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Beyond Education, Acquisition, and Practice: The DEAPE Psychological Skills Training Framework

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Abstract

Psychological skills training (PST) is commonly structured as education, acquisition, and practice. The sequence is pedagogically sound, but it leaves two functions implicit: systematic diagnosis of performance-related psychological needs before instruction, and multidimensional evaluation after implementation. This theoretical article proposes the Diagnosis-Education-Acquisition-Practice-Evaluation framework (DEAPE-PST), a five-phase cyclical extension of that sequence. Diagnosis produces an athlete-centred formulation of demands, resources, and contexts; Education builds understanding and autonomous engagement; Acquisition establishes procedural competence; Practice supports representative, progressive transfer; and Evaluation examines implementation, proximal change, performance, welfare, maintenance, and adverse effects before returning to Diagnosis. The framework separates performance diagnosis from clinical diagnosis and specifies referral pathways. DEAPE-PST offers a transparent architecture for designing, delivering, evaluating, and refining psychological skills programmes.

Keywords: Psychological Skills Training, Needs Analysis, Intervention Evaluation, Mental Training, Sport Psychology Practice

Introduction

Athletic performance emerges from the interaction of physical capacity, technical execution, tactical judgement, environmental demands, and psychological functioning. Within this multidimensional context, psychological functioning is particularly important because it influences how athletes use their physical, technical, and tactical capabilities under competitive pressure. Psychological skills training (PST) addresses the last of these domains through systematic instruction and practice in strategies such as goal setting, imagery, self-talk, relaxation, arousal regulation, attentional control, and performance routines (Weinberg & Gould, 2019). Across sports, these strategies are intended to help athletes direct attention, regulate activation, interpret pressure adaptively, sustain confidence, recover from mistakes, and execute decisions consistently. Meta-analytic and review-level findings generally support the practical value of psychological interventions, although the magnitude and robustness of effects vary by intervention, sport, outcome, and study quality (Brown & Fletcher, 2017; Lochbaum et al., 2022; Reinebo et al., 2024).

Despite this general evidence of benefit, determining how PST interventions should be structured, delivered, and evaluated remains an important concern. The evidence base also warrants caution. A review of reviews found that most reviews concluded that PST can enhance performance, yet nearly all were judged critically low in methodological quality (Lange-Smith et al., 2024). Reinebo et al. (2024) similarly reported moderate effects for multimodal PST, mindfulness and acceptance approaches, and imagery, but several effects became non-significant when non-randomised studies or subjective performance outcomes were removed. Primary intervention studies show the same pattern of promise constrained by design. Recent programmes have produced encouraging results while acknowledging limits on inference: a 12-week resilience-building programme increased resilience scores and instrumental support-seeking among National Collegiate Athletic Association (NCAA) Division I athletes within an exploratory single-group analysis (Cooney & Imtiaz, 2026); a 10-week combined yoga and PST programme improved problem-focused coping and reduced hyperarousal in injured youth soccer players within a small case-study design (Lee et al., 2024); and an eight-week programme of imagery-assisted biofeedback improved physiological, cognitive, and serve-accuracy outcomes in a randomised but small volleyball sample (Makaracı & Zorba, 2025). These findings do not invalidate PST. They indicate the need for clearer intervention logic, better matching between athletes and techniques, stronger implementation monitoring, and evaluation strategies capable of explaining what was delivered, for whom, under what conditions, and with what consequences. Consequently, attention must extend beyond the effectiveness of individual psychological techniques to the broader process through which PST interventions are planned, implemented, and reviewed.

An examination of this broader intervention process begins with the instructional structure that commonly guides PST delivery. One of the most recognisable instructional structures in PST is the three-stage sequence described by Weinberg and Gould (2019): Education, Acquisition, and Practice. In Education, athletes learn why psychological skills matter and how psychological processes affect performance. In Acquisition, they learn techniques and strategies appropriate to targeted psychological skills. In Practice, they rehearse these techniques systematically until they can integrate them into performance settings. The sequence has enduring pedagogical merit because it moves from understanding to competence and then to application. Figure 1 represents Weinberg and Gould's (2019) three-stage Psychological Skills Training sequence.

