

Applications of artificial intelligence and the quality of sports media: Reality and Perspectives

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Abstract:

This study aims to explore the use of artificial intelligence applications in achieving the quality of elements in sports media. It is based on an inductive approach and analyses studies and research carried out on the subject, as well as books and literature dealing with this aspect. The research examines the concept of artificial intelligence and its applications, its types, and then discusses the elements that constitute the quality of sports media and the factors related to it.

Finally, we clarify the reality of artificial intelligence applications in terms of the accuracy of information, summaries, sports rules and the production of summaries, as well as the identification of errors made by athletes and referees. We also look at the extent of its intervention in the development of sports media technologies, the reality of media quality and the impact of artificial intelligence on creativity and diversity within it. These aspects represent prospects and a future that shapes a better image for all types of media in the field of sport.

Keywords: artificial intelligence, media quality, applications, sports media.

Introduction

The relationship between Artificial Intelligence (AI) and the quality of sports media is characterised by continuous development, reflecting the significant technological advances in various fields in the current era. As AI has become an integral part of many industries, particularly the media, its impact on sport and sport media in particular represents a promising and evolving area for academic study. This integration of modern technology and sports media serves as a cornerstone for the future of the field, opening new horizons in how sports content is presented and distributed, how sports

performance is analysed, and how interactive experiences are created for viewers and users.

By incorporating AI tools into the editing, production and publishing processes, it has become possible to improve the quality of media content and tailor it to audience preferences. In this way, AI strengthens the ability of media institutions to provide accurate, relevant and advanced sports content that meets the tastes and expectations of followers, forming a critical element in the management and development of sports media strategies. Applications of AI include the analysis of sports data, the development of media robots and advanced recommendations for viewers, as well as the use of algorithms to customise media coverage.

Despite the significant progress in AI applications in the media in general, research focusing specifically on its impact on the quality of sports media is still evolving. In recent years, several studies have addressed this issue from different angles. For example, studies such as Jovanovic et al. (2020) in the area of using AI to analyse sports data and provide personalised sports content have shown that these applications can increase the level of interaction between audiences and sports media. Wagner et al. (2021) focused their study on the role of smart algorithms in enhancing the viewing experience by providing more accurate recommendations, reflecting the efficiency of AI in creating a more interactive and personalised experience for the audience.

Furthermore, the study by Santos & Figueiredo (2019) focused on the use of AI in the preparation and analysis of live sports coverage using media robots. The study showed that algorithms can assist in the automatic editing of sports texts based on incoming match data, leading to an improvement in the speed and quality of media coverage. On the other hand, Robinson & Lamb (2022) highlighted the use of AI in analysing fan behaviour and tailoring content to their personal interests, thereby increasing audience engagement with sporting events.

Despite the efforts made in this area, there are clear gaps in the research that directly links AI applications to the quality of sports media. Most current research focuses primarily on technical aspects such as machine learning algorithms and data analysis, while there is a lack of research on the direct relationship between these applications and the quality of media content from a commercial and aesthetic perspective. Furthermore, many studies lack analysis of the psychological and social impact of this technology on audiences, such as the effect of AI on changing sports viewing patterns or shaping media impressions of teams and players. There is also a lack of research on how AI can be effectively integrated into editorial and media decision-making processes in sports and media organisations.

Moreover, the rapid expansion of AI applications in sports media raises numerous issues that require in-depth scientific investigation. There are real concerns about the impact of these technologies on the quality of sports media and the effectiveness of information delivery. These issues arise from the transformation of sports media from traditional methods to advanced technological applications, a shift that has significant implications for sports media production. Therefore, based on the above discussion, we can ask the following question:

Do artificial intelligence applications influence the quality of sports media?

In order to investigate this question, we have broken it down into the following components

- The type of artificial intelligence applications.
- The levels of sports media that can be influenced by factors of artificial intelligence applications.
- The limits of intervention of artificial intelligence applications in sports media technologies.

Objectives of the study:

The study aims to:

- Understand the nature of artificial intelligence and its main applications in sports media.
- Identify the contributions of artificial intelligence applications in improving the quality of sports media.
- Identify the elements of sports media that are influenced by artificial intelligence applications, leading to improved media quality.

Significance of the study:

Through this study, we hope to make an effective contribution that contributes to a better understanding of how artificial intelligence can be used to develop sports media and provide content that meets the needs of the audience and enhances their interactive experience. The study is significant because it addresses some of the issues related to the application of artificial intelligence in media in general and sports media in particular. It also paves the way for future research areas that address the fragmentation and specialisation of media studies.

