SPORT & TECHNOLOGY: FACTORS INVOLVED IN ADOPTING EMERGING TECHNOLOGIES IN TRAINING COURSES DEDICATED TO SPORTS PROFESSIONS

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Abstract: *Discussions on the collection and interpretation of massive data dedicated to sport are all the rage. In a context of fragmentation of sporting practice and the weakening of traditional structures for processing and analyzing sporting data in a scientific manner, new forms of management are emerging, contributing to the restructuring and digitalization of the sporting landscape (Phomsoupha et al., 2021). The qualitative data collection took place during the second semester, from February 11 to April 10, as part of this research process. The integration of vertiginous devices that aim to improve sports performance by relying on Artificial Intelligence and Big Data Analytics would be a factor that favors both the timely storage of relevant data, the verification of learning and sports optimization and self-assessment (Soundardjee et al., 2020) to maximize the performance of athletes, players and teams and make predictions (Bossard et al., 2009). In fact, the challenge of institutionalizing these tools is to anchor specific training courses in the long term and to ensure that their claims penetrate the Moroccan education system. With this in mind, we analyzed the factors involved in the adoption and appropriation of technologies as part of the Sport Analysis and Technology study program at the Sport Profession Institute. The participants in this study were first-year students enrolled in the Sport Analysis and Technology program, aged between 19 and 20 years, and engaged in different types of sports activities. To do this, we documented how students enrolled in such a course reconcile these activities with modern technological reform. On the other hand, the use of a qualitative study based on semi-structured interviews proved promising to explore and understand the extent to which the explosion of these innovations in the educational and sporting spheres has changed the attentions, interests and stakes of these students.*

Key Words: Digitalization, Systems, Sport Performance, Institutionalization, Sport Professions

1. INTRODUCTION

Interest in data analysis has grown enormously in recent years. Researchers and experts are unanimous in pointing to the effectiveness of these tools in massaging information and exploiting it for analysis and decision-making purposes. This massive data, generally collected digitally, provides crucial information for upgrading the various strategies of companies, whatever their specialty is. Like the digital world, the field of Big Data is undergoing a veritable expansion. Forecasts predict an exponential rate of growth, particularly in technologies dedicated to sport, and are transforming this world at breakneck speed (Williams et al., 2017). This logic is in line with the potential for rationalization that began with the second industrial revolution and has been amplified by the era of the hypermodern 'Technosphere'. These digital devices are widespread throughout the sporting world, used daily in all its facets, and have proved to be particularly suitable for assessing and optimizing sporting performance and can also generate key information about sports and their technical, tactical and strategic dimensions (Giblin et al., 2016). Consider the importance of a data analyst in collecting, analyzing and interpreting large quantities of data during a match to draw useful conclusions. For both coaches and players/athletes, the deployment of digital technology is considerably changing working conditions, is making training sessions more dynamic and is providing a more immersive experience, generating a flow of data while considering the various established criteria, which, once stored, can give rise to reliable analytical results. Generally, these approaches make it possible to provide a coherent vision of the overall activity of athletes and sports organizations, to identify opportunities for improvement, to guide their strategic management or to anticipate market structures linked to the difficulties of monitoring the evolution of supply and demand in terms of sports practices (Hallmann et al., 2011).

In fact, universities are subject to the same constraints as other parts of the economy and are obliged to transform and adapt to the new technological and competitive world in order to remain practically viable. They will be rapidly and simultaneously implementing a more global and cultural approach to the use of technology in education (Miguet, 2010). In addition, the market dimension and the corporate issues involved in defining and structuring expertise in the field of knowledge and education are sustainable in the long term, and the innovative use of training tools and programs are all elements that need to be considered in this complex process (Staii, s. d.).

Education is no exception to this trend, and many governments are investing in this sector in the hope of making their education systems more efficient and effective. In this respect, the Moroccan educational system generally offers a favorable organizational environment for matching university establishments to this technological and digital transition inherent in educational systems, which is sought by the players concerned to establish an assertive and coherent policy in terms of the use and appropriation of the tools of modernization, enabling universities to reconstitute a more effective national governance framework in the service of a better performance of the Moroccan educational system.

