Reclaiming the value of qualitative analysis in sports performance research

Spyridon Plakias[1*,A-F] iD

[1] Department of Physical Education and Sport Science, University of Thessaly, 42100 Trikala, Greece

*Corresponding author: Spyridon Plakias; University of Thessaly, Argonauton kai Filellinon, Volos 382 21, Greece; email: spyros_plakias@yahoo.gr

ABSTRACT

Quantitative metrics and technology-driven approaches have reshaped sports performance analysis (SPA), yet they risk overshadowing the equally vital contribution of qualitative methods.

This opinion paper highlights the value of qualitative analysis in capturing the complexity, context, and meaning of player and team behaviors, elements that numbers alone cannot explain.

Drawing on video-based evaluations, case studies, and narrative reconstructions, qualitative approaches provide insights into tactical, psychological, and interactional dimensions of performance that are indispensable for bridging the science–practice gap. By integrating qualitative and quantitative perspectives, SPA can achieve a more balanced and applicable paradigm, ensuring that scientific research remains relevant to real-world coaching and athlete development.

This paper calls for a renewed recognition of qualitative methods as a central pillar of SPA and invites further scholarly contributions to this evolving discussion.

Keywords: contextualization, qualitative analysis, science–practice gap, sports performance analysis.

INTRODUCTION

It is well established that qualitative methods offer an in-depth understanding of complex phenomena, allowing researchers to understand the "how" and "why" behind behaviors, decisions, and events (Eakin & Gladstone, 2020; Lim, 2025). This contribution makes them very useful in the field of sports performance analysis (SPA), because the performance of an athlete or a team is a multifactorial and complex issue (Mujika et al., 2018; Yang et al., 2024; Zentgraf et al., 2024). However, their value is often underestimated.

Recently, the Journal of Sport Sciences published an editorial by Memmert (2025) that offers a valuable and timely reflection on the current and future directions of SPA. I fully agree with the author's emphasis on several key areas: the integration of big data and machine learning, the need for solid theoretical foundations in research design, the adoption of experimental approaches to strengthen causal inference, and the critical importance of contextualization and open science practices. These points form a strong and coherent framework that can guide SPA research in the years to come. Particularly noteworthy is the author's call for benchmarking, transparency, and reproducibility, which resonates with the broader movement towards open science in sports and exercise research.

However, despite these significant contributions, the editorial presents a vision of SPA that is quantitative mainly and technology-driven. While quantitative metrics, advanced tracking systems, and machine learning models are essential, performance analysis is both quantitative and qualitative. This omission is particularly striking given Memmert's own recognition of the importance of contextualization, which is best achieved through qualitative approaches (Lames, 2023).

This opinion paper was initially written in the form of a "comment" on Memmert's editorial and submitted to the Journal of Sports Sciences. However, the reviewer to whom it was assigned recommended rejection of its publication, even though, as they wrote in their comments, "I deem the efforts made in this comment valuable in general." One argument against the comment was that, even if we accept that qualitative analysis dominates the practical domain, "this would not suffice as an argument for why qualitative analysis should be more prevalent in the scientific field."

The question that arises from this reviewer's remark is: why then is research conducted in the scientific field at all? Is it merely to produce publications, or is it to provide insights that can ultimately assist practice? Therefore, the purpose of this paper is to emphasize the contribution that qualitative methods can offer to SPA, to invite authors to conduct such studies, and to invite journals to evaluate them objectively based on their contribution to applied, on-field practice.

Accordingly, this opinion paper adopts the position that advancing sports performance analysis requires a more balanced epistemological framework, in which qualitative and quantitative approaches are treated as complementary rather than hierarchical. In this view, qualitative analysis plays a central role in contextualizing data, interpreting behavior, and ensuring that research outcomes remain meaningful for applied practice.

Qualitative Analysis: The Forgotten Dimension

In modern soccer and other team sports, qualitative analysis, particularly video-based evaluation, remains the primary tool used by coaches and performance analysts in practice (Nyman et al., 2025; Wright et al., 2012; Wright et al., 2016). As Plakias et al. (2025) argue, there is a growing need to acknowledge the value of qualitative match analysis, which captures the tactical, psychological, and interactional nuances of performance that quantitative data alone cannot explain. A dataset might show that a team's passing frequency decreased in the last 15 minutes. However, only qualitative observation can reveal whether this was due to a tactical shift, opponent pressure, or mental fatigue.

