

Silat in Transition: Integrating Sports Science, Culture, and Competition into a Unified Coaching Framework

Mohamad Nizam Mohamed Shapie¹, Mohamad Rahizam Abdul Rahim¹, Nagoor Meera Abdullah¹, Hazim Samsudin², Nasru Syawai Nawai², Nurul Ihsan³, Padli³

¹ Faculty of Sports Science and Recreation, Universiti Teknologi MARA (UiTM), Shah Alam, Selangor, Malaysia.

² Malaysian Organization of Authentic Malay Silat Arts (PASSMAL), Shah Alam, Selangor, Malaysia.

³ Fakultas Ilmu Keolahragaan, Universitas Negeri Padang, Sumatera Barat, Indonesia

E-mail: nizam7907@uitm.edu.my

Corresponding author: Mohamad Nizam Mohamed Shapie

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Abstract

This paper examines the transformation of Silat within the Seni Silat Malaysia curriculum through a systematic synthesis of research conducted by Universiti Teknologi MARA (UiTM) from 2013 to 2024. Based on the analysis of 47 peer-reviewed studies, the study traces how Silat has evolved from a traditionally rooted martial art into an interdisciplinary domain integrating sports science, pedagogy, and cultural identity. Using a matrix-based systematic review supported by text-mining techniques, three developmental phases were identified. The first phase (2013–2016) focused on physiological profiling and baseline performance indicators. The second phase (2017–2020) marked a transition toward applied sports science, including training methodologies, coaching strategies, and curriculum integration. The third phase (2021–2024) emphasized interdisciplinary collaboration and international alignment, particularly through the establishment of the AIRBORNE Research Interest Group. Across these phases, five core domains emerged: physical performance, sports-specific training, curriculum integration, recovery strategies, and socio-cultural identity. These domains collectively underpin a unified coaching framework that balances evidence-based practice with cultural authenticity. The emergence of Silat Tempur and its evolution into the Silat EVO competition model demonstrate a clear pathway of research translation into practice. This progression highlights how academic inquiry informs competition design, coaching competencies, and athlete development

systems. The findings position Silat as a dynamic martial art in transition, offering a replicable model for integrating tradition, science, and competitive innovation in global martial arts development.

Keywords: Seni Silat Malaysia; Silat Tempur; sports science; curriculum development; martial arts research

1. Introduction

Silat, as practiced through the *Seni Silat Malaysia* curriculum (Shapie & Elias, 2016; Shapie et al., 2015a), is more than a martial art—it is a living heritage that weaves together physical literacy, tradition, discipline, and national identity. At Universiti Teknologi MARA (UiTM), the Faculty of Sports Science and Recreation (FSR) has actively championed Silat research since 2013, reflecting a sustained effort to understand and elevate Silat through academic inquiry. These studies span diverse areas—from physiological profiling (Shapie et al., 2014) and coaching methods (Shapie et al., 2015b; 2016) to curriculum frameworks (Shapie, 2021) and youth engagement strategies. However, the available body of literature has not yet been systematically consolidated to trace the progression of research and evaluate its cumulative academic contributions.

Recognizing this gap, the UiTM's Martial Arts and Combat Sports Research Network (AIRBORNE) - the Research Interest Group (RIG) was launched in 2021 under UiTM's Research Nexus (RENEU). AIRBORNE brought together scholars from sports science, pedagogy, ethnography, and martial arts to

build an interdisciplinary foundation for Silat research. This study responds to the need for a comprehensive review of Silat-related scholarship rooted strictly in the *Seni Silat Malaysia* curriculum (Shapie et al., 2015a).

The main objectives of this review are to:

1. Compile and analyze Silat-related research conducted by UiTM researchers between 2013 and 2024.
2. Identify core thematic areas and research gaps.
3. Contextualize the findings within the academicization and internationalization of Silat.
4. Reinforce the delimitation of Silat as a structured discipline rooted in the *Seni Silat Malaysia* curriculum.