Over the last few years, this quest for performance has seen new technologies revolutionize the field of sport, the way in which sport is practiced and the training courses dedicated to sport-related professions. Sports organizations no longer seem to think much about this reality, which could be the driving force behind economic and social development in the same way as the ability to improve the quality of education and training in terms of the educational programs on offer by implementing an innovative recruitment and pedagogical support strategy(Tan et al., 2025). There is a dearth of research and work on the use of technology in the Moroccan sports context, and the issue of the relevance of training curricula centered on sports professions in relation to technology remains largely undiscussed.

The aim of this article is to retrace the context of the emergence and the factors involved in the adoption and appropriation of the Sport Analysis and Technology program within the Institut des Métiers de Sport. The object we intend to describe is operationalized in the form of a process that evolves over time. This leads us to frame this research in terms of two fundamental questions: what is the relationship between sport and technology, and to what extent can the integration of diploma courses in techno-sport, combined with a commercial rationale, satisfy the requirements of the job market? It should be noted that effective segmentation can enrich preferences and distinct sources of choice and satisfaction for trainees (Stewart et al., 2003). In particular, the aim is to show that these two sectors are no longer totally disconnected, and that they have come closer together over the last few decades, whereas initially they had every intention of drifting apart and being confined to separate spheres (Barbusse, 2002).

2. SPORTS TECHNOLOGY: THEORETICAL BACKGROUND TECHNOLOGY: STATE OF KNOWLEDGE

Technology has become the subject of multiple and varied re-intensified use over the last ten years or so, and has become a polysemic term (Masseglia, 2011). This etymological diversion has given rise to ambiguity and confusion in defining the term, especially when it is used

in a sector of activity undergoing continuous change and in relation to hybrid structures such as sports organizations (Bayle, 2007). We intend to list a certain number of designations relating to technology. In its original sense, it is understood as the study of tools and techniques(Raynaud, 2016). By extension, Mansfield (1970) defines it as "*a body of social knowledge concerning the industrial arts"*; whereas Mélèse (1972) considers it to be a sub-system of a company and defines it in operational terms, i.e. at the level of production workshops and the sales force. Hawthorne (1971) characterizes it as "*a set of methodical processes based on scientific knowledge employed in production*". Judet and Perrin (1971) go on to describe *"technology as a complex set of scientific knowledge, machines and tools, but also the systematic mastery of an efficient organization of production"*. For their part, Nicolas, Salerni and Tronchon (1979) confirm that the term generally covers all the techniques associated with the arts and sciences, organized and intended for the production or the transformation process. With hindsight, it appears that technology is not a simple concept to acquire. It is surprising to note that there is no precise and consensual meaning of what technology is, even though these authors attempt to define it, albeit only partially. The interesting thing is to realize that there are many of them, and that we nevertheless find in most of them the terms which constitute the core of what will progressively define the conception of *"technology"*. The concluding reflection that can be made with regard to these definitions refers to the systems and methods of organization that make possible a particular level of activity and design (technological potential) as well as all the fields of study and products that result from it (Robène, 2017).

2.1. The scope of technology in sport

The term modernization of sport often appears as a consumer activity affecting performance and sporting excellence (efficiency of movement, training methods, optimization of tools, evolution of infrastructures and regulations, etc.). However, theoretical contributions have revealed that the uses of Data, as we know them in their current form, only appeared two decades ago. The major scientific advances and emerging trends in this area have revealed the way in which sports are practiced, monitored and analyzed. This major turning point led to the professionalization of all activities and a strengthening of the sporting, educational and political issues surrounding