Moreover, qualitative analysis is indispensable for contextualization, a key challenge for SPA, as Memmert (2025) rightly identifies. Context in sports is inherently complex, dynamic, and socially constructed. Understanding the "why" behind player and team behaviors often requires in-depth video analysis, expert interviews, and narrative reconstruction, tools that are part of the qualitative research tradition (Lim, 2025).

A common criticism of qualitative approaches concerns subjectivity, limited generalizability, and perceived lack of rigor (Mwita, 2022; Queirós et al., 2017). However, contemporary qualitative research has long moved beyond unstructured observation, employing established criteria for trustworthiness such as triangulation, transparency, reflexivity, and analyst consensus (Adler, 2022; Ahmed, 2024). In performance analysis specifically, structured video observation protocols, multi-analyst coding, and integration with quantitative and contextual data could provide a robust framework for minimizing individual bias while preserving contextual depth (Anguera et al., 2017; Lames, 2023; Mujika et al., 2025). Importantly, the aim of qualitative inquiry is not statistical generalization, but analytical and theoretical insight into complex, context-bound phenomena. When used alongside quantitative indicators, qualitative analysis does not weaken scientific rigor; rather, it strengthens interpretability by explaining why and how performance outcomes emerge in real-world sporting environments.

Bridging the Science–Practice Gap

One of the main criticisms Mackenzie & Cushion (2013) raised regarding performance analysis in soccer was the persistent "theory–practice gap." As Halperin (2018) and Mujika et al. (2025) highlight, case studies are powerful qualitative research designs that enable scientists to collaborate with coaches, gain a deeper understanding of elite performance environments, and produce actionable insights immediately relevant to practitioners. These studies can complement group-based quantitative designs, providing both statistical and narrative perspectives (Halperin, 2018). The role of case studies as a bridge between scientific research and applied practice is another overlooked aspect of SPA. By focusing on real-world contexts, case studies help ensure that performance analysis research is not conducted "for the sake of research," but rather serves the needs of coaches and athletes (Plakias et al., 2025). For example, individualized tactical analyses of specific matches or tournaments can yield practical lessons that no large-scale, aggregated dataset can provide. Clearly, while soccer is frequently used as a reference point due to its extensive performance analysis literature, the arguments advanced here apply equally

to a wide range of team sports and high-performance contexts in which performance emerges from complex tactical, psychological, and contextual interactions.

CONCLUSIONS

Quantitative metrics, advanced technologies, and machine learning models have undoubtedly transformed the field of SPA; however, their dominance risks overshadowing the essential contribution of qualitative approaches. Qualitative methods capture the complexity, context, and meaning of player and team behaviors, elements that numbers alone cannot explain. By incorporating video-based evaluation, case studies, and narrative reconstructions, researchers can bridge the science–practice gap and ensure that scientific inquiry remains relevant to real-world coaching and athlete development.

Ultimately, SPA should not be framed as a competition between quantitative and qualitative methods, but as a complementary integration. A more balanced paradigm, in which qualitative insights stand alongside quantitative data, will enhance the validity, contextualization, and applicability of research. This opinion paper, therefore, calls for greater recognition of qualitative analysis as a central pillar of SPA and invites scholars to contribute to this evolving conversation.

AI DISCLOSURE STATEMENT

The author acknowledges the use of ChatGPT (OpenAI) solely for improving the clarity and quality of the English language.

DATA AVAILABILITY

No new data were created or analyzed in this study. Data sharing is not applicable to this article.

FUNDING

CONFLICT OF INTEREST

The authors hereby declare that this research is free from any conflict of interest with any party.

PUBLISHER'S NOTE

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors, and the reviewers. Any product that may be evaluated in this article, or a claim its manufacturer may make, is not guaranteed or endorsed by the publisher.