Figure 1. Three-Stage Psychological Skills Training Sequence Proposed by Weinberg and Gould (2019)

Although the sequence provides a clear instructional pathway, a comprehensive intervention process also needs to clarify what occurs before Education begins and after Practice has been completed. The three-stage sequence is, however, primarily an instructional progression. As commonly represented, it does not make assessment before Education or evaluation after Practice explicit phases of the intervention cycle. This is not to claim that assessment and

evaluation are absent from applied sport psychology. Performance profiling, psychometric assessment, ongoing monitoring, case formulation, and programme evaluation are established practices (Beckmann & Kellmann, 2003; Butler & Hardy, 1992; Weston et al., 2013). The conceptual issue is that these functions sit outside the visible architecture of the familiar three-stage sequence. When they remain implicit, programmes may begin with predetermined content, provide similar packages to athletes with different demands, or judge success mainly from satisfaction and pre-post scores without examining fidelity, transfer, maintenance, or unintended effects.

The practical importance of this conceptual gap becomes more apparent when PST is used to address specific and recurring performance-related difficulties. This limitation becomes especially consequential when athletes present with identifiable performance difficulties, including severe competitive anxiety, attentional disruption, loss of confidence, emotional dysregulation, avoidance, or recurring breakdown under pressure. A generic programme may teach useful techniques while failing to address the functional conditions maintaining the problem. It may also overlook contextual influences such as injury, developmental stage, coaching climate, family pressure, cultural expectations, travel, selection uncertainty, or mental health concerns. Likewise, an intervention may appear ineffective because it was poorly delivered, insufficiently practised, unacceptable to athletes, or evaluated with measures unrelated to its intended mechanism.

Collectively, these theoretical, methodological, and practical concerns establish the need for an expanded framework that retains the instructional strengths of PST while explicitly incorporating needs assessment and systematic evaluation. This article proposes the Diagnosis-Education-Acquisition-Practice-Evaluation Psychological Skills Training Framework (DEAPE-PST). DEAPE-PST retains the pedagogical core of Education, Acquisition, and Practice while adding Diagnosis as an explicit entry phase and Evaluation as an explicit closing and feedback phase. The framework makes three contributions. First, it shifts PST from technique-first delivery towards needs-responsive intervention. Second, it connects instruction to implementation science by distinguishing delivery, receipt, enactment, and outcomes. Third, it transforms the sequence into a cyclical system in which evaluation findings inform renewed diagnosis and adaptation.

The term diagnosis is used deliberately but narrowly. Within DEAPE-PST, it refers to performance-related psychological assessment, needs analysis, and working formulation. It does not authorise coaches or unqualified practitioners to diagnose mental disorders. Clinical diagnosis, treatment, and risk management remain within the competence of appropriately qualified health professionals. This boundary is especially important because performance concerns and mental health difficulties can overlap, and athlete welfare must not be subordinated to performance goals (Reardon et al., 2019; Schinke et al., 2018).

Conceptual Development Approach

This paper uses a theory-adaptation approach to conceptual development. Theory adaptation retains a useful explanatory structure while revising its domain, assumptions, relationships, or boundary conditions to address a recognised problem (Jaakkola, 2020). DEAPE-PST therefore does not replace the Education-Acquisition-Practice sequence. It embeds that sequence within a broader intervention cycle that explicitly specifies what should occur

before Education, what should be examined after Practice, and how information should circulate across phases.

The conceptual synthesis drew on five bodies of scholarship: foundational PST and mental-training frameworks; sport psychological assessment and performance profiling; research on specific psychological techniques; programme and implementation evaluation; and athlete mental health and ethical practice. The purpose was not to estimate a pooled intervention effect or to claim exhaustive coverage of all PST publications. Consistent with integrative and conceptual review principles, the literature was used to identify constructs, expose an architectural gap, specify relationships, define boundaries, and generate testable propositions (Snyder, 2019; Whetten, 1989).