sports players (Robène & Léziart, 2006). Using a few strategic devices in the game, right through to artificial intelligence and motor imagery, there is a clear link with the cerebral mental representation of an action, without its actual motor execution on the pitch. Digitization, memorization and brain-environment interaction processes are important in that they offer invaluable help in improving sports performance (Cuenca-Martínez et al., 2020). These tools seek to combine virtual reality and motor imagery to provide coaches with a detailed, quantifiable analysis to help them acquire a better motor pattern for technical movements(Putranto et al., 2023). In principle, these are the major foundations of statistical analysis and the elements that make them up, which are used to study phenomena through an information system based on data collection, processing, analysis, interpretation and dissemination of results to make the data understandable to sports players. Sport and all its bodies are of course affected by this phenomenon, which highlights both the difficulty of exploiting massive data in terms of volume, diversity and speed; this represents a major strategic issue and a considerable technical challenge. These essential aspects shed light, for example, on the now fundamental distinction between ancient and modern sport. Over time, human inventiveness has moved beyond in-depth examinations of statistics and tests involving the extraction of information and numerical data to make informed decisions towards new approaches that aim to rethink the combination of sport technologies(Ratten, 2020), as well as the concerns associated with the production of performance and sporting output (Loudcher, 2011). This last point is fundamental because it underlines the importance of the interaction between technological innovation and sport by reintegrating it into a much broader set of mechanisms relating to AI and machine learning, which have now become a relevant analyzer for understanding the meaning of sport. These have now become a relevant analyzer for understanding the meaning that modern sporting practices are acquiring and an essential condition for identifying current trends that are profoundly changing sport.

2.2. The institutional context of sports training in higher education in Morocco

The importance of higher education for the development of human capital is a topical issue. The progress of human capital is based on the foundation of a high-quality

education system, which is a real lever for its development. From this perspective, the challenge facing universities is becoming ever greater. Their mission is to support the development of learners, transmit knowledge, produce research and train generations of students. To fulfil this mission, the government and the players involved are obliged to train highly qualified human capital with the skills required to meet the demands of the job market. The aim is to put in place a coherent strategy based on a training and research ecosystem that aims for excellence in its structures, systems and components, and that relies on transdisciplinarity and the necessary coordination between training and research to enhance the attractiveness of Moroccan universities.

A qualitative survey carried out by the Moroccan Higher Council for Education, Training and Scientific Research (CSEFRS, 2022) highlighted the Kingdom's intention to join the emerging countries and build a knowledge-based economy, which inevitably involves promoting scientific and technological research, through three major objectives:

- Establish an overview of the scientific and technological research system in Morocco and its potential.
- Give scientific research a greater role,
- Shed more light on the implementation of framework law no. 51-17, promulgated in August 2019, concerning the education, training and scientific research system.

To assess the level of training, scientific research, governance and strategy, the CSEFRS, in its report entitled *"Reform of Higher Education: Strategic Perspectives"*, highlighted relevant recommendations with a view to providing a structuring framework and a new dynamic for the development of higher education in Morocco. These include:

- The imperative to be part of Morocco's new socio-economic development model by providing a range of training courses in line with the expectations and ambitions of the Moroccan social project, the needs of the labor market and the objectives of social inclusion for the various categories of the public concerned.

- The obligation to integrate the profound changes and mutations that the digital revolution is in the process of disseminating in all the compartments and operating segments of these components of the

system into the educational offer, organization and governance of higher education entities: advances in academic and technological knowledge, innovations in terms of modes of acquisition, learning and teaching, modes of management and governance of institutions and organizations, relations between stakeholders, strengthening of management skills, improvement of reception, accommodation and entertainment conditions in areas dedicated to students, etc.

- The need to revisit the ways in which higher education institutions are rooted in their local environment, in the light of changes in local governance against a backdrop of advanced regionalization, which calls for new forms of contractualization between universities on the one hand, and the State and the Region on the other, as well as with economic players, the business world, civil society and the entire ecosystem of higher education institutions.

As far as sport is concerned, several successful experiments have been carried out at various universities in terms of business start-ups, partnerships, continuing education, social initiatives and cultural and sporting events. The development of cultural and sporting activities therefore calls for the design of all the necessary and appropriate infrastructure and supervision to make the university a place for learning and living. In this respect, the approach adopted refers to the provisions of the Constitution, in particular article 33, which provides for the inclusion of sport as a right for every citizen: *"to extend and generalize the participation of young people in the social, economic, cultural and political development of the country; to help young people integrate active and associative life and lend assistance to those experiencing difficulties in adapting academically, socially or professionally; to facilitate young people's access to culture, science, art, sport and leisure, while creating conditions conducive to the full deployment of their creative and innovative potential in all these areas".* Beyond its undeniable contribution to the physical and mental health of students, as well as to their open-mindedness, sport must be considered in the planning and extension of the university system and in the master plans for training courses, in order to design an innovative engineering of training, courses dedicated to young people wishing to make their career in the field of sport. Structuring was one of the recommendations made when the 2008-2020 strategy for sport was drawn up at the National Conference on Sport. This strategic planning rationalized