2. Methods

The review covered journal articles, conference papers, and institutional publications authored or co-authored by UiTM's Faculty of Sports

Science and Recreation between 2013–2024, resulting in 47 eligible studies. Only works aligned with the *Seni Silat Malaysia* curriculum (Nawai et al., 2024) were included, excluding unstandardized forms for consistency.

Each study was organized using a matrix-based framework (Gough, Oliver, & Thomas, 2017), recording its year, theme, methodology, key findings, and affiliated research unit. This approach helped reveal patterns in UiTM's research focus over the decade. A sample of this structure appears in Table 1. To enrich the manual review, we used text-mining tools (Voyant Tools and Microsoft Excel ToolPak) on titles and abstracts to identify frequent keywords and thematic clusters—such as "*Silat Tempur*," "*training*," and "*curriculum*" (Shapie et al., 2019; Pawista et al., 2020; Shapie et al., 2024). The keyword patterns are visualized in Figure 1.

The combination of matrix coding and text-mining formed a transparent and replicable workflow, shown in Figure 2, which strengthened both the qualitative depth and quantitative reliability of the synthesis.

Table 1. Sample Coding Matrix of Silat Research (2013–2024)

Year	Title	Theme	Methodology	Key Finding
2014	Fitness Characteristics of Youth Silat Performers	Physiology	Field Testing	Young exponents show moderate anaerobic capacity with training potential
2015	Sumbangan Kurikulum Seni Silat Malaysia	Curriculum	Document Review	Framework integrated into national education policies
2019	Silat Tempur: Children's Combat Sports	Format Innovation	Descriptive Analysis	<i>Silat Tempur</i> improves engagement in youth martial arts training
2023	Massage vs. Stretching in Recovery	Sports Therapy	Experimental	Kneading massage outperformed stretching in post-exercise HR recovery

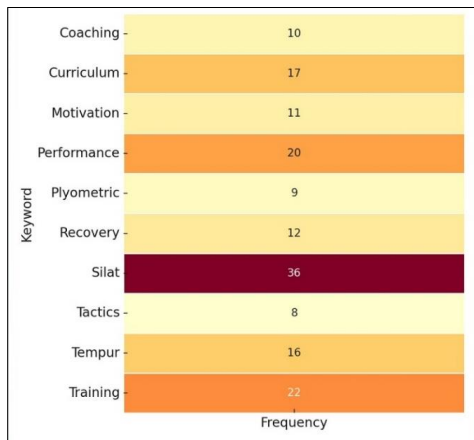


Figure 1. Keyword Frequency Heatmap of UiTM Silat Research

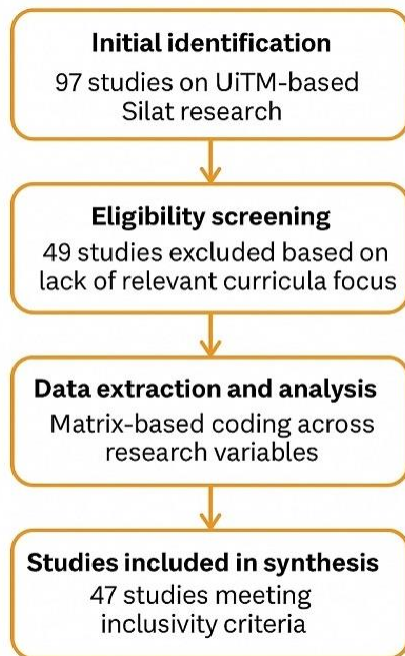


Figure 2. Research Synthesis Workflow

3. Results and Discussion

A total of 47 studies met the inclusion criteria, reflecting a rich and diverse academic engagement with Silat. Chronological analysis revealed three distinct phases of development:

- **2013–2016:** Focused on physiological profiling, fitness characteristics, and baseline performance indicators of Silat athletes. These studies established key benchmarks for aerobic and anaerobic capacity, reaction time, and body composition—data that informed later training strategies.
- **2017–2020:** Marked by a shift toward applied sports science. Research emphasized innovative training methods—such as plyometric protocols (Al-Syurgawi & Shapie, 2019), circuit training, and diverse coaching styles. Curriculum design and pedagogical approaches for schools and universities also emerged, highlighting Silat’s growing presence in formal education.
- **2021–2024:** Characterized by internationalization, competitive-format innovation, and interdisciplinary collaboration. The establishment of AIRBORNE RIG strengthened research cohesion and positioned Silat as both a scientific practice and a cultural asset. The introduction of Silat Tempur, a children’s combat-sport format, marked a significant step in making Silat more accessible to youth and provided a model for its sportification.

