to provoke the batsmen from behind the wicket, but with the advent of the stump mic, such incidents have reduced drastically. Super slow motion technology has been used in cricket matches since 2005 and broadcasters often use it to show replays on TV. With this, the third umpire decides whether to run out or stump. Super slow motion cameras are installed throughout the stadium that can record 500 photos per second whereas a normal camera can only record 24 frames per second. Apart from this, many modern techniques like electronic scoreboard, DRS, hockey, snick meter etc. have come in cricket through technology and due to this the game has become smarter. It is the new technology that has removed all the barriers to the game. After heavy rain, the field can be dried quickly and the game can be started with 'aqua soaker' called super soaker. Now with the help of 'cricket roller' weighing 250 kg to 3000 kg, the pitch is prepared in a very short time and in a good manner. Now every match is recorded. Watching these recordings makes it easier for players to assess their performance after the match. At the same time, the coach works on correcting the deficiencies of all his players by watching videos. And the players also benefit from it. Bowlers research the batting style of the opposition batsmen and bowl by seeing their weaknesses, same goes for the batsmen and exploit the weaknesses of the bowlers. Bowling speed of bowlers can be measured by speed gun. Not only cricket, but also in tennis, football, hockey, athletics, baseball and basketball, teams watch videos of opposing teams in depth before matches and strategize accordingly.

Sports Science and Technology:

Sports science is the discipline that studies how the healthy human body functions during exercise and how sports and physical activity promote health and performance from a whole-body perspective. The study of sports science traditionally includes the fields of physiology (exercise physiology), psychology (sports psychology), anatomy, biomechanics, biochemistry, and biogenetics. In the world of sports there is a constant increase in getting the best results. Through the scientific study of sports, researchers have developed a greater understanding of how the human body reacts to exercise, training, different environments, and many other stimuli. Technology plays an important role in sports, whether it is used for the athlete's health or as a feature of the athlete's technique or equipment. The development of educational technology has created new opportunities for research in the field of sports. It is now

possible to analyze aspects of the game that were previously considered inaccessible. Sports science is a broad academic discipline and can be applied to the performance of athletes, such as technology, or the use of video analysis for equipment, sports engineering emerged as a discipline in 1998, focusing not only on material design, but also the use of technology in sports, Focused on analysis. To control the influence of technology on sport, governing bodies usually have specific rules to control the influence of technological advantage on participants. Advances in technology have allowed many decisions in sports matches to be made or reviewed off the field, with players now able to challenge decisions made by officials in some sports, similar to the use of Hawk- eye in tennis to challenge umpires' decisions.

Conclusion:

Since the introduction of technology into sports, there have been many changes in the field where the game has become much more transparent than before, the decisions regarding the game have improved a lot. Not just cricket, tennis, football and hockey, but almost every sport has seen increased technological interference. Today, technology is so prevalent that it is being seamlessly embraced in every sport, while more and more new technologies are knocking in sports. Information technology has on one hand made the game very easy and on the other hand has taken the game to every corner of the world in very easy ways. Also, education and research in the field of physical education and sports is growing rapidly in India. Sports institutes with huge potential in this field are imparting education and research is also being done in such centers. But considering the quality of our education and research at the international level, the results are not satisfactory. Important issues are that we have to restructure our curriculum, provide excellent research facilities to sports scientists, formulate policies and implement them properly. All deficiencies must be addressed at each level. In short we can conclude that there is a lot to be done in the field of education and research in the field of physical education and sports in India.

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