the sector's levers to make its output clearer. It targeted all areas of sport, in terms of how it is perceived and practiced, to serve as a lever for the country's development, while devising mechanisms and resources to inject dynamism into sports structures. The figure below shows the five main levers of the national sport strategy. The way in which academics view this approach demonstrates the ambition of the players involved to modernize the governance of the sports sector, which is becoming increasingly important, by introducing reforms in the training system. In relation to this point, it is up to the government to ensure a public policy for higher education, and to guarantee the necessary support and relays at the level of all the departments involved. It is also important to ensure efficient coordination between the sectoral guidelines and those for higher education provision, to achieve greater synergy between the expression of needs and the planning of relevant training courses around the main objectives and recommendations, which consider the following dimensions:

1. Develop diploma courses for sports professions.
2. Develop "professionalizing" training courses dedicated to top-level athletes.
3. Boost the detection process and develop it in partnership with the management teams within the school and federations.
4. Promote voluntary work to provide high-quality technical support for sports activities.
5. Regulate private training centers and establish an official classification.

The aim is to provide the national employment market, as far as possible, with the human resources and skills it needs. The appropriation of training in emerging technologies centered on sport calls for an optimal configuration.

Figure 1: Levers of the National Sport Strategy 2008-2020/ Source: French Development Agency (AFD)

As mentioned above, however, the question deserves to be rethought in terms of a pathway, for the very idea of 'technology' and its relationship with the concept of 'sport' is rooted in the genesis of close links with a very lofty goal of perfection and innovation.

Following this state of play, we will set out the methodology for our field study; the latter will enable us to highlight the importance of this subject and fill in the gap in research on this under-exploited area. The study will focus on the training courses on offer at the **Institute for Sports Professions** in terms of the development strategies adopted and made available in relation to sports technologies. It will also involve an exploratory evaluation of the training courses in sports analysis and technology currently in operation, as well as their evolution and development prospects.

3. METHODOLOGY

Our intention is to answer the following questions:

1- How do students on the sport analysis and technology pathway manifest themselves both in the quest for innovative practices and in the pursuit of sporting performance?
2- How can such a course maximize immersive knowledge and experience in terms of data analysis and processing?
3- What are the different ways in which students are currently tackling this onerous task?

While the investigative technique used during this research has enabled us to gain a better understanding of the specifics of the responses processed, the appeal that this questioning may confer in the eyes of sports players can be adopted on a large scale to identify the use of technology in sport and understand its impact.

3.1. Presentation of the adopted methodology

From a methodological point of view, our research opts for a qualitative survey technique, based on a direction that is as precise as possible, rather than a quantitative analysis. The qualitative phase of data collection was conducted during the second semester, between February 11 to April 10 2024. The aim is to obtain an understanding of the issues related to our problem through a flexible and relatively structured approach. The highly contextualized nature of the research gives interpretation a central role(Restivo et al., 2018). For this reason, we have opted

for the interpretivist paradigm as the frame of reference for our research.

3.2. Inductive and relativistic reasoning in research

According to Van der Maren (1995), inductive or exploratory research is *"research in which we want to find things rather than prove things. It is the type of research that seems most useful, at least at present, in education"*. This technique, which resembles thematic guidance, is characterized on the one hand by its inductive reasoning(DEHBI & ANGADE, 2019), highlighting the passage of one or more observations and then leading to a general conclusion, and on the other by its interpretability and its methodological stance, which is characterized, among other things, by the fact that the course of the interview and the orientation of the questions are set by the interviewer, and that the working instructions given at the start of the interview emphasize subject-researcher interaction. This tool, borrowed as much from science as from sociology, is essential for understanding the dynamics and representations of learning and the transmission of skills as perceived by students.