REFERENCES

Adler, R. H. (2022). Trustworthiness in qualitative research. *Journal of Human Lactation*, *38*(4), 598-602. https://doi.org/10.1177/08903344221116620

Ahmed, S. K. (2024). The pillars of trustworthiness in qualitative research. *Journal of Medicine, Surgery, and Public Health*, *2*, 100051. https://doi.org/10.1016/j.glmedi.2024.100051

Anguera, M. T., Camerino, O., Castañer, M., Sánchez-Algarra, P., & Onwuegbuzie, A. J. (2017). The specificity of observational studies in physical activity and sports sciences: moving forward in mixed methods research and proposals for achieving quantitative and qualitative symmetry. *Frontiers in psychology*, *8*, 2196. https://doi.org/10.3389/fpsyg.2017.02196

Eakin, J. M., & Gladstone, B. (2020). "Value-adding" analysis: Doing more with qualitative data. *International journal of qualitative methods*, *19*, 1609406920949333. https://doi.org/10.1177/1609406920949333

Halperin, I. (2018). Case studies in exercise and sport sciences: a powerful tool to bridge the science–practice gap. *International journal of sports physiology and performance*, *13*(6), 824-825. https://doi.org/10.1123/ijspp.2018-0185

Lames, M. (2023). *Performance analysis in game sports: Concepts and methods*. Springer. https://doi.org/10.1007/978-3-031-07250-5

Lim, W. M. (2025). What is qualitative research? An overview and guidelines. *Australasian Marketing Journal*, *33*(2), 199-229. https://doi.org/10.1177/14413582241264619

Mackenzie, R., & Cushion, C. (2013). Performance analysis in football: A critical review and implications for future research. *Journal of sports sciences*, *31*(6), 639-676. https://doi.org/10.1080/02640414.2012.746720

Memmert, D. (2025). Editorial for Sports Performance section of Journal of Sports Sciences: Moving match analysis forward – Guidelines and perspectives. *Journal of Sports Sciences*, 1-8. https://doi.org/10.1080/02640414.2025.2535850

Mujika, I., Halson, S., Burke, L. M., Balagué, G., & Farrow, D. (2018). An integrated, multifactorial approach to periodization for optimal performance in individual and team sports. *International journal of sports physiology and performance*, *13*(5), 538-561. https://doi.org/10.1123/ijspp.2018-0093

Mujika, I., Yamashita, D., & Solli, G. S. (2025). Writing high-quality case studies in sport science. *International journal of sports physiology and performance*, *1*(aop), 1-4. https://doi.org/10.1123/ijspp.2025-0025

Mwita, K. (2022). Strengths and weaknesses of qualitative research in social science studies. *Research in Business & Social Science*, *11*(6), 618-625. https://doi.org/10.20525/ijrbs.v11i6.1920

Nyman, A., Ekonoja, A., Kärkkäinen, T., & Szerovay, M. (2025). The Role of Video Technology in Football Coaching: An Integrative Review. *International Sport Coaching Journal*, *1*(aop), 1-13. https://doi.org/0.1123/iscj.2024-0034

Plakias, S., Tsatalas, T., Betsios, X., & Giakas, G. (2025). A new era in soccer performance analysis research? *Insight - Sports Science*, *7*(1), 741. https://doi.org/10.18282/iss741

Queirós, A., Faria, D., & Almeida, F. (2017). Strengths and limitations of qualitative and quantitative research methods. *European journal of education studies*, *3*(9), 369-387. https://doi.org/10.5281/zenodo.887089

Wright, C., Atkins, S., & Jones, B. (2012). An analysis of elite coaches' engagement with performance analysis services (match, notational analysis and technique analysis). *International Journal of Performance Analysis in Sport*, *12*(2), 436-451. https://doi.org/10.1080/24748668.2012.11868609

Wright, C., Carling, C., Lawlor, C., & Collins, D. (2016). Elite football player engagement with performance analysis. *International Journal of Performance Analysis in Sport*, *16*(3), 1007-1032. https://doi.org/10.1080/24748668.2016.11868945

Yang, P., Xu, R., & Le, Y. (2024). Factors influencing sports performance: A multi-dimensional analysis of coaching quality, athlete well-being, training intensity, and nutrition with self-efficacy mediation and cultural values moderation. *Heliyon*, *10*(17). https://doi.org/10.1016/j.heliyon.2024.e36646

Zentgraf, K., Musculus, L., Reichert, L., Will, L., Roffler, A., Hacker, S., Hilpisch, C., Wiedenbrüg, K., Cermak, N., & Lenz, C. (2024). Advocating individual-based profiles of elite athletes to capture the multifactorial nature of elite sports performance. *Scientific reports*, *14*(1), 26351. https://doi.org/10.1038/s41598-024-76977-8