

Teacher training in martial arts and combat sports: proposals for innovative educational models

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Abstract

Martial arts and combat sports have grown significantly in recent decades, both in terms of the number of practitioners and scientific production, establishing themselves as relevant practices for health, athletic performance, and human development. In this scenario, the relevance of teacher training stands out, traditionally linked to the achievement of a black belt or equivalent, but marked by a technical character. Although effective in transmitting motor skills, this model neglects pedagogical and theoretical dimensions that are fundamental for critical and contextualized teaching. There are studies that demonstrate scientifically tested methods for teaching martial arts and combat sports. However, many teachers are unaware of these scientific advances with practical potential. Thus, this study proposes recommendations for teacher training in martial arts and combat sports, such as bringing science closer through theoretical-practical courses, lectures, and refresher programs; valuing master-apprentice guidance; and specializing in specific audiences. Such measures can contribute to professional qualification and the consolidation of more effective, safer teaching practices that are aligned with scientific evidence.

Keywords: Martial arts; Combat sports; Teacher training; Sports pedagogy; Scientific evidence.

Introduction

Martial arts and combat sports have stood out in recent decades due to their significant growth in popularity and number of practitioners worldwide (Da Silva Duarte et al., 2021; Dziubinski, 2024). Their main historical centers of origin are in India, China, Japan, Thailand, and South Korea (Da Silva Duarte & Pavani, 2025), covering a wide variety of disciplines, such as taekwondo, jiu-jitsu, judo, boxing, kickboxing, and muay thai, among others (Andreato & Branco, 2016; Orhan et al., 2019).

Although often used as synonyms (Fett & Fett, 2009), martial arts and combat sports have relevant conceptual distinctions. Martial arts are physical combat practices traditionally associated with broader training processes that encompass the individual's comprehensive education, personal development, moral improvement, as well as spiritual, religious, ethical, and philosophical dimensions (Moenig et al., 2023). Combat sports, on the other hand, are structured around competitive logic, regulated by specific rules and organized by federations, prioritizing performance and formal competition (Dortants et al., 2016).

In this context, the Westernization of Eastern martial arts triggered a movement toward sportification, in which practices originally linked to cultural, philosophical, and self-defense traditions were gradually transformed into combat sports (Moenig et al., 2023). This process involved the standardization of rules, the formalization of competitive regulations, and institutionalization in federations and sports organizations. These changes did not please conservative teachers who saw the loss of the ethical, moral, and philosophical aspects of martial arts (Saeki, 1994).

These physical practices, in their different contexts of application, can serve multiple purposes, such as health promotion, competitive performance improvement, or self-defense (Da Silva Duarte et al., 2021a). When properly planned and adapted, they can be practiced by individuals of different age groups, including children, adolescents, adults, and the elderly (Da Silva Duarte et al., 2023). According to Hammami et al. (2018), martial arts and combat sports can be classified into three main categories:

striking, which includes practices based predominantly on strikes (e.g., taekwondo, boxing, kickboxing, kung fu); grappling, characterized by the predominance of immobilization, projection, and body control techniques (e.g., judo, jiu-jitsu, sumo); and mixed modalities, which combine elements of both, as in mixed martial arts (MMA).

According to Mocarzel et al. (2025), most martial arts and combat sports are predominantly developed standing up during combat, while a smaller number focus mainly on the ground. Mixed martial arts, in turn, can integrate both standing and ground combat in varying ways, depending on how the fight unfolds. Another relevant dimension refers to combat distances, which characterize the spatiality of interactions between opponents. These can be classified as: long distance, typical of disciplines that use implements (such as swords and sticks) to hit the opponent; medium distance, characteristic of striking sports (e.g., boxing, taekwondo, kickboxing); and short distance, predominant in grappling sports (e.g., judo, jiu-jitsu, sumo) (Mocarzel et al., 2025).

Given the growth of martial arts and combat sports worldwide, there has been an increase in the number of practitioners, largely motivated by their proven positive effects on physical and mental health (Borba-Pinheiro et al., 2013; Drid et al., 2021; Linhares et al., 2022; Origua Rios et al., 2018; Ultramari et al., 2020). In addition, these practices have been recognized in scientific literature as viable alternatives for medical recommendation in health promotion programs (Da Silva Duarte et al., 2022; Woodward, 2009). In this context, the present study aims to conduct a critical review of the current training processes for martial arts and combat sports teachers, discussing their limitations and potential, as well as proposing more consistent and scientifically based training models.

Current training of martial arts and combat sports teachers

The training of teachers in martial arts and combat sports, in most disciplines, occurs after achieving the highest initial rank, represented by a black belt or equivalent (Da Silva Duarte et al., 2023). In Muay Thai, for example, this recognition is given through the *prajied* or black *kruang*, while in capoeira it corresponds to the white cord. This training process generally requires three to ten years of practice in martial arts academies linked to federations, involving progressive stages of graduation that include physical tests and technical evaluations for changing belts or cords.