3.3 Semi-structured interviews as a means of representing knowledge

In addition to the rigorous analysis of the study, our aim is to highlight relevant aspects that shed original light on the students' appropriation of a modern training program dedicated to the sports professions, which is often opaque and little investigated in research. The interactive dimension, however, presents aspects of exchange and conversation that guide the course of the semi-structured interviews, and act on the representations deeply inscribed in the minds of the students interviewed and the meaning they give to the object under study. According to (Baumard & Ibert, 2007), *"the interview is a technique designed to collect, with a view to their analysis, discursive data reflecting in particular the conscious or unconscious mental universe of individuals"*. It is within this framework that we will collect data, on the basis of a corpus made up of twenty-seven interviews, on which coding and analysis are carried out and centered around well-defined themes. Constant monitoring of respondents' contributions requires regular reminders of the instructions and explanations of the closely related questions. Our tactical intervention was in fact able to limit some of the subjectivity pitfalls encountered by the interviewees in

connection with an institutional subjection that guides the conceptions of their answers:

- Use simple, coherent terms to make it easier for respondents to understand;
- Avoid any affective or emotional charge that may influence respondents and deviate from the meaning of their answers;
- Use simple prompts to facilitate the interview process;
- Constantly monitor the interview process and establish a relationship of trust with respondents.

Table 1: Research design / Source Author

Object of analysis	Training in Sports Analysis and Technology (AST) at the Sport Profession Institute (IMS).
Analysis framework	Mobilization of an encoding system (Strauss & Corbin, 1997)
Analysis unit	Factors of the appropriation of emerging technologies by AST students
Epistemological paradigm	Interpretativism
Modes of reasoning	Inductive case study
Data collection and analysis	Thematic analysis and semantic processing

The choice was made to conduct the qualitative study face-to-face. The objectives were defined in advance to examine the relevance of practices and mechanisms leading to the acquisition of know-how, knowledge or skills acquired by students in the context of their actualization (Bru, 2014). To put this concept to the test, we focused our attention primarily on how students enrolled in such a course reconcile teaching practices with modern technological reform. In general terms, we are concerned with access to the various technologies and equipment used in the field of sport. In this context, the first axis determines the reasons behind students' choice of course. The second focuses on the challenges of professionalizing the training offer and massifying the technological infrastructure. The

quality of pedagogical support and awareness of the use of sport-centered technologies were extensively investigated. Finally, we asked students about their regular use of smartphone platforms and applications for sports-related data processing and analysis. After giving the interviewee the opportunity to express themselves freely on each main theme, follow-ups were planned during the interview on specific points to avoid bias related to the simple juxtaposition of information. The ease of expression and level of commitment of the students interviewed largely contributed to the successful completion of the interview.

4.   DISCUSSION OF THE RESULTS

The aim of this study was to document how athletes, enrolled in sport analysis and technology training, appropriate the technological devices used in sport. The level of adoption of such a program depends on how it is perceived, its usefulness, the reasons given for choosing it and the structure involved in its adoption. The use of interviews also proved relevant, since the appropriation processes studied in a specific context, that of teaching, have been a relatively little-addressed issue until now. The interpretivist perspective enabled us to understand the phenomena and processes linked to the adoption and appropriation of technologies in the context of training analysis of technology sports, and to access and interpret the representations of the interviewees (Demers, 2019). We stopped the investigation when we realized that we had reached the point of theoretical saturation (Herpin, 2010) and had acquired a relatively accurate general knowledge of the problem under study (Glaser & Strauss, 1967).