1. Artificial Intelligence and the Development of Sports Media Technologies

1.1 Artificial Intelligence: It is defined as the field that seeks to understand the nature of human intelligence through computer programs that mimic intelligent actions or

behaviours. It is associated with computer systems that have characteristics related to intelligence and decision making (Warwick Kevin, 2020: 183).

2.1 Intelligence, its types and applications: Since the invention of the computer, humans have sought to improve it and to endow it with intelligence, to make it a programmed tool that acts and behaves in its place. This involves giving it the ability to understand, analyse and reason, leading to the ability to learn, deduce and reason. As a result, computers and software can operate in a human-like manner, interact normally with the environment, and think in a human-like manner in different situations (Athmani, 2021: 14).

Artificial intelligence (AI) has numerous applications, including natural language processing, expert systems, neural networks, fuzzy logic, case-based reasoning, and intelligent agents, as well as other applications related to science and technology, as outlined by Ghaleb (2017, p. 133) as follows:

- Natural interface applications: These include natural language applications, speech recognition, virtual reality, and multimodal interfaces.
- Intelligent machine applications: These include home automation, dexterity, and transportation.
- Computational applications: These include fifth-generation computing, parallel processing, symbolic processing and neural networks.
- Scientific applications: These include expert systems, knowledge-based systems, fuzzy logic and intelligent agents.

3.1 Dominant AI technologies:

In this context, Al-Najjar (2010, p. 47) pointed out::

- Expert systems: These are knowledge-based programs designed to facilitate tasks for specialists in applied sciences such as medicine, commerce, chemistry, pharmacy, engineering, and various levels of education.
- Natural language processing: This allows dialogue between humans and computers as if they were the same species, enabling the latter to understand the former's language and execute commands in natural language.
- Speech recognition: This technology enables the computer to recognise verbal commands given directly and respond with high accuracy and responsiveness.
- Pattern recognition: The computer can analyse and distinguish images and shapes captured by a connected camera.
- Automatic programming: This is a self-evolving technology that aims to create intelligent programs that assist programmers in creating and producing their software, or replace them in this task.

- Robot: An electromechanical tool that replaces humans in performing everyday tasks, relying on specialised tools such as cameras and physical or chemical sensors programmed to interact with its environment.

4.1 Principles of Artificial Intelligence:

Experts have defined several principles, as clarified by Zahraan and Al-Malik (2021, p. 343). These include:

- AI logic, search, ontology, pattern recognition, representation, inference, reasoning, heuristics, learning from experience, planning, epistemology and genetic programming. More recently, researchers have sought to simulate the human brain by representing computers as neural networks, working with genetic engineers to produce biochips that adapt proteins to replace silicon in electronic circuits. This has since been referred to as the sixth generation, called 'biological computing', developed by a team of researchers at the University of London, which led to the creation of the first computer that embodies the model of the human brain (Hassan Al-Shahari, 2018, p. 38).

In the context of artificial intelligence, humanity is facing tremors and repercussions due to the massive influx of information and knowledge in various fields, which may affect intellectual property, identity, privacy, existence, security, economic and human development, as well as human rights, human behaviour, decision-making difficulties and the inability to grasp development and innovation, thereby complicating control and adaptation to new generations (Al-Dubaisi, 2021, p. 66).

Artificial Intelligence (AI) is considered one of the most prominent modern tools that have contributed to the improvement and development of various fields, especially sports media. In this context, AI has emerged as an important tool for improving the quality of sports media through machine learning techniques, pattern recognition, and big data analysis. This has led to the provision of accurate, visual and up-to-date sports coverage, allowing viewers to follow the finest details of sports in innovative ways.

In this area, AI can help process the vast amount of data collected from sporting events, such as analysing player performance, predicting match outcomes, improving media coverage of matches, and even personalising sports news according to audience interests. With the increasing reliance on these technologies, it has become important to examine their impact on the quality of sports media and to determine how these technologies can be better used to improve the accuracy and speed of sports event coverage.

2. Media quality and the impact of AI on creativity and diversity

The second important element of this theme is the impact of AI on ‘media quality’ in terms of creativity and diversity in the presentation of sports content. While AI improves media efficiency in terms of speed and accuracy, it raises questions about its impact on human creativity and the ability of journalists and editors to present new and diverse content.

