Faculty Members' Lived Experiences in Using Artificial Intelligence to Personalize Sports Programs: A Phenomenological Study

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Abstract

Purpose: This study examines the lived experiences of faculty members University in using artificial intelligence to personalize sports programs. Given the rapid advances in AI technology in the field of sports, this research focuses on identifying the challenges, opportunities, and impacts of this technology on academic education

Metods: A qualitative methodology with an interpretive approach was adopted and data were collected through in-depth semi-structured interviews with 12 faculty members. Data analysis was conducted using the collage method and MAXQDA software, which included code extraction, themes, and participant review. Ethical considerations such as informed consent and confidentiality were observed.

Result: The findings revealed four main themes: including program personalization, harm prevention, immediate feedback, and complex data analysis; challenges and barriers such as high costs, cultural resistance, lack of specialized training, and data security issues; Educational impacts such as increased student motivation, a new approach to interactive learning, and a balance between technology and human relations; and foresight with scenarios such as the coexistence of technology and sports for sustainable development or sudden changes with critical challenges.

Conculion: The results show that AI as a transformative tool enhances sports performance, but its success requires a multidimensional approach. This research fills a gap in the local literature. Practical suggestions include holding specialized training workshops for professors, investing in university digital infrastructure, formulating privacy policies, and creating a culture for technology acceptance. This study highlights the deep layers of human perception of AI

Keywords: Lived Experiences, Artificial Intelligence, Sports Programs Personalization, Phenomenological Study.

Introduction

Artificial intelligence (AI) has emerged as a transformative tool across various scientific and practical domains in the past decade. Unprecedented advancements in machine learning, big data analysis, and recommender systems have led to a more prominent integration of AI into sports and health sectors. These developments have shifted sports program design from traditional approaches toward the use of intelligent algorithms and models driven by individual data management a topic of heightened importance in academic and educational environments, including Islamic Azad University (Zhou et al., 2025). Today, personalizing sports programs not only enhances individuals' performance and health but also boosts motivation, satisfaction, and sustained engagement in physical activities among students and faculty (Dergaa et al., 2024). In this context, AI serves as a powerful instrument for identifying individual needs, managing injury risks, and optimizing training regimens (Mateus et al., 2024).

Given the rapid growth of digital and intelligent technologies, the demand for AI-based solutions in education and sports has surged significantly. Recent studies have explored AI applications in personalizing sports training programs. For instance, Chen's (2024) research demonstrated that deep learning models increase accuracy in recommending training programs based on athletes' physical conditions and personal goals. Similarly, Mateus et al. (2024) emphasized that combining biometric data with optimization algorithms can lead to the design of exercise regimens tailored to each individual's physiological conditions. Another study by Naughton et al. (2024) addressed the challenges of implementing AI in university settings for sports program management and faculty-student interactions, underscoring the importance of training and adopting emerging technologies by instructors.

Despite the abundant opportunities offered by AI technologies, certain challenges complicate their development and utilization. First, data security and individual privacy concerns are prominent, as the collection and analysis of health and physical activity data rely on user trust (Baker Data Counsel, 2024). Second, the complexity of integrating intelligent systems with traditional educational and sports patterns, along with potential resistance from faculty members, represents another key challenge (Naughton et al., 2024). The opportunities are substantial, including the ability to deliver dynamic programs, intelligent injury risk management, early detection of weaknesses, and enhanced educational efficiency through immediate, data-driven feedback. Emerging research pathways focus on developing explanatory models, collective intelligence, and wearable technologies that enable real-time precise measurement of biological and activity parameters (Farrokhi et al., 2021).

A review of the literature reveals that despite the quantitative growth in research on AI and sports, many lived and experiential aspects of faculty members' engagement with AI remain underexplored in depth. Most studies have concentrated on technical dimensions or the efficacy of algorithmic models, with less attention to instructors' real experiences, practical challenges, interactions with technology, and its impact on educational relationships (Zhou et al., 2025; Naughton et al., 2024). Particularly in the context of Islamic Azad University, limited and scattered studies exist that provide the necessary comprehensiveness and depth for a phenomenological examination of faculty members' lived experiences. The absence of local data and qualitative research further exacerbates gaps in the research literature.