4.1. Thematic Content Analysis

This article thus proposes a method of thematic analysis for the in-depth examination of discursive statements. It is based on the premise that the treatment of discourse analysis units (words, expressions or similar meanings, sentences, paragraphs) is our fundamental concern. The text is cut up and ordered using **Tropes** software, which brings out the universes of reference, mentions the verbatims and verifies the relevance of the proposed coding by respecting the inductive logic. Finally, the process proceeds to shaping and modeling for in-depth interpretation of the data (Huberman & Miles, 1991). The semantic analysis of texts carried out by Tropes enabled us

to exploit discursive propositional universes based on preconceived references and scenarios. It also provided us
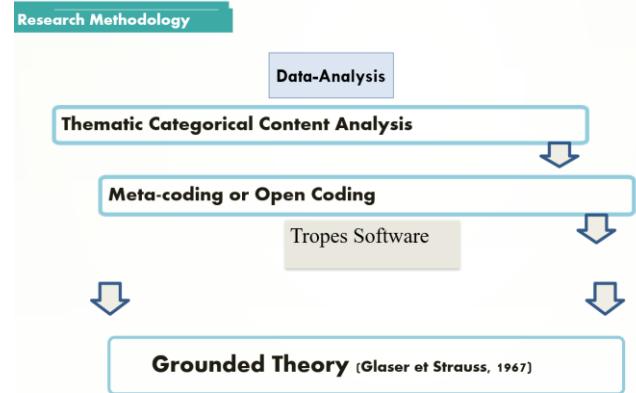

Figure 2: The process of grounded theory using the Tropes software.

with classifications at different levels of generality (words, classes, categories, etc.). The figure below shows a schematic representation of the categorical analysis adopted for the object of our study.
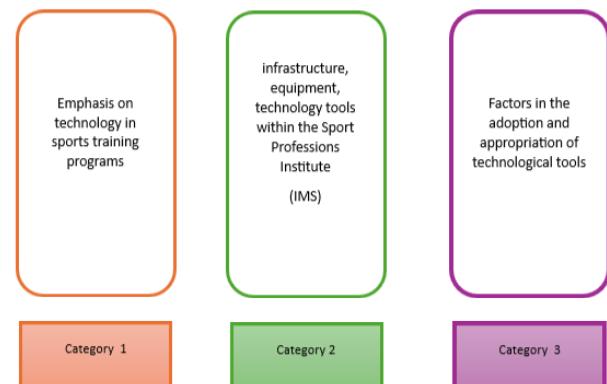

Figure 3: Themes selected from the encoding system carried out/ Source Author.

4.2. Importance of technology in sports training programs

Firstly, although this axis is directly linked to the Reform of the Moroccan Educational System and to the University's institutional policies and depends very much on well-planned study plans to guarantee wide and diversified access to basic digital tools, teachers are also expected to be convinced of this technological contribution and must prepare content and programs defining their

integration into professional and sporting life. Some students point to effective teaching practices as a springboard for learning about technology: *"... We need to redouble our efforts to provide technological resources and diversify the range of activities on offer, because students have needs [...] An effort on the part of the teaching staff and the administration to create a climate conducive to learning"* (STUDENT 3).
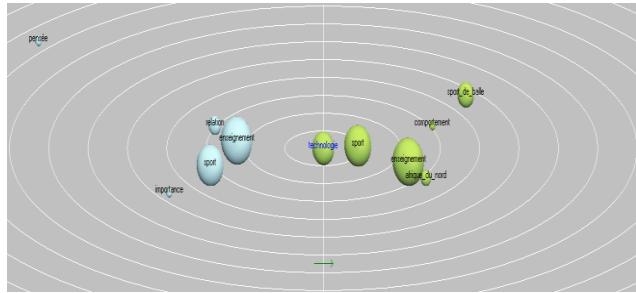

Figure 4: Constellation of the Technology, Sport and Education Spheres/ Source Tropes

The graph above illustrates this idea perfectly. The proportionality is justified not only by the close distance between the *"Technology"*, *"Sport"* and *"Education"* spheres, but also by the number of relationships that link them.

When two or more references are close together, they have many relationships in common. What's more, the second occurrence on the left of the "Teaching" sphere as an actant element clearly shows that teachers are leaning more towards adopting an innovative pedagogical approach innovative pedagogical approach to the use of new technologies in sport. Such an approach must, while mobilizing scientific knowledge, enrich thinking around new digital tools exploited in sporting situations, i.e. tools exploited in the field, and the processing of all variables obtained by these instruments.