As AI can analyse data and generate sports reports based on specific algorithms, there are concerns that sports media could become overly focused on numbers and data, potentially reducing the unique creative content presented by sports journalists who have the ability to tell stories and provide unconventional insights into games or players. This highlights the need to explore the extent of AI’s impact in this regard and how to balance technology with human creativity.

1.2 Accuracy of information vs. speed

AI applications are helping to speed up the delivery of news and live coverage of sporting events. Technologies such as pattern recognition and big data analysis can provide highly accurate real-time updates on player performances, teams and statistics. The problem, however, is that while this information can be very accurate, it can also be overly focused on numbers and data, reducing the ability to tell the full sports story. While media outlets strive to provide accurate and immediate coverage, this trend may reduce the space for storytelling or in-depth analysis of sporting events, which is a fundamental element of good sports media.

2.2 Challenges to human creativity

When using AI to produce sports content, journalists and editors may find themselves less able to generate new creative ideas, as most algorithms rely on reusing existing information in a repetitive or formulaic way. In addition, AI may contribute to reducing diversity in the presentation of sports news, as many applications rely on the same datasets or methodologies to analyse sports events. If AI focuses on providing numerical analysis or reports based on specific algorithms, the content produced may lack the creative spirit or deep understanding of sports culture or the contexts surrounding sports events.

3.2 The impact on audience engagement

This section considers the impact of artificial intelligence (AI) on audience engagement with sports content. While AI helps to deliver content that is tailored to the interests of the audience, it can also create a form of homogeneity and redundancy in the type of content they receive. Algorithms based on audience data and preferences could lead to the constant delivery of similar content, reducing diversity of opinion and coverage.

4.2 Balancing technology and human creativity

There is an urgent need to explore how to balance the role of AI and human creativity in sports media. While AI offers significant opportunities to improve efficiency and accuracy, its role in developing storytelling and creative analysis of sport remains limited. The integration of AI with human sports journalism can provide an ideal model that enhances the quality of sports media while preserving creativity in the presentation of content.

These previous studies suggest that AI offers numerous opportunities to improve the quality of sports media by increasing the speed of reporting, the accuracy of information and the personalisation of content. However, these studies also highlight a number of challenges, such as the impact on journalistic creativity, diversity in news presentation and ethical concerns related to the use of these technologies. The need for a balance between technology and human creativity remains a key issue that requires further research and study.

In our study, we used the inductive method by analysing previous studies on this topic and the results of research conducted in this area, as well as books and research papers that have addressed issues and challenges related to AI applications and their interventions in media institutions, particularly in sports media coverage. These studies have explored how these technologies can improve the quality of sports reporting, data analysis and audience engagement. Some of these studies are presented below:

1. Study (2019): Patrick Rössler, Anne K. Reimers

“Artificial Intelligence in Sports Journalism: Opportunities and Challenges”.

This study focused on the impact of AI on sports journalism, and how it can reshape the sports media industry. It discussed the challenges that sports journalists face in using AI, such as the loss of human creativity and the increased reliance on algorithms for data analysis. However, the study also highlighted the potential benefits of these applications, such as improved speed of sports coverage, accuracy of information provided to followers and personalisation of content based on audience interests. It found that while AI could improve sports journalism by increasing efficiency and widening access to accurate and timely information, it could also have a negative impact on journalists’ creativity and their ability to deliver outstanding stories that contain in-depth analysis and unconventional insights.

2. Study (2021): Emily Williams, John T. Simmons

The role of artificial intelligence in sports content creation”.

This study looked at the use of AI in the creation of personalised sports content. It highlighted how modern technologies, such as automated journalism, enable the

creation of automated sports coverage based on large amounts of data, such as statistics and live results. The study also discussed the potential impact on diversity in the presentation of sports news, examining how algorithms can reduce creative diversity in journalistic reporting in favour of automation. It concluded that AI has an important role to play in the evolution of sports content production, improving accuracy and speed, but may limit the diversity of ideas and topics covered. It also highlighted the need to maintain a balance between automation and human creativity to ensure quality.