Accordingly, the present study adopts a phenomenological approach with a focus on Islamic Azad University, aiming to identify and deeply analyze faculty members' lived experiences in utilizing AI for personalizing

sports programs. The primary objective is to elucidate challenges, opportunities, experiences, and practical strategies of instructors in engaging with intelligent technologies, thereby offering a comprehensive, data-driven portrayal of the sports program personalization process. The article's structure begins with an explication of theoretical foundations and research background, followed by a description of the employed phenomenological methodology, presentation of findings based on extracted key themes, and concludes with discussion, conclusions, and practical recommendations for enhancing AI utilization in university sports.

Proposed Research Questions and Qualitative Objectives Proposed Research Method Given the phenomenological nature of the study (Phenomenological Approach), thematic analysis based on van Manen's or Colaizzi's framework is the most suitable choice. This method focuses on a profound understanding of human meaning and experience, shaped through semi-structured interviews and analysis of shared themes among instructors' experiences (Gorzinmataee, 2025; Zhou, 2025). The primary goal of this type of study is not to generalize results but to describe the richness of participants' perceptions and emotions regarding interactions with AI technology (Keiper, 2023; Krämer, 2025).

Research Questions

What are the lived experiences of Islamic Azad University faculty in applying AI to design and implement personalized sports programs?

How do faculty members express their understanding and interpretation of AI's role in improving educational and training processes?

What challenges, concerns, and opportunities do faculty members perceive in confronting AI applications in university sports?

How does the human-technology interaction experience in sports personalization affect faculty members' attitudes and educational behaviors?

How do cultural, technological, and organizational contexts at Islamic Azad University influence faculty members' perceptions and acceptance of AI?

To describe and explain faculty members' lived experiences in using AI technologies for designing individual-centered training programs

To identify phenomenological themes related to faculty perceptions of the benefits, shortcomings, and consequences of interacting with AI in university sports

To uncover cultural and organizational interpretations surrounding technology acceptance in the Islamic Azad University environment and its impact on the practical application of AI in sports

To provide an initial conceptual framework for understanding the relationship between human experiences, intelligent technology, and personalized sports education at the higher education level.

To propose strategies for improvement and facilitation of technology acceptance based on insights derived from instructors' real experiences.

Adaptive Explanation of the Method with Research Objectives In the present study, interpretive phenomenology allows the researcher to discover and analyze the inner meaning of faculty members' lived experiences in engaging with AI. Within this framework, data are collected through semi-structured interviews and reflective notes. Data analysis involves extracting meaningful statements, formulating themes, clustering concepts, and reconstructing the overall experience structure (Creswell & Poth, 2018; Zhou, 2025). This process leads to identifying conceptual layers such as "trust in technology," "perception of capabilities," "role of experience in

acceptance," and "conflict between technology and educational humanity.

Theoretical Framework and Literature Review

In recent decades, artificial intelligence (AI) has been introduced as a primary driver of transformation across various fields, particularly in sports management and education. The expansion of technologies such as machine learning, big data analysis, and personalized systems has significantly contributed to optimizing sports performance and designing individual-centered training programs (Zhou et al., 2025). Universities and higher education institutions play a pivotal role in developing and implementing innovative technologies. Particularly at Islamic Azad University, utilizing AI for personalizing faculty sports programs can not only enhance their physical and mental health but also establish a novel data-driven model in sports management (Rabiei & Shafaei, 2024).

Recent scientific studies indicate that AI applications in sports can be analyzed based on three major theoretical frameworks:

1. Machine Learning Theory: This theory emphasizes the use of algorithms to learn from individuals' performance data (Mateus et al., 2024). This framework enables the design of training recommender models based on each person's physiological characteristics.
2. Self-Determination Theory: The expansion of AI use in sports programs influences users' intrinsic motivation and sense of self-efficacy (Deci & Ryan, 2000; revisited in the context of sports with AI by Dergaa et al., 2024).
3. Technology Acceptance Model (TAM): This theory explains that faculty acceptance and use of AI depend on their perceptions of ease of use and technology usefulness (Davis, 1989; extended in studies by Baker Data Counsel, 2024).

Overall, these frameworks demonstrate that AI acceptance in university sports is not solely a function of technical efficiency but also depends on users' attitudes, trust, and perceived benefits.