Psychological Skills Training: Strengths and Unresolved Design Questions

The Enduring Value of Education, Acquisition, and Practice

The three-stage PST sequence captures an essential learning principle: athletes are more likely to use psychological techniques appropriately when they understand their purpose, acquire them with guidance, and practise them systematically. Education corrects the misconception that psychological abilities are fixed traits or emergency remedies used only when performance deteriorates. Acquisition converts abstract ideas into procedures, such as constructing a process goal, using a centring breath, developing an imagery script, or selecting an instructional cue word. Practice supports fluency and transfer by embedding techniques into increasingly realistic tasks.

This progression is compatible with evidence across individual strategies. Goal setting can improve sport, exercise, and motor performance, although effects depend on goal properties and context (Kyllo & Landers, 1995; Williamson et al., 2024). Goal characteristics also interact with other psychological skills rather than operating in isolation. Among 800 Japanese collegiate athletes, goal commitment was positively associated with skill, strategy, goal, and mastery imagery ability, whereas goal difficulty was negatively associated with imagery generation, and these patterns varied across competitive levels (Lee et al., 2025). Self-talk interventions show positive effects, with training and task-strategy matching influencing results (Hatzigeorgiadis et al., 2011). Imagery practice benefits from functional equivalence and task representativeness, as formalised in the PETTLEP model (Holmes & Collins, 2001); PETTLEP-based protocols continue to produce measurable physiological, cognitive, and sport-specific gains when delivered systematically over several weeks (Makaracı & Zorba, 2025). Mindfulness and acceptance approaches may improve performance-relevant processes and welfare-relevant outcomes, but effects vary and should be interpreted cautiously (Bühlmayer et al., 2017; Noetel et al., 2019; Norouzi & Milani, 2025). How instruction is designed matters independently of which technique is taught: the attentional and motivational features of instruction and feedback, including an external focus of attention, enhanced expectancies, and autonomy support, shape both motor learning and engagement (Simpson et al., 2025). These findings reinforce an important point. Techniques are neither interchangeable nor universally beneficial. Their effects depend partly on what the athlete needs, how the technique is taught, and whether it is practised under conditions that resemble its intended use.

The Problem of Technique-First Programming

PST packages are often organised around familiar techniques rather than a functional analysis of performance requirements. An athlete may be assigned relaxation because anxiety is reported, even though reduced activation may impair performance for an athlete who functions optimally at high intensity. Another athlete may receive positive self-talk despite a primary difficulty involving visual search, timing, or tactical attention. A third may learn imagery without adequate imagery ability, realistic scripts, or connection to a performance routine. Birrer and Morgan (2010) addressed this problem in high-intensity sport by distinguishing sport demands, psychological skills, and techniques. Their distinction supports the principle that intervention content should be derived from demands and target skills rather than selected because a technique is popular.

Evidence on the situational specificity of psychological states strengthens this argument. In interviews with 20 university soccer players, S. Park and Lee (2026) found that confidence had distinct antecedents before, during, and after competition: preparation and anticipatory strategies before the match, performance feedback and team interactions during play, and reflection and self-appraisal afterwards. An undifferentiated confidence intervention may therefore target the wrong phase of the competitive cycle. Sacklin et al. (2026) illustrate the alternative sequence. Professional ice hockey players first identified the psychobiosocial states and core action components that discriminated their optimal from their suboptimal performances, and only then completed an individualised self-regulation intervention that they subsequently rated as useful for increasing awareness of functional and dysfunctional states across four competitive games. Assessment preceded content selection, and content was derived from the athlete's own performance history.

Individualisation also reflects established sport psychology assessment principles. Beckmann and Kellmann (2003) argued that assessment instruments should be reliable and valid for the population, useful to athletes, honestly completed, and embedded within communication among athletes, coaches, and practitioners. Performance profiling provides a collaborative method for identifying athlete-defined qualities, perceived discrepancies, and development priorities (Butler & Hardy, 1992; Weston et al., 2013). Measures such as the Athletic Coping Skills Inventory-28, the Test of Performance Strategies, and the Ottawa Mental Skills Assessment Tool can contribute structured information, although scores should not substitute for contextual interpretation (Durand-Bush et al., 2001; Smith et al., 1995; Thomas et al., 1999). Nor should a common profile be assumed within an apparently homogeneous group. Among 44 elite alpine skiers, coping strategy usage differed by sex, competitive level, and nationality, and interviews surfaced strategies not anticipated by existing taxonomies (Cundale et al., 2024). Content selected for the group mean would misfit a substantial proportion of its members.