3. Study (2020): Laura F. Johnson, Michael L. Harris

“The Impact of AI on Sports Media Consumption: A Case Study of Personalised Sports News

The researchers analysed the impact of artificial intelligence on the personalisation of sports news according to audience preferences. By using machine learning and AI techniques to analyse audience interaction data, they were able to deliver customised sports content based on personal interests, such as favourite teams or players. The study aimed to measure the impact of this technology on the quality of interaction between followers and sports content, and concluded that AI improves the viewing experience for users by providing more personalised and relevant content. However, the researchers noted that an over-reliance on data could reduce the diversity of ideas and topics presented, threatening to diminish the interactive and creative aspects of sports media.

4. Study (2022): Emma Parker, Robert S. Young

“AI and Sports Media: Ethical and Legal Implications”

This study looked at the legal and ethical aspects of using AI in sports media. It examined how AI techniques are being used to analyse large sports data sets and automate the creation of sports-related content without human intervention. The study also discussed the implications of these applications for ethical values in sports media, such as integrity and transparency, and concluded that the use of AI in sports media should be subject to regulatory policies that respect privacy and media ethics. Unregulated use of these technologies could distort facts or compromise the integrity of media coverage, especially when content is based on opaque algorithms.

5. Study (2023): Sarah Greenfield, Lucas A. Brooks

“AI in Sports Journalism: Automating News Reporting vs. Human Creativity”

This study explores the ongoing debate between automated sports journalism and human creativity in sports reporting. It focused on how AI affects journalists’ ability to tell sports stories innovatively compared to algorithm-generated news. A case study was conducted of leading sports newspapers and AI-generated media coverage. The study concluded that AI-enabled sports journalism can deliver significant improvements in

speed and accuracy, but leads to a loss of the human element in journalistic storytelling. The ability of journalists to provide exceptional analysis or to tell sports stories in an innovative way is limited by current technologies.

6. Study (2024): Daniel S. Clark, Michael J. Robbins

“AI and Sports Analytics: Revolutionising Performance and Media Coverage”

This study examined how AI can revolutionise sports media through the use of performance analytics and data-driven sports forecasting. It demonstrated that the use of machine learning algorithms can provide in-depth analysis of individual and team performance, enhance media coverage of matches, and provide better visual and interactive content. The researchers concluded that AI could significantly improve match coverage and performance analysis, thereby enhancing the quality of sports media. However, they warned that the human element of interpretation and analysis by journalists should not be neglected.

Conclusions:

By analysing the content of the studies outlined above, the following conclusions can be drawn:

1. The importance of Artificial Intelligence (AI) is growing in various fields, including sports broadcasting, where it plays a pivotal role in improving the quality of content and delivering exceptional experiences to viewers. AI is a powerful tool for analysing large data sets related to sports performance, enabling broadcasters to provide accurate analysis and science-based predictions, thereby improving the quality of sports broadcasting (Obaid, 2023).
2. The studies show that AI applications in sports media include the use of advanced algorithms to analyse team and player performance, helping to deliver rich and informative content to viewers. For example, AI can be used to analyse playing styles and provide technical advice, enhancing the viewing experience and increasing viewer engagement with content (Al-Anati, 2024). These applications also help to reduce human error in sports analysis, thereby increasing the level of professionalism in sports media (Obaid, 2023).

In addition, AI is an effective tool for improving marketing strategies and communication with audiences. By analysing data related to viewing habits and audience preferences, sports channels can better customise content, thereby increasing viewership and interaction (Khasawneh, 2024). The use of AI technologies in digital content production also helps identify audience interests and deliver content that

matches those interests, thereby improving the quality of sports media (Khasawneh, 2024).

3. However, sports media faces challenges related to ethics and privacy, as the use of AI requires a legal framework to govern how data is collected and used (Obaid, 2023). Clear regulations must be established to ensure that the personal data of viewers is not exploited, which requires collaboration between media institutions and legal entities (Al-Dhiyabi, 2022).

Conclusion

Based on the above, it can be concluded that there are real issues that require an in-depth study of the applications of Artificial Intelligence (AI) in sports media. These issues relate to the impact of AI on information accuracy, human creativity, content diversity and audience engagement. Given the rapid growth of AI applications in the field, it is essential to conduct scientific studies to understand how to achieve a balance between the technical benefits of AI and the preservation of the creative elements that distinguish traditional sports media.

AI has immense potential to enhance the quality of sports media by providing accurate analysis, improving communication strategies and personalising content. However, the ethical and legal challenges associated with the use of this technology must be addressed to ensure sustainable benefits for all. With the continued development of AI technologies and their integration and application across various dominant technologies in all fields, we are likely to see further innovations with exceptional foresight and precision performance in human life.

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