

Use of Technology in Games and Sport to Support Referee's Decision Making

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Abstract:- As we know technology play an important role in the life of an individual particularly in the field of games and sports. Technology in games and sports established Scientific discipline, improve learning and Coaching, analyze various types of data and technologies that are currently being used by the professional organization to assist referees and Umpires in making the correct decisions. The use of appropriate technologies can be used as an effective aid to refereeing. With the introduction of the use of technology to assist the referee, illegal play, rules violation have been dramatically reduced to a certain extent, and led to improved player performance. Using technological tools by the referee and Umpire does provide the mechanism to motivate in ensuring the correctness of the decisions. So the introductions of technologies have been a major contributor in improving the accuracy of decisions and provide fairer competition in the tournament.

Keywords:- Technology, Decision, Referee, Play, Improve

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I. Introduction:-

In the 21st Century the entire face of referee's Decisions in match has changed drastically with the advancement of modern technologies. The international federations of various games are taking revolutionary steps to introduce technological advancement to assist the officials and referee's decision in order to boost the interest of the player and audience and bring more attraction towards the game. In international matches, the referee used various technological tools like smart watch, microphone, wireless mic, smart goggles with built in hawk eye and hot spot technologies, supervise various technical cameras and video cameras and other numerous equipments which help to take their decision accurately.

On the other hand most of the sport has evolved at a rapid pace over the years. The rules and regulations, equipments, facilities have changed to such an extent that the original format of many sports is completely changed. So it is the responsibility of referees and umpires to upgrade their knowledge time to time to improve the standard of a game and also fulfill the expectations and demands of fans and spectators.

The decisions of the referee in the match influence the outcome of a game. Most of the international matches are disturbed because of single wrong decision. But referee always try to provide fairer competition without partiality and give accurate decision in the match. Most of us do not understand the pressure placed on referees for Split-Second decision making and mastery of the rules. Before Starting the match referee is required to know the important characteristics of an event and also know about teams and climate condition of the day. Referees have to respond immediately in a match that influences the whole game. It is the duty of every referee to update their knowledge regarding the game by using internet. In recent years, there has been an increasing use of technological tools in various tournaments to support the referee's decision. For example in Cricket such as Decision Review System(DRS), the Stump Cameras, edge detection, hotspot, LED stump and bails, Spider camera, Supper Sopper, Chips in bat etc. third umpire who are in the position of review referee's decision by using modern technologies such as slow motion, Hawk eye, using different angle cameras, multitasking video cameras to give accurate decision. Most of the sports do not use technology in referee's decision making because there is not considerable investment in the use of technology to support the modern technological tools which helps the referee's decision. On the other hand the elite, high profile sports are completely depend on modern technological tool and processes that helps referees to confirm their decisions.

Technology:- Technology is all around us, it aims to help explore physical activity and also referred to as any electronic device which is used to assist the referee duties during a match. It is also defined as technological devices which are used by any third referee in the determination of rules and regulation of the match.

Technology Used In Cricket To Assist The Referee Decision:- International cricket, before 1992 all the decisions pertaining to what was happening on the field was decided by the two on-field umpires. With the coming of technology, the third umpire has been used to supplement the role of the two Umpires. The third Umpire sits outside the playing area with access to various technological tools like T.V, Slow motion videos,

different angles Images of certain situations like disputed catches and boundaries to help the central Umpires. Among these technologies the most popular is the Hawk eye technology, a computer and camera system which traces a ball's trajectory used in Cricket. Decision Review System (DRS) is another example of using technology by Umpires. This system was first used in 2008 to assist the match officials with their decision-making.

Technology Used In Soccer To Assist The Referee Decision :- There are various technologies that has been introduced in FIFA to assist the referee decision like multi-camera based ball trajectory analysis, electronic field manipulation, drones, slow motion cameras etc. Soccer has constantly resisted the assistance of technology. For the first time in the history of FIFA "Goal Line" technology was introduced in 2014 Soccer World Cup. Goal line technology is expected to decide whether a ball has passed over the goal line. However instant slow motion videos assist the referee in deciding of off-side disputes, fouls and penalties. Vanishing Spray is another technology used by referee. This technology is used by the referee to mark the area from which a free kick is to be taken or where a foul occurred.

Smart ball technology was also introduced in Soccer history. In this technology a ball loaded with a computer chip along with electronic cables are run under the playing area to track the ball's precise position including when it was fully passed the goal line. When the ball has crossed the goal line a radio signal is transmitted to a watch like device worn by the referee. Hawk eye which is used in cricket and tennis, is also used in soccer. This technology has been a leading multiple ball tracking system. Goal referee is another technology used in soccer. In this technology a chip is inserted in the side lining of the ball and magnetic field is placed on both side of the goal line. When the ball crossed the goal line, a change in the magnetic field is detected by antenna behind the goal post which sends a signal to referee within a second.

Technology used in tennis to assist the referee's decision:-

Earlier hot spot technology used in tennis. In this technology two infrared cameras on opposite sides of court that are continuously recording an image is required to assist the referee's decision like cricket and soccer, Hawk Eye is also used in the sport of tennis to help officials of tennis to decide close line calls. Hawk Eye was invented by a British person Paul Hawkins. All Grand Slam tournaments of tennis provide line review system which uses Hawk Eyes technology, using visual images and data provided by a number of high speed video cameras located at different locations around the playing arena. There are some rules under which Hawk Eye is used:-

Each player receives two challenges per set to review line calls

If the player is correct with challenge, then the player retains with same number of challenges.

If the player is incorrect with a challenge, then one of the challenges is lost.

II. Results And Discussion: -

As we discussed above how the technology helps referee in decision making process. Here are some another points that referee provide during the game by using different technological tools.

Fair Play: - When the match played between two teams with observance of rules, respect the opponent, unfair behavior, non violation in the game, accept the referee's decisions etc is defined as "Fair Play". The match which is played with fair play represents positive benefits in the game, using common sense and respects their opponent, other officials and fans. Technology helps the referee to provide fair play competition in the tournament.

Officiating :- It is defined as the officials which control the whole game by facilitate the game rules and regulations during the match. The duties of sports officials or referee are to smoothly conduct the match with accuracy and fair matches. Various technological tools such as smart watches, ear phone, Slow motion clips and digital score help the referee to act as impartial Judge in sport competition.

Player Performance :- When a referee use various technological device in the match to support their decision, it directly influence the performance of players. For example in a Cricket match new technology has been introduced which support the referee's decision making accuracy and also motivate the players to follow the rules and regulation of the match and respect the decisions given by the referees. With the introduction of modern technology every move or activity of the player is notice by the experts in the stadium. In the practice session players try to learn skills and technique very smoothly and accurately, so the performance of the player improving day by day with the help of technology used by officials in the game.

III. Conclusion :-

Thus it is concluded that different technologies have successfully been implemented in various sports and this has greatly improved the playing environment and absolutely assist the referee to make their decision accurately and promotes a more attractive sport for spectators and players. In the modern era it has been shown

that the participants and spectators have become more receptive to the introduction of new technology because it reduces the margin of error of the human eye. Therefore it is more appropriate to build the system for technological officiating aids based on the different kinds of contribution to the officiating process.

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