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Various Technologies in Sports: The Current Scenario

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Abstract

The use of technology in sports is increasing rapidly. Modern technology is capable of analysing a gymnast's movement in a positive element through video recordings, while talented gymnasts can equip their uniforms with motion sensors that authenticate their movements. Such technological advancements were unimaginable in the past. Hobby quantities should be measured with greater variety, precision, and sampling frequency. This study presents a brief creation of motor gaining knowledge of in-game and its desires for era back-up. It presents homes and obstacles of diverse sensors used for game pastime sign acquisition, ways of verbal exchange, and homes and obstacles of verbal exchange channels. The author sheds light on the evaluation of diverse components of game pastime signs and facts processing and timing, spatial, and computational electricity constraints of processing. Attention is additionally given to the artwork facts processing strategies, together with data gathering and data mining. In the end, a few technological tendencies and demanding situations in sports are evaluated, together with the Internet of Things, clever game systems, and real-time biofeedback structures and packages (Balmer, Pleasence & Nevill, 2011; Haake, 2009).

Keywords: Physiological, Sensors, Sports, Technological Tendencies, Wearable Gadgets

INTRODUCTION

Leisure physical activities can be classified into leisure games, or leisure, beginner games and expert games. Each of the three classes has a different position in society and consists of people with extraordinary goals. But one element is not unusual for all of them: desire and the desire to quantify one's bodily pastime. The technology used in the game is growing very quickly. The modern era has homes and capabilities that were most easily imagined a few years ago. Internally, for example, it is easiest to analyse a gymnast's movement in a positive element through video recordings, while talented gymnasts can equip their uniforms with motion sensors that authenticate their movements (Fuss, Subic & Mehta, 2008). Such structures can provide a comprehensive assessment of their movement in three-dimensional space based on a kinematic version of the athlete. Similar examples can be found in various sports. Today, cheaper toys and hobby tracking devices have been introduced. Devices with armbands provide statistical parameters and selected body time substance functions. For example, they count the steps taken during the day, can detect falls, sleep quality, etc. Typically, such devices collect the movements or physiological techniques of the consumer at a low frequency and random accuracy that is reasonably adequate for their purpose.

TECHNOLOGY IN SPORTS

The processing abilities depend upon several things and situations, such as the time of processing, region of processing, processing complexity, processing electricity, battery capacity, etc. Time of processing relies upon the kind of comments. If the comments are concurrent, given for the duration of the motion, the processing needs to be done in real-time. If the

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comments are terminal, given after the motion is completed, then the device can manage to pay for doing the whole lot post-processing (Haake, 2009).

Human-Centred Computing (HCC) places the customers at the centre of the layout and improvement. HCC is an interdisciplinary subject that intersects laptop technological know-how, psychology, and cognitive technological know-how. HCC specialises in the layout and implementation of computing structures that help sports and the improvement and development of sportspersons. It is the technological know-how of designing computations and computational artefacts for the support of human endeavours (Jaimes, Sebe, & Gatica-Perez, 2006).

AIM OF THE STUDY

The specific aim of this scholarly qualitative study was to explore the impact of modern technology on sports performance.

METHODOLOGY

A thorough online and offline search procedure was applied for the acquisition of evidence in this systematic qualitative study. An analysis of the paper was systematically done through online databases such as PubMed, Google Scholar, and Google Advanced Search.

Sport Background of Feedback Systems

Numerous accurate executions are required to accurately analyse a positive movement. According to sports activities experts, remarks are the maximum vital idea for gaining knowledge of, besides the exercise itself. It may be concluded that motor gaining knowledge closely relies upon the remarks given to the learners (Fuss, Subic & Mehta, 2008). In this paper, attention is given to the opportunities of era subsidised motor gaining knowledge of enhancements. During the exercise, the natural (inherent) remarks records are supplied internally via human feel organs. Augmented remarks are supplied via way of means of outside sources. Historically, this was done through teachers and trainers; these days, it is done additionally by way of technical gadgets and devices.

Motor learning that supports traditional teaching can be improved by the introduction of a technical device that can measure, calculate and provide the locations of the movements made. For example, a teacher cannot see the pressure applied during a gymnast's jumps, or the teacher cannot see the exact place where the tennis ball hits the racket during a serve. With the help of a special technical device, both the pressure of the gymnast and the impact point of the tennis ball can be measured, calculated and delivered (Foster, James & Haake, 2012).

