

OPTIMIZATION OF TACTICAL PREPARATION FOR EPEE FENCERS USING SITUATIONAL COMBAT MODELS

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Abstract This paper focuses on improving competitive performance in advanced epee fencers through situational combat modeling. The author developed and tested a training methodology based on realistic fight scenarios (time pressure, score deficit, and distance limits). Modern video recording and digital performance metrics were integrated to track tactical execution. The results show that situational practice improves tactical decision-making, emotional control, and the accuracy of scoring hits during high-pressure competition moments.

Keywords: epee fencing, tactical preparation, situational modeling, advanced fencers, competitive performance, sports training.

Introduction Modern epee fencing is fast, dynamic, and requires instant decision-making under high pressure. Fencers in advanced training groups (Candidates for Master of Sports and Masters of Sports) already have strong fundamental techniques. However, winning key bouts often depends on how effectively a fencer can adapt to specific tactical situations on the strip.

Standard free fencing practice does not always recreate the psychological stress and tactical limitations of actual tournament finals. Recent sports methodology emphasizes the need for task-oriented scenario training to bridge the gap between practice and competition. Therefore, incorporating structured situational combat models into regular training sessions is essential for developing tactical flexibility and confidence in high-stakes moments.

Research Aim and Tasks. Aim: To improve the competitive effectiveness of qualified epee fencers by integrating situational combat models into their training routine.

Tasks:

- Design a set of tactical combat scenarios tailored for advanced fencers.
- Measure the impact of situational training on hit efficiency and decision-making speed during competitive bouts using digital combat analysis tools.

Methods and Organization. The study involved 16 epee fencers aged 16–20 (KMS and MS rank) from an advanced sports training group. For 8 weeks, fencers spent 25–30 minutes during three weekly sessions practicing three main combat models: "Time Deficit" Model: A fencer starts trailing 13:14 with only 20 seconds remaining. The goal is to set up a successful attack or counter-attack before time expires. "Tactical Restriction" Model: Hits are only counted if executed through specific actions (e.g., direct counter-attacks with time-advantage or attacks into outer target zones). "Close Distance" Model: Bouts are restricted to close and medium distance, prohibiting continuous backward movement. To ensure objective tracking, every tactical scenario was filmed and reviewed using immediate video feedback, allowing athletes to visually evaluate their distance management and reaction timing.

Results and Discussion Before and after the 8-week experiment, performance indicators were analyzed during control tournament bouts. Two main factors were evaluated: attack efficiency and scoring accuracy under fatigue in the final minute of bouts. Following the intervention, the average attack efficiency ratio increased from 0.54 ± 0.03 to 0.68 ± 0.04 ($p < 0.05$). The results demonstrated clear advantages: Better stress management: Fencers showed fewer unforced errors when trailing on the scoreboard. Faster reaction: The success rate of counter-attacks under time pressure increased by 22%. Tactical awareness: Athletes managed distance more intentionally instead of relying on random actions, showing significant improvement in decision-making speed under fatigue.

Conclusion Situational combat modeling combined with visual feedback bridges the gap between daily training and real competition conditions for high-level epee fencers. Practicing under target-driven tactical scenarios improves hit accuracy, stabilizes decision-making under pressure, and is strongly recommended for advanced athletic preparation programs.

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