It is a totally technical training focused on excessive technical content and physical conditioning (Antunes, 2009). Glazer (2023) states that just knowing how to perform the movements is not enough to teach with excellence. In this sense, as Rufino (2012) points out, the theoretical dimension of the training of martial arts and combat sports teachers is neglected, resulting in a teaching process based predominantly on the reproduction of techniques and exercises transmitted by the masters themselves, without due encouragement for critical reflection on the pedagogical process. Sales et al (2016) corroborate that martial arts and combat sports have been gaining ground and are still based on practical experience rather than scientific evidence. An exception to this model is observed in boxing, where instructors are required to take specific courses that cover both theoretical and practical components.

The teaching of martial arts and combat sports is often based on traditional methods (Franchini & Del Vecchio, 2012). These methods are passed down through generations and have proven successful at some point, but when subjected to scientific testing, they do not hold up (Franchini & Del Vecchio, 2012). According to these same authors, the teaching of martial arts and combat sports is based on monotonous classes, exhaustive repetitions of movements, a lack of adaptation to students, and the same training for adults applied to children.

Can science help martial arts and combat sports teachers?

According to Bunge (1966), science is rational, systematic, accurate, verifiable, and fallible knowledge. The production of scientific articles on martial arts and combat sports has been significant, especially since the 21st century (Da Silva Duarte et al., 2024; da Silva Duarte & Pavani, 2025; Franchini et al., 2018). Physiological, psychological, pedagogical, nutritional, technical, and tactical aspects, among others, have been investigated (Chapman et al., 1997; Fett & Fett, 2003; Gomes et al., 2002; Niewczas et al., 2024; Rydzik et al., 2021).

Given that one of the main areas of activity for martial arts and combat sports teachers is teaching, classical studies have presented scientifically tested teaching methods. In this regard, Gomes et al. (2002) conducted a randomized clinical trial comparing the retention and transfer of learning of two untrained techniques based on teaching the O-Soto-Gari technique in judo. Thirty-two children, with an average age of nine, participated in the study, divided into two groups: one trained the technique statically, without throwing the opponent, while the other performed the technique in motion, including the throw. Both groups performed 240 repetitions. The results showed that the group that trained in motion and with projection performed significantly better both in retaining O-Soto-Gari and in transferring it to the O-Soto-Guruma and O-Soto-Otoshi techniques.

A recent study of Taekwondo practitioners aged between 18 and 35 analyzed the retention of the bandal-tchagui technique. The volunteers were divided into two groups: (1) self-controlled feedback, in which participants could choose when to receive feedback, and (2) paired feedback, in which participants received feedback at the same times defined by the members of the first group. Both groups performed 48 repetitions during the intervention phase. The results showed that learners who were able to decide when to receive feedback had

greater retention of the bandal-tchagui technique (Januário et al., 2019).

Given this evidence of teaching methods in martial arts and combat sports that have been scientifically tested and show potential for practical application, it is worth asking: how many teachers are actually aware of these studies? And, even more importantly, how many apply them in their teaching practices? Given this scenario, there is a clear need for teacher training guided by scientific evidence, in order to bring academic knowledge closer to the methodologies actually used in teaching.

Training recommendations for martial arts and combat sports teachers

Legally, physical education training is not required to work as a martial arts and combat sports teacher. However, Fett & Fett (2009) recommend that such professionals have training in physical education, due to the technical and pedagogical complexity of these modalities. Currently, responsibility for training these teachers falls largely on federations and confederations, which regulate and qualify professionals to provide teaching services for these sports practices.

In this regard, we propose some recommendations for entities responsible for teaching and regulating martial arts and combat sports:

1) Scientific approach: promote theoretical and practical courses taught by sports scientists and teachers who are experts in the field, covering topics such as sports training, first aid, sports pedagogy, among others. Although this approach may make teacher training more expensive, its benefits include more solid, up-to-date, and scientifically based training.

2) Organization of lectures: federations and confederations should promote events on topics of common interest to teachers, in partnership with sports scientists. This collaboration between researchers and regulatory bodies contributes to the continuous updating of the teaching staff and the alignment of pedagogical practices with scientific evidence.

3) Encouraging master-apprentice guidance: Experienced teachers should be encouraged to pass on concepts and experiences accumulated throughout their careers to students nearing the end of their teacher training, strengthening the transmission of practical knowledge and the integration of theory and practice.

With the increase in scientific production and the growth in the number of researchers specializing in martial arts and combat sports, there has been a rise in the number of international conferences specifically focused on these disciplines (Bağ & Kulasa, 2007; Franchini et al., 2023; Góra & Wąsik, 2014; Gutierrez-garcia et al., 2019; Johnson, 2018). Such events are important opportunities for professionals working in the field to update their knowledge and participate. In addition, another avenue for complementary training is reading specialized works on the pedagogy of martial arts and combat sports.

Conclusion

The training of martial arts and combat sports teachers must be increasingly aligned with scientific research and empirically tested theories in areas such as sports pedagogy, sports training, first aid, among others. In this sense, it is up to federations and confederations to develop strategies to bring professionals closer to science, through initiatives such as lectures, refresher courses, and scientific education programs, prioritizing content with practical application potential. In addition, teacher specialization in specific audiences such as children, adults, the elderly, or high-performance athletes is a valid strategy for improving the quality of teaching and more effectively meeting the demands of the target audience.

Declaration of conflicts of interest

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