The Evaluation Problem

Intervention success is frequently reduced to whether an average pre-post score changed or whether athletes reported liking the programme. These indicators are useful but insufficient. A null result may reflect an ineffective theory, an unsuitable technique, low attendance, poor facilitator competence, weak athlete engagement, inadequate practice dosage, insensitive measurement, or contamination of the comparison condition. Conversely, a positive post-test

may not demonstrate transfer to competition, maintenance over time, or meaningful performance change.

Implementation research distinguishes intervention outcomes from implementation outcomes. Acceptability, appropriateness, feasibility, fidelity, adoption, cost, penetration, and sustainability describe whether a programme can be delivered and embedded, whereas psychological and performance measures describe its effects (Proctor et al., 2011). Fidelity further involves adherence, exposure or dosage, delivery quality, participant responsiveness, and programme differentiation (Carroll et al., 2007). Process evaluation examines implementation, mechanisms of impact, and context, helping researchers determine why outcomes occurred (Moore et al., 2015). These distinctions are directly relevant to PST yet rarely visible in a simple education-acquisition-practice representation.

Recent intervention studies show both the value and the limits of current evaluation practice. Norouzi and Milani (2025) assessed sleep quality, perceived stress, and depressive symptoms at baseline, post-intervention, and four weeks later, so that at least short-term maintenance could be examined rather than inferred. Makaracı and Zorba (2025) aligned outcomes with the presumed mechanism by measuring physiological indices, interference control, and serve accuracy alongside one another, which permits a mechanistic rather than merely descriptive reading of the result. By contrast, Cooney and Imtiaz (2026) reported resilience gains from an exploratory single-group design in which the observed change cannot be separated from maturation, season effects, or repeated testing. None of these choices reflects a lack of diligence. They reflect the fact that evaluation quality depends on whether the intervention architecture makes explicit what should be measured, when, and against which alternative explanation.

Evaluation also has a welfare dimension that outcome-focused designs can miss. Bacon and Donohue (2025) found that self-criticism and criticism of teammates each predicted greater psychiatric symptom severity among 131 NCAA athletes, with self-criticism more strongly associated with symptoms among athletes of the global majority than among White athletes. Interventions that deliberately engage athletes' self-evaluative processes, as many PST techniques do, therefore carry a plausible route to harm as well as to benefit. Adverse effects should be assessed rather than assumed absent.

The DEAPE Psychological Skills Training Framework

DEAPE-PST comprises five connected phases: Diagnosis, Education, Acquisition, Practice, and Evaluation. Table 1 summarises their purposes, guiding questions, principal activities, and outputs. Figure 2 depicts the proposed DEAPE Psychological Skills Training framework.

Table 1
Core Architecture of the DEAPE-PST Framework

Phase	Central question	Core activities	Principal output
Diagnosis	What does this athlete or group need, in this sport and context?	Demand analysis, interview, observation, profiling, psychometrics, contextual and welfare assessment, referral screening	Working formulation and prioritised needs profile
Education	What must athletes understand and accept before purposeful skill learning?	Psychoeducation, rationale, expectation setting, shared goal construction, ethical and consent discussion	Informed engagement and learning readiness
Acquisition	Which psychological skills and techniques fit the formulation, and can athletes perform them?	Modelling, guided rehearsal, feedback, adaptation, prerequisite-ability and competence checks	Initial procedural competence and individualised skill plan
Practice	Can athletes apply and regulate the skills under progressively representative demands?	Distributed rehearsal, integration with sport drills, calibrated pressure simulation, self-monitoring and structured reflection	Fluent, flexible, and context-appropriate skill use
Evaluation	Was the programme delivered, received, enacted, effective, safe, and sustainable?	Formative, process, outcome, maintenance, and adverse-effect evaluation	Evidence-informed decision to maintain, modify, intensify, refer, or discontinue