Across these phases, five major themes consistently emerged: (1) physical performance metrics, (2) sports-specific training science, (3) curriculum and education integration (Nawai et al., 2024), (4) recovery and rehabilitation strategies (Sani et al., 2023), and (5) the socio-cultural identity of Silat (Shapie, 2021). Together, these themes provided the pillars for a sports science coaching framework that sought to balance scientific precision with cultural authenticity.

Building on this foundation, the rise of Silat Tempur laid the groundwork for the development of **Silat EVO**, an advanced professional competition format designed for elite athletes. Silat EVO adapted the principles of *Tempur* (fight) into a regulated cage-style environment that emphasized sports science, athlete safety, and spectator engagement. Its introduction required coaches to master new competencies—ranging from tactical preparation and injury prevention to performance monitoring and psychological readiness—demonstrating how UiTM

research progressed from descriptive studies to the design of modern performance systems.

The emergence of Silat EVO also underscored the alignment between Silat and broader martial arts innovations, where traditional combat practices are transformed into formats with commercial viability and international appeal. Its planned professional debut in Kuala Lumpur (2025) symbolized not only a sporting milestone but also an academic achievement, as its conceptual foundation drew extensively on UiTM-led research.

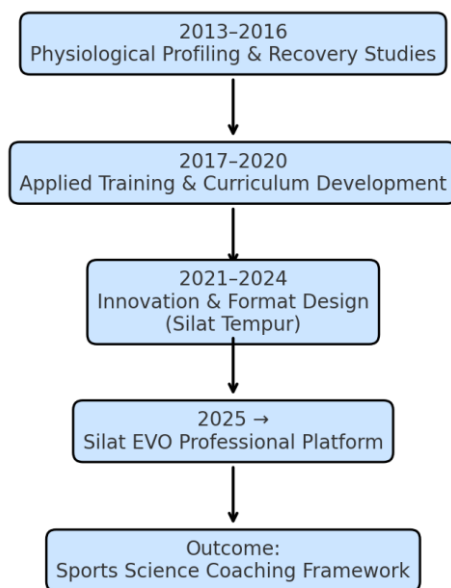


Figure 3. Evolution of Silat Research Towards a Sports Science Coaching Framework

Thus, the course from physiology and training studies to Silat Tempur and finally to Silat EVO illustrated how a decade of UiTM scholarship systematically contributed to the creation of a sports science coaching framework for Silat. This framework integrated evidence from physical profiling, training methodologies, curriculum innovation, recovery strategies, and cultural studies, and culminated in practical applications that serve both grassroots development and professional-level competition. The inclusion of Silat EVO therefore represented the clearest

example of research translation, where academic outputs evolved into a coaching and competition system with global potential. As summarized in Figure 3, this progression demonstrates how sustained academic inquiry can shape both the theoretical and practical futures of Silat.

4. Conclusion

This synthesis confirms that Silat—when studied within the Seni Silat Malaysia curriculum—has matured into an interdisciplinary field of academic inquiry. UiTM researchers have played a central role by blending traditional knowledge with scientific approaches across physiology, training, pedagogy, recovery, and cultural studies. The consolidation of these contributions has resulted in a sports-science coaching framework that balances cultural authenticity with evidence-based practice. Future research should build on this foundation by developing digital coaching tools, curriculum-evaluation mechanisms, and long-term policy studies. With sustained support from platforms such as AIRBORNE, Silat stands as both a safeguarded cultural heritage and a viable contributor to global martial-arts discourse.

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