Drone Technology Utilised in Sports

The unmanned drone era with an embedded digital camera (Digicam) enables taking super snapshots and motion pictures from high altitude. A Drone is simply, in easy phrases, a flying robot. This plane is normally managed from a specialised far-flung control, and with the assistance of a software program, it can tune all matters within the air. Many athletes, such as runners, basketball players, skiers, and climbers, use drones to document their practice sessions for peers, whether or not they require adjustments. A slight development in non-public fine time for the competitor will take off seconds or smash a second. Nowadays a sports activities occasions have become greater real and realistic to air. The main benefit of using drones in global sports is their ability to reach athletes worldwide. (Murison, 2017).

Wearable GPS Era

The Global Positioning System era has been applied for a while in aggressive games, which include in practice sporting activities, in addition to in the course of play. By the usage of Electronic Performance and Tracking System (EPTS) gadgets, groups can track the motion of gamers on the pitch and accumulate huge quantities of data approximately their overall performance. In 2006, the GPS for discipline game programs was made. Although GPS has been licensed for aggressive sports activities, a few questions remain concerning the suitability of GPS for monitoring rapid, high-speed runs. Consequently, GPS has been usually utilised in

American football, baseball, basketball, rugby union and league and soccer (Kingsley, 2020).

Modern Track and Field Events Using Technology

Track and discipline vary from a maximum of different disciplines, as it is measured in meters and seconds. A fraction of a second could make all the difference. Which is why the system which tracks race information must be as dependable as practicable. A digital beginning pistol is any other innovation used to enhance tune occasion startups. In addition, as the runner begins, the development of the race is tracked by the usage of Radio-Frequency Identification (RFID) chips. These chips are very popular and are used globally for monitoring tempo and distance (Balmer, Pleasence & Nevill, 2011).

Aerodynamics

While any game can demonstrate this new function, tennis, fencing, swimming, golf, and cycling serve as superb examples. In the twenty-first century, global-class tennis gamers (and their coaches) have a clear understanding of the legal guidelines of aerodynamics to gain an edge over opponents. Therefore, engineers broaden technological gadgets for sports activities after analysing the real aerodynamics of the respective video games and sports activities (Fuss, Subic & Mehta, 2008).

CONCLUSION

There is no doubt that athletes in amateur or expert recreation will usually attempt higher results. Keeping up with Coubertin's Olympic motto: ―Faster, higher, stronger!‖ Application of technology and era can also additionally provide a vast aggressive advantage, what's in today's exceedingly aggressive and commercialised recreation really priceless! The cognisance of this paper is extended motor studying using era. While it isn't debatable that technology can outperform human senses in nearly all aspects, one query remains: Can technology take a step into the area of training? With a wonderful solution, a great opportunity opens. For example, a clever eCoach that follows athletes' movements and offers recommendations primarily based on the statistics from athletes and the recreation cloud. Perhaps the arena of training can be altered forever (Haake, 2009; Balmer *et al*., 2011).

REFERENCES

Balmer, N., Pleasence, P., & Nevill, A. (2011). Evolution and revolution: Gauging the impact of technological and technical innovation on Olympic performance. *Journal of Sports & Science. 30*:1075-1083. https://doi.org/10.1080/02640414.2011.587018 PMid:21777155.

Foster, L., James, D, & Haake, S. (2012). Influence of full-body swimsuits on competitive performance. *Procedia Engineering. 34*:712-717. https://doi.org/10.1016/j.proeng.2012.04.121

Fuss, F.K., Subic, A., & Mehta, R. (2008). The effect of era on game - New frontiers. *Sports Technology 1*:1-2. https://doi.org/10.1080/19346182.2008.9648443

Haake, S. The impact of technology on sporting performance in Olympic sports. (2009). *Journal of Sports & Science 27*:1421-1431. https://doi.org/10.1080/02640410903062019 PMid:19764001.

Kingsley, D. (2020). How have new technologies improved athletic performances? | *Articles* | *Analytics.* https://channels.theinnovationenterprise.com/articles/229 -how-have-new-technology-improved-athletic performances.

Murison, M. What happens when drones get involved in professional sports? - DRONELIFE, 2017. https://dronelife.com/2017/02/08/drones-sportsactivities/ (accessed February 1, 2020).