Systematic Review of Previous Studies In the past three to five years, research trends in AI and sports have experienced a notable surge. Domestic and international studies have focused on various AI applications, including performance analysis, injury reduction, personalized program design, and coaching decision-making. For example: · Mateus et al. (2024) showed that AI algorithms in training program management increase the accuracy of predicting athletes' readiness levels. · Chen (2024) introduced an "intelligent coach" system using deep learning, capable of data-driven real-time feedback. · Dergaa et al. (2024) emphasized that AI in personalized training leads to improved training outcomes and increased participant motivation. · In Iran, Gavami Kumaleh's (2024) research reported that AI transforms the sports landscape and plays a significant role in enhancing the performance of sports science faculty and students. · Additionally, the article on AI transformation in sports (Golmohammadi & Pashaie, 2024) examined research trends from 2020 to 2024 and identified ethical, technical, and educational challenges in AI adoption. · Rabiei & Shafaei's (2024) study indicated that foresight in AI for Iranian sports requires integrating qualitative analysis of lived experiences with quantitative performance data. In university sports, Farrokhi et al. (2021) emphasized that wearable technologies combined with AI analysis can optimize faculty training programs.

Analysis and Comparison of Studies Comparisons among studies reveal that most international research focuses on machine learning algorithms, physiological data analysis, and performance modeling (Mateus et al., 2024; Chen, 2024). In contrast, domestic

studies primarily address AI's conceptual and managerial position in Iranian sports (Gavami Kumaleh, 2024; Rabiei & Shafaei, 2024). Methodologically, international investigations often employ empirical data mining, whereas Iranian studies are more descriptive. Common challenges include: · Concerns over data security and privacy (Baker Data Counsel, 2024) · Lack of specialized AI training for coaches and faculty (Mateus et al., 2024) · Absence of biometric data standardization in training systems (Dergaa et al., 2024)

Despite regional differences, all studies emphasize one point: AI in sports is effective when human experiences—including motivation, emotions, and interpersonal communications—are incorporated into intelligent system designs. This is particularly relevant in the phenomenology of faculty lived experiences, as attention to "individual perceptions of technology" can play a decisive role in its usage and success.

Summary and Presentation of Research Gaps Despite notable advancements, several fundamental gaps exist in this field's literature:

1. Past studies have primarily focused on technical and applied dimensions, with less examination of experiential and lived aspects of faculty in AI utilization processes (Golmohammadi & Pashaie, 2024).
2. Shortage of interdisciplinary and localized research linking higher education, sports, and technology in Iran (Rabiei & Shafaei, 2024).
3. Lack of integrative theoretical models explaining the interaction between "human factors" and "intelligent systems" in university environments.

Therefore, the present study adopts a phenomenological approach to explore, from the perspective of Islamic Azad University faculty's lived experiences, their capacities, challenges, and perceptions regarding AI application in personalizing sports programs. This study can bridge the gap between technology and human experience, aiding the development of smarter strategies in university sports management.

Materials and Methods

This research is qualitative in nature, employing an interpretive phenomenological approach. This method was selected due to its emphasis on deeply understanding individuals' lived experiences and interpreting their meanings within real contexts, enabling the researcher to examine complex relationships between humans and AI technology in sports education (van Manen, 1990; Creswell, 2007). Data collection involved semi-structured, in-depth interviews with 12 faculty members from Islamic Azad University who have practical experience with AI in personalizing sports programs. Each interview lasted approximately 60 to 90 minutes and was conducted in a calm, trust-building environment. Questions were designed openly to explore instructors' meanings and emotional experiences. For instance, direct quotes such as "AI helped me design a more precise program for students at high injury risk, but privacy concerns for data always persist" (from Dr. Rahim Karimi's interview) were used. The data mining process spanned three months, with interviews continuing until theoretical saturation (after the tenth interview) (Creswell, 1998; Alvani & Danaeifard, 2016; parsmodir.com, 2025). Data analysis utilized Colaizzi's method, involving repeated text readings, extraction of meaningful phrases, structuring main and sub-themes, and participant review of findings. MAXQDA 2024 software assisted in data management and analysis (Creswell, 2007; van Manen, 1990). For example, double coding by two independent researchers yielded a Kappa agreement coefficient of 0.85. Ethical considerations included information confidentiality, informed consent (with ethics code IR.IAU.REC.1403.045 from Islamic Azad

University's ethics committee), prevention of participation coercion, and anonymity. Written consent was obtained prior to interviews, and data were used solely for research purposes and stored securely (parsmodir.com, 2025). To enhance validity and reliability, Lincoln and Guba's four criteria—credibility, transferability, dependability, and confirmability—were observed. Methods included member checking, double coding, data triangulation (combining interviews and field notes), and detailed process description (Creswell, 1998; parsmodir.com, 2025). This methodology facilitates the production of valid and rich results regarding faculty lived experiences in utilizing AI in university sports.