4.3. Infrastructure, equipment & technological tools at the Sport Profession Institute (IMS)

Thanks to technological progress, scientists have made significant advances in sports science. Infrastructure is the driving force behind this evolution, and the backbone of any modern organization. It can represent a significant investment, and globally corresponds to all the equipment, software and protocols required for its smooth operation.

The second element is the IMS infrastructure. For this, it's important to look ahead and precisely define your requirements, not only now, but also in the future. That's why our question focused essentially on the relevance of the equipment, rooms and tools available to the institute and their use in the field of sports, and on the cohesion of its architecture with student expectations.
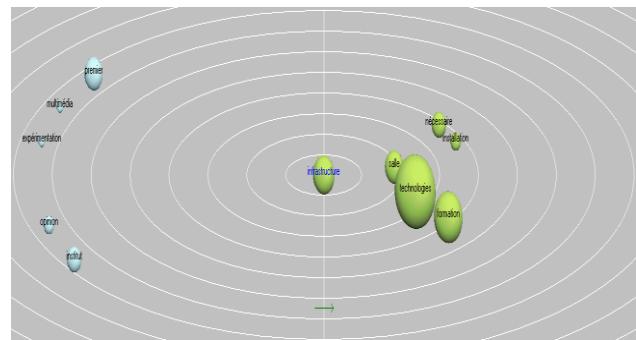

Figure 5: "Infrastructure" center class and its relationship with the "technology" sphere / Source Tropes

The quality and coverage of the infrastructure network is amply demonstrated in respondents' answers: *"... the Institute has a computer room equipped with computers and a multimedia room, sports infrastructures and facilities, etc. in short, conditions are satisfactory"*. (STUDENT 9). However, the presence of the *"experimentation"* sphere, far from the center, points to the absence of learning situations that enable students to appropriate an experimental approach, where teachers are in search of pedagogical improvement. The current infrastructure is not conducive to studies that have focused on investigative approaches, and practical work that has a positive impact on the development of experimental skills.

In addition, visits are scheduled by the Institute's administration to foreign universities to promote cooperation and encourage innovation, thereby increasing the body of knowledge on the use of new and revolutionary sports technologies. As a result of this experience, the Director of the Institute for Sports Professions, during his visit to the University of Bordeaux, committed himself to exchanging best practices and programing academic research, scientific seminars and conferences between the two institutions, and to signing agreements concerning the import of certain technological tools used to optimize sporting performance.

4.4. Factors in the adoption and appropriation of technological tools in sport

Sport is a constant source of innovation(Isserte et al., 2023). Attention to students' learning and to their pedagogical and scientific objectives is an important factor in this study, particularly when it comes to students' perceptions of how to appropriate innovative technological tools aimed at improving performance, experience or accessibility to sport. Based on the interview responses, the students agree mainly on the analysis of sports data with the aim of improving player performance and gaining a competitive edge(Glebova & Desfontaine, 2020). This involves the systematic computer analysis of sports-related data, using software rooted in traditional uses such as office automation or statistics (Phomsoupha et al., 2021).

As a result, the results highlight a generally unclear perception. The appropriations on technology adoption are summed up in the Data-Analyst profession, as the following extracts point out: *"I want to be a Data-Analyst in a Football team"* (STUDENT 15), *"Since childhood I've been passionate about sport and I dream of being a sportsman or working in a field related to sport as a Data-Analyst"* (STUDENT 8), or *"... I want to become a Data-Analyst... it can play a decisive role in the team especially Football.... I can deliver the statistics needed to correct errors and stabilize player performance..."* (STUDENT 1).
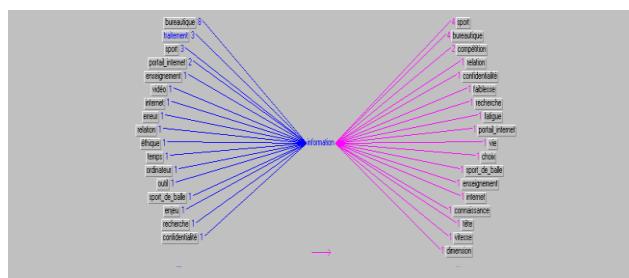

Figure 6: statistical data analysis as a fundamental student perception

In view of these statements, it is necessary to point out that a significant proportion of students are unable to incorporate other outlets for their training, and their perception of the course remains limited. students should be aware that the course offers numerous career opportunities and equips them with the knowledge and skills required to master the fundamentals of sports practice in relation to emerging technologies; the course is based on a multi-disciplinary vision covering the various sports professions, and not just the Data-analyst profession.