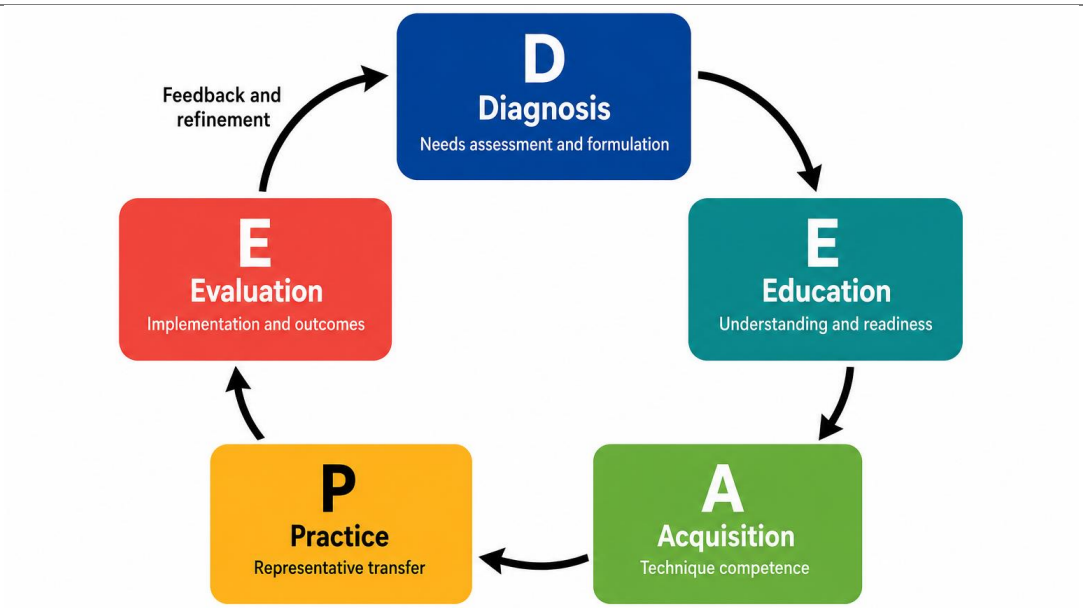

Figure 2 The Proposed DEAPE Psychological Skills Training Framework

Diagnosis

Diagnosis establishes the intervention's point of departure. Its purpose is not to attach a fixed label to the athlete, but to develop a working explanation of the performance concern and to identify modifiable targets. A DEAPE diagnosis integrates at least four information domains: sport demands, athlete resources and difficulties, performance contexts, and developmental or welfare considerations.

Sport-demand analysis asks what the event requires psychologically. Relevant demands may include sustained vigilance, rapid attentional switching, emotional control after officiating decisions, tolerance of physical discomfort, tactical flexibility, accurate execution under time pressure, or repeated recovery between performances. The same technique can serve different functions across sports. Breathing may reduce excess arousal in precision sport, structure recovery between exchanges in combat sport, or anchor attention during an endurance event.

Athlete assessment combines multiple sources rather than relying on a single questionnaire. Interviews explore the athlete's account of strong and poor performances, triggers, coping responses, beliefs, goals, and previous attempts. Observation identifies behaviour in training and competition. Performance profiles promote athlete ownership by comparing perceived current and desired functioning. Psychometric measures provide structured indicators when appropriate, provided their validity, language, norms, permissions, and interpretive limits are respected. Coach and parent perspectives may add context, particularly for young athletes, but should not displace the athlete's voice.

Multi-domain assessment is warranted because the determinants of athletes' stress responses are distributed across personal and social resources rather than concentrated in a single trait. In a mixed-methods study of 604 student-athletes, Kara and Ceyhan (2025) found that problem-focused coping, mindfulness, and perceived social support each mediated the relationship between perceived stress and psychological resilience, whereas avoidance-oriented coping did not. An assessment restricted to a single resilience score would return a number without indicating which of these mechanisms was available to the athlete, and therefore without indicating where intervention should begin.

Diagnosis culminates in a concise formulation linking situation, psychological response, behaviour, and consequence. For example, an athlete may interpret a stronger opponent as evidence of inevitable defeat, experience escalating somatic arousal, narrow attention towards threat cues, hesitate tactically, and then interpret the resulting poor start as confirmation of low ability. This formulation points towards confidence evidence, attentional cues, arousal regulation, and simulated-start practice. It is more actionable than the general statement that the athlete needs mental toughness.

The phase should also identify factors that PST alone cannot appropriately address. Persistent low mood, panic, trauma symptoms, disordered eating, self-harm risk, substance misuse, abuse, or severe functional impairment requires qualified assessment and an established referral pathway. Performance support can sometimes continue alongside clinical care, but only with appropriate consent, coordination, and role clarity (Reardon et al., 2019; Schinke et al., 2018).

Education

Education transforms diagnostic information into shared understanding and purposeful engagement. Athletes learn how thoughts, emotions, attention, physiological activation, behaviour, and context interact with performance. The explanation should connect directly to their formulation instead of presenting generic sport psychology facts. When athletes recognise their own experiences in the rationale, PST becomes relevant rather than remedial or imposed.

This phase also establishes realistic expectations. Psychological techniques are skills, not instant fixes. Early discomfort, inconsistent effects, or the need to modify a strategy does not necessarily indicate failure. Athletes should understand what the programme targets, what it does not target, how progress is monitored, how information is handled, and when referral may be recommended. Such transparency supports autonomy and informed participation. Self-determination theory suggests that autonomy, competence, and relatedness contribute to higher-quality motivation and sustained engagement (Deci & Ryan, 2000). These perceptions are modifiable through how delivery is structured. Tilga et al. (2025) found that a single-day autonomy-supportive training programme for physical education teachers increased students' perceptions of cognitive and procedural autonomy support and their satisfaction of autonomy and competence needs, while reducing negative conditional regard and intimidation. The effects were partial rather than uniform across dimensions, which is itself instructive: readiness is built through the manner of delivery, and it is built unevenly.

Education has both a content function and a readiness function. Content includes knowledge of psychological processes and techniques. Readiness includes perceived relevance, confidence in learning, willingness to practise, and trust in the facilitator. The phase is complete not simply when information has been presented, but when the athlete can explain the target problem, the proposed mechanism, and the role of practice in their own words.

Acquisition

Acquisition converts conceptual understanding into procedural skill. Technique selection follows the diagnostic formulation: a target psychological skill is specified first, followed by one or more candidate techniques. The distinction prevents a common conceptual error in which techniques and skills are treated as equivalent. For example, emotional regulation is a psychological skill, whereas controlled breathing, reappraisal, acceptance, cue words, and routines are possible techniques for developing or expressing it.

Instruction involves modelling, guided rehearsal, feedback, error correction, and individual adaptation, and its attentional and motivational design is a substantive rather than cosmetic choice (Simpson et al., 2025). Goal setting requires more than completing a worksheet; athletes must distinguish outcome, performance, and process goals and link them to controllable behaviours. Self-talk requires credible, brief, functionally matched cues rather than indiscriminately positive statements. Imagery requires attention to physical position, environment, task, timing, learning stage, emotion, and perspective (Holmes & Collins, 2001). Relaxation must be differentiated from regulation: some athletes need down-regulation, whereas others need energising strategies. Mindfulness and acceptance techniques should not be presented as thought-control methods, because their purpose is to change the

athlete's relationship with internal experiences rather than to eliminate them (Gardner & Moore, 2004; Noetel et al., 2019).

Prerequisite ability should be checked rather than assumed. Imagery ability varies systematically with competitive level and interacts with goal characteristics, such that athletes working towards highly difficult goals may generate imagery less readily than those with strong goal commitment (Lee et al., 2025). An imagery protocol may therefore need to begin with ability development rather than with script rehearsal, and the same logic applies to attentional and self-regulatory techniques that presuppose a level of interoceptive or metacognitive awareness the athlete has not yet developed.

Competence checks distinguish exposure from acquisition. Athletes should demonstrate the technique, explain when it is appropriate, recognise when it is not working, and identify adaptations. Brief behavioural tests, teach-back explanations, imagery-quality ratings, routine checklists, or simulated decision tasks can assess initial competence. The product of Acquisition is an individualised psychological skill plan specifying cues, contexts, frequency, and criteria for progression.

Practice

Practice develops fluency, flexibility, and transfer. Initial rehearsal occurs in controlled conditions that reduce extraneous demands. The technique is then integrated into technical and tactical training before being tested under representative pressure. This progression mirrors the increasing complexity through which physical skills are learned and avoids expecting a newly acquired psychological technique to function automatically in competition.

Representative practice should reproduce the psychological information and constraints that make the skill necessary, and which constraints matter is an empirical question rather than a matter of intuition. Analysing a large dataset of professional soccer shootouts, Van Hemert and Van der Kamp (2025) found that tournament level, kick round, and kick valence predicted kick outcome, although the full model had limited predictive power. Pressure, on this evidence, is generated by identifiable situational features that can in principle be simulated, while remaining only partly determined by them. Vulnerability to those features is also unevenly distributed: in elite recurve archery, performance declined on the decisive arrow of each set, and less experienced archers were more affected than more experienced ones (Zhao, 2024). Pressure practice should therefore be calibrated to the athlete rather than applied at a fixed intensity, and should be challenging without being punitive. Its purpose is to create learning opportunities and reliable cues, not to prove that an athlete lacks toughness.

Concretely, an attentional reset can be practised immediately after an error, a disputed decision, or a conceded point. A pre-performance routine can be used with time limits, spectators, ranking consequences, and delayed starts. Imagery can incorporate realistic pacing, bodily sensations, uncertainty, and coping with disruption. Technology may extend representative design, but claims should remain proportionate to the evidence. Caso (2025) observed that although virtual reality is widely promoted as a means of developing perceptual skills such as visual exploratory activity in soccer, the literature testing that claim remains

limited, and the conditions under which simulated environments transfer to competitive performance are not yet established.

Distributed independent practice is also necessary. Athletes record when a technique was used, its perceived usefulness, barriers, and modifications. Coaches reinforce agreed cue language and provide opportunities for application without becoming substitute therapists. Practice dosage should be sufficient to support learning but responsive to age, training load, fatigue, and competition schedules. For young athletes, short and varied activities may be more appropriate than extended classroom sessions.

The phase is not defined by repetition alone. Effective practice includes feedback, reflection, contextual variation, and increasing self-regulation. Structured reflection supports this transition: after using think aloud across training sessions and reviewing their own audio, professional academy goalkeepers reported increased self-monitoring and enhanced reflective practice consistent with movement from facilitator-led execution towards independent, self-regulated learning (McGreary et al., 2024). Psychological skills are considered transferred when they are enacted appropriately in relevant performance contexts, not merely recalled on a worksheet.

Evaluation

Evaluation determines whether the intervention was implemented as intended, produced its hypothesised mechanisms, improved meaningful outcomes, protected athlete welfare, and remained useful over time. DEAPE-PST treats evaluation as multidimensional and continuous. Formative evaluation occurs during every phase; summative and maintenance evaluation occur after a defined implementation period.

Five evaluation layers are proposed. First, implementation evaluation examines attendance, dosage, adherence, delivery quality, athlete responsiveness, and contamination or differentiation. Second, learning evaluation examines understanding and procedural competence. Third, proximal psychological evaluation examines targeted changes such as attentional control, confidence, emotional regulation, imagery use, or coping. Fourth, performance-related evaluation examines behaviour and outcomes using sport-relevant indicators. Fifth, maintenance and welfare evaluation examines continued use, transfer, well-being, adverse effects, and need for further support.

Outcome selection must follow the intervention's theory of change. A programme targeting refocusing after errors should measure recovery behaviour and subsequent performance sequences, not only general confidence. A confidence intervention may examine mastery evidence, decisiveness, and task execution in addition to self-report, and should specify which competitive phase it targets given that antecedents of confidence differ before, during, and after competition (S. Park & Lee, 2026). Objective performance metrics are desirable but should be interpreted alongside opponent quality, role, injury, tactics, and normal performance variability. Qualitative feedback helps explain how athletes experienced the intervention and which components they actually used.

Evaluation ends with a decision rather than a score. Options include maintaining the programme, modifying content or dosage, returning to Acquisition, increasing representative

Practice, revising the original formulation, providing booster sessions, referring for specialist support, or discontinuing an unsuitable strategy. This decision returns the framework to Diagnosis and makes DEAPE-PST cyclical.

How DEAPE-PST Extends the Established PST Sequence

DEAPE-PST is an extension in architecture rather than a rejection of established PST. Education, Acquisition, and Practice remain the pedagogical engine. Diagnosis improves the fit of that engine to the athlete and context; Evaluation determines whether it functioned as intended and what should happen next. Table 2 sets out the comparison.

Table 2
Conceptual Comparison of the Established PST Sequence and DEAPE-PST

Dimension	**Education-Acquisition-Practice sequence**	**DEAPE-PST extension**
Entry point	Begins with understanding psychological skills	Begins with athlete-centred needs and demand formulation
Content selection	Psychological techniques introduced within a PST programme	Techniques explicitly selected from diagnosed targets, context, preferences, and risk considerations
Learning progression	Understanding to acquisition to repeated application	Retains the progression and adds readiness, competence checks, and representative-transfer criteria
Evidence of implementation	May be monitored in applied practice but is not an explicit stage	Fidelity, dosage, delivery quality, receipt, enactment, and context are specified
Evidence of benefit	Improvement may be examined after practice	Process, mechanism, outcome, maintenance, welfare, and adverse effects are differentiated
Structure	Commonly represented as sequential	Explicitly cyclical, with evaluation feeding renewed diagnosis
Ethical boundary	Dependent on practitioner competence and context	Performance diagnosis is separated explicitly from clinical diagnosis and linked to referral pathways

The additional phases also alter the meaning of the original stages. Education becomes formulation-linked rather than generic. Acquisition becomes a test of procedural competence rather than exposure to techniques. Practice becomes representative enactment rather than repetition. Evaluation becomes an intervention decision system rather than a final satisfaction survey. The framework therefore adds two phases while strengthening the conceptual requirements of the original three.

Application Across Athlete Populations and Sports

DEAPE-PST is intentionally content-neutral: it organises the intervention process but does not prescribe a universal set of techniques. This permits application across individual, team, precision, endurance, aesthetic, and combat sports. The Diagnosis phase identifies sport-

specific demands and population-specific considerations, while the remaining phases maintain a common logic.

In combat sports, for example, diagnosis may identify rapid decision-making, threat interpretation, arousal regulation, attentional recovery after penalties, emotional control, and between-round reset as priorities. Acquisition may include tactical cue words, breathing, imagery, self-talk, and short routines. Practice can integrate these skills into sparring with manipulated scores, time, opponent styles, officiating uncertainty, and fatigue. Evaluation can combine psychological measures with video-coded decision behaviour, coach ratings, bout indicators, fidelity, and athlete accounts. Taekwondo-specific research supports the relevance of structured psychological skill factors while also demonstrating the need to distinguish sport-specific demands from generic technique packages (Lim & O'Sullivan, 2016; Nam et al., 2022). Rehabilitation contexts make the same point sharply. In interviews with 30 elite taekwondo athletes recovering from knee injuries without surgery, K.-J. Park (2026) found that fear operated both as a barrier and as a protective motivator, that confidence fluctuated across the rehabilitation period, and that return-to-sport risk was appraised in nuanced and individual ways. That configuration calls for formulation and staged exposure rather than a generic confidence package.

Young athletes require additional safeguards and developmental adaptation. Diagnosis should consider cognitive maturity, language, identity development, school demands, parental expectations, and safeguarding. Education should use concrete examples and avoid pathologising normal competition emotions. Acquisition should privilege brief, observable procedures. Practice should be enjoyable, varied, and integrated with sport rather than resembling clinical treatment. Evaluation should include well-being and athlete voice, not only coach-rated performance. Interventions designed for this group can improve welfare-relevant outcomes: an eight-week mindfulness-based stress reduction programme improved sleep quality and reduced perceived stress and depressive symptoms in adolescent basketball players, with gains retained at four-week follow-up (Norouzi & Milani, 2025). Delivery features matter as much as content, and autonomy-supportive instruction is itself learnable by the adults who deliver it (Tilga et al., 2025). Psychological characteristics develop over time and interact with experience, opportunity, and environment; consequently, age-appropriate mental training should support development rather than accelerate adult performance demands indiscriminately (MacNamara et al