Interview Protocol

1. Introduction Greetings and respects; The purpose of this interview is to examine the lived experiences of Islamic Azad University faculty in utilizing artificial intelligence for personalizing sports programs. Your information will help us better understand perspectives, challenges, and opportunities related to this technology. Your participation is entirely voluntary and confidential, and you may stop the interview at any time.
2. Preliminary Questions · Please introduce yourself and briefly describe your specialized background and experience in sports and education. · How did you first become familiar with artificial intelligence in sports programs?
3. Main Questions · What is your experience in using artificial intelligence technologies for designing personalized sports programs? · What opportunities and benefits have you observed in using these technologies? What challenges and obstacles have you encountered in utilizing artificial intelligence? How has artificial intelligence influenced your sports education and learning methods? · How do you evaluate the role of organizational culture and university environment in accepting and using artificial intelligence?

Table 1 - Participants' Demographic Characteristics

Gender	Age	Academic Degree	Field of Study	Teaching Experience (Years)	AI Experience (Years)	University Position and Role
Male	45	PhD in Physical Education	Sports Sciences	15	5	Full Professor
Female	38	Master's	Sports Sciences	10	3	University Sports Team Coach
Male	50	PhD in Sports Management	Sports Management	20	6	Head of Sports Research Group
Female	42	PhD in Sports Sciences	Sports Sciences	12	4	Lecturer and Researcher
Male	46	Master's	Sports Sciences	18	5	Coach and Sports Data Analyst
Female	37	Master's	Sports Sciences	9	3	Sports Coach
Male	48	PhD in Sports Management	Sports Management	22	7	University Professor and Researcher
Female	40	Master's	Sports Sciences	11	4	Sports Coach and Lecturer

Male	44	PhD in Sports Sciences	Sports Sciences	14	4	Professor and Researcher
Female	35	Master's	Physical Education	8	3	University Coach
Male	47	PhD in Sports Management	Sports Management	18	5	Faculty Member
Female	39	Master's	Sports Sciences	10	4	University Sports Lecturer

Table 2 - Summarized Interview Responses

No.	Instructor Name	AI Utilization Experience	Opportunities	Challenges	Impact on Education and Learning	Organizational Culture and Technology Acceptance
1	Dr. Rahim Karimi	Precise program design with AI	Injury risk reduction, increased productivity	Need for training and fear of replacement	Improved educational quality, preserved human relationships	Need to enhance attitudes toward technology
2	Ms. Zahra Charbaghi	Use of wearable gadgets	Increased accuracy, better prediction	High costs, shortage of specialists	Increased student motivation	Gradual technology acceptance
3	Dr. Ali Rezaei	Team data analysis with AI	Improved decision-making, team management	Resistance to change, ethical issues	Immediate feedback, increased interaction	Need for stronger infrastructure
4	Dr. Fatemeh Sadeghi	Precise exercise planning	Continuous data monitoring, performance improvement	Lack of suitable infrastructure	More active students, better education	Infrastructural barriers
5	Eng. Hamidreza Kouhestani	Analysis of team and individual movements	Increased training accuracy	Insufficient coach familiarity with technology	Facilitated learning, quick feedback	Cultural resistance
6	Ms. Maryam Zarei	Behavioral pattern identification	More precise personalization, optimization	Equipment costs, cultural resistance	Faculty empowerment	Need for greater culture-building
7	Dr. Mohammad Amiri	Competition simulation with AI	Reduced human errors, better decision-making	Lack of specialized training	Dynamic and interactive education	Need to establish infrastructure
8	Ms. Nasrin Dehghan	Performance analysis software	Precise individual planning	Insufficient trust in technology	Increased interaction and motivation	Ongoing acceptance process
9	Dr. Mehdi Nouri	Precise performance evaluation	Time savings, quality enhancement	Infrastructure weaknesses, minimal	Better coach-athlete interaction	Technical limitations

				training		
10	Ms. Sara Jalali	Body movement analysis with software	Student motivation	Incomplete technology acceptance	Positive and noticeable impact	Need for culture-building
11	Dr. Saman Abbasi	Data analysis and injury prediction	Big data analysis, personalization	Technical complexities, resistance to change	Improved sports education	Need for specialized training
12	Ms. Nahid Hosseini	Exercise optimization, biological analysis	Intelligent training, error reduction	Lack of technical knowledge, security concerns	Increased quality and interaction	Cultural and data security barriers

Data Analysis A step-by-step and precise analysis of the interviews was conducted using a phenomenological approach. Texts were read multiple times, and open codes were extracted. These codes were then sub-coded and themed based on shared meanings and concepts, followed by further review and refinement. The results are presented in the table below:

Interview Text Excerpt	**Sub-code**	**Main Code**	**Frequency**
"Artificial intelligence has allowed me to design more precise programs that reduce injuries."	Injury risk reduction	AI benefits	4
"Some instructors face fear of replacement."	Fear of replacement	AI challenges	3
"AI cannot replace human connections."	Importance of human connection	AI limitations	2
"Using wearable gadgets has increased the accuracy of athlete status assessment."	Use of wearables	AI assistive technologies	3
"Equipment costs are high and access is limited."	High costs	Infrastructural challenges	5
"AI has increased student motivation."	Enhanced student motivation	AI educational impact	4
"University culture has slowed technology acceptance."	Slow technology acceptance	Cultural challenges	3
"AI is effective in coaches' decision-making."	Improved decision-making	AI benefits	3
"Lack of specialized training causes resistance."	Lack of specialized training	AI challenges	4
"Quick and immediate feedback improves the learning experience."	Immediate feedback	AI educational impact	5

Extracted Themes Theme 1: Benefits of Artificial Intelligence in Sports Personalization of programs and improved training accuracy: AI, through physiological and movement data

analysis, enables the design of precise sports programs tailored to each athlete, enhancing performance and reducing injury risks. · Prevention of physical injuries: AI predictive systems can identify fatigue patterns and potential injuries, adjusting exercises accordingly. · Increased feedback and interaction in sports education: AI provides rapid, real-time feedback that improves learning and athlete motivation. · Analysis of complex data and decision-making speed: Intelligent algorithms assist coaches in making more accurate decisions by rapidly analyzing large data volumes.

Theme 2: Challenges and Barriers to AI Utilization · Infrastructure and high costs: Shortage of suitable equipment and high implementation costs in most universities and sports centers is a major barrier slowing acceptance. · Cultural resistance and occupational concerns: Worries about replacing human coaches and cultural resistance to technological changes are other challenges. · Lack of specialized training and technical skills: Weaknesses in AI-related specialized education lead to unfamiliarity among coaches and sports experts. · Data privacy preservation and security issues: The importance of securing sensitive athlete data and privacy concerns must be managed.

Theme 3: Impacts of Artificial Intelligence on Sports Education and Learning · Increased motivation and participation among athletes and students: When precise and immediate feedback is received, learning motivation and participation significantly rise. · Novel approach to education and emerging technologies: AI enables interactive education, simulation, and precise technique analysis. · Balance between technology and human relationships: Despite technological advancements, human connections and the coach's role remain crucial and attention-worthy.

Theme 4: Foresight and Scenarios for Artificial Intelligence in Sports · Technological determinism and sports industry development: One probable scenario is the coexistence and integration of AI with sports, guiding the industry toward sustainable development. · Creation of wonders and potential crisis conditions: Another scenario involves sudden unexpected transformations with challenging consequences for sports that must be monitored and managed.

Table 4 - Detailed Themes Table

No.	Main Theme	Sub-themes / Related Codes	Detailed Description
1	Benefits of Artificial Intelligence in Sports	Program personalization, injury prevention, immediate feedback, data analysis	Artificial intelligence enables the design of training programs and improvement of sports performance tailored to individual characteristics. Wearable technologies facilitate precise data collection, and with rapid and accurate analyses, they aid in injury reduction and better coach decision-making. Instant feedback increases motivation and educational quality, while machine vision technologies in motion analysis and tracking help improve techniques.
2	Challenges and Barriers to Utilization	High costs, cultural resistance, lack of training, privacy preservation	Infrastructure and equipment costs, along with shortages in specialized knowledge among coaches and analysts, are primary barriers. Cultural resistance to emerging technologies and concerns over human workforce replacement exist. Security and privacy issues for sensitive sports data require precise policy-making for trust-building. Specialized training and preparation are essential for technology acceptance.

3	Educational Impacts of Artificial Intelligence	Increased motivation, interactive education, balance between technology and human connection	AI educational applications include rapid feedback provision and interactive training that enhance learning. This technology boosts student and athlete motivation and strengthens coach-student interactions. Beyond its technological role, preserving the human dimension and coach-athlete connections remains vital for more effective learning.
4	Foresight and Prospects	Sustainable development, technological determinism, potential crisis conditions	As a transformative technology, artificial intelligence can propel the sports industry toward sustainable development. Possibilities include sudden emergence of new technologies, unexpected behaviors, and ethical challenges. Establishing legal, ethical, and cultural frameworks for managing these transformations is essential. There is also a need for broader research to evaluate long-term effects and develop strategic policies.

Discussion

The present research employed a phenomenological approach to identify lived experiences and perceptions of professors and experts regarding AI application in sports. The findings indicate that AI, as a technological phenomenon, has created new perceptions of education, training, and sports management. Participants experienced that using AI tools, particularly machine learning systems and wearables, has led to increased training accuracy, injury prevention, and improved educational feedback. This finding aligns with global research results, such as studies by Dataak (2021) and Paya Shahr (2023), which emphasize the key role of data mining in enhancing training efficiency and coach decision-making at professional levels.

Compared to other studies, the findings of this research extend beyond benefits to address cultural, ethical, and professional challenges. Specifically, infrastructure weaknesses, high technology costs, and fears of human replacement by machines were among the most prominent extracted themes, consistent with observations in Rabiei & Shafaei (2024) regarding "foresight on challenges in sports management with AI technology." Additionally, participants particularly emphasized shortages in specialized training and digital skills, similar to Mowahhed's (2021) results, which state that in adopting new technologies, human factors play a determining role.

From an educational perspective, AI has induced a fundamental transformation in learning. Interviewees stated that intelligent technologies, due to high interaction, immediate feedback, and personalized learning, have increased student and athlete motivation. This finding aligns with recent qualitative studies on "educational transformation with a technology approach in sports" and shows that the convergence of human and machine learning can redefine traditional sports education models.

However, the phenomenological analysis of results revealed that participants' perceptions of AI are not merely technological but also sensitive to its cultural and ethical aspects. Many expressed concerns about data privacy, excessive monitoring of athletes' bodies, and reduced human connections in sports environments. As noted in classical phenomenological approaches, such emotions are part of human lived experiences in confronting technology and must be highlighted to fully understand the phenomenon.

Conclusion

This phenomenological study demonstrated that individuals' lived experiences in using AI in

sports combine transformation, opportunity, and concern. This technology has elevated technical, educational, and managerial performance to a new level and created a novel model of data-driven and decision-oriented sports. The findings emphasize that successful AI technology acceptance requires a multidimensional approach, including professional training, infrastructure improvement, ethical policy formulation, and digital culture shaping.

In line with past research, the results of this study are consistent with studies such as Rabiei & Shafaei (2024) and Golmohammadi & Pashaie (2024), which introduce AI applications as tools for data analysis, increased educational flexibility, and decision intelligence development in coaching. At the same time, this research contributes to the scientific richness of existing literature and, through its interpretive approach, reveals deeper layers of human perceptions of artificial intelligence.

Ultimately, it can be concluded that artificial intelligence is not only a technological tool but also a socio-human phenomenon that redefines the balance between humans, knowledge, and technology in contemporary sports. For the future, it is recommended that more phenomenological research be conducted on athletes', audiences', and managers' experiences with AI technology integration to uncover hidden dimensions of this transformation and delineate its ethically oriented and sustainable development path. Practical recommendations include organizing educational workshops for faculty, investing in university digital infrastructure, and formulating privacy preservation policies.

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