5. CONCLUSION

At the end of this reflection, we have taken an exploratory look at the elements obtained from the study, in order to observe what students' current perception and appropriation of the Sport Analysis and Technology Stream might reveal in terms of meaning. Questioning the place accorded to the development of such a newly-launched training program, where it is still difficult to identify recurring modes of use of the emerging technology, has so far proved a challenge.

Firstly, analysis of the interviews revealed an overall positive attitude towards training, supported by several benefits perceived by the students. Students' perceptions of the main uses and benefits inherent in the use of sports technologies fostered a good learning experience. On the other hand, the sports performance and technology industry are an exciting and fast-growing field that is having a profound impact on the world of sport. Although sufficient technology infrastructure is available, it is largely geared towards computer and office learning, and falls far short of providing a platform for advanced algorithms and the processing of large amounts of data in real time to better understand player performance and strategy, or predictive analysis to help teams and coaches make better decisions.

Another remarkable finding of this study is that it is important to point out that the foundation of an innovative training system by the supervisory ministry is today more interesting for what it will generate as a movement accompanying a whole range of actors and stakeholders (sports movement, program initiators, project leaders, students, users, etc.). This means that teacher-trainers need to have an excellent grasp of technologies and their pedagogical integration into teaching.

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ANNEX

The interview Guide

we analyze the factors involved in the adoption and appropriation of technologies as part of the Sport Analysis and Technology study program at the Sport Profession Institute. The participants in this study were first-year students enrolled in the Sport Analysis and Technology program, aged between 19 and 20 years, and engaged in different types of sports activities. To do this, we documented how students enrolled in such a course reconcile these activities with modern

Here, we are generally interested in access to various technologies (computer, Internet, mobile phone, smartphones, etc.) and the different equipment used in the sports field.

INTRODUCTION

- Presentation of the purpose of the interview and reminder of confidentiality.
- Specify that the interview aims to understand students' perceptions, uses, and experiences regarding technologies in their field of study.
- Ask for consent to record or take notes.

STUDENT PROFILE

- Year of enrollment in the program.
- Previous academic and athletic background.
- Level of familiarity with sports technologies (sensors, software, analysis applications, etc.).

1. **Why did you choose this AST program?**

- Relate your education to your childhood dreams, your interests, your passions, and your ambitions. Explain how you imagine your future career. Talk about the profession that attracts you and the projects you aspire to accomplish.
   Have you therefore chosen a field of study that allows you to acquire the necessary knowledge?

2. **What realities or ideas do you have about sports technology?**

- Sports technology is the application of scientific principles, methods, and tools to enhance sports performance and experience. What is your opinion about this idea?
- What realities or ideas do you have about sports technology?
- How were you introduced to these technologies? (courses, tutorials, self-learning, guidance) ?
- In your opinion, what are the advantages and benefits of these technologies?

3. **Does your institution have adequate technological infrastructure?**

- Knowledge, conditions, and patterns of technology use within the institution, including access to computers, internet connectivity, multimedia facilities, applications, software, and other technological tools.

4. **Could you describe the quality of pedagogical guidance and the efforts made to raise awareness about the use of sport-oriented technologies?**
- Pedagogical orientation of teachers, courses, tutorials, practical sessions, etc.

5. **Adoption & integration**
- How do you integrate these technologies into your academic and sports activities?
- In what ways do these tools influence your learning and performance?
- Are there any personal practices you have developed to make better use of these technologies?

Do you utilize your phone or computer to perform data analysis related to sports?

If so, please describe the applications and software you use for this purpose?

CONCLUSION

- Ask the student if they would like to add any comments or personal experiences.
- Thank them for their participation and remind them of the intended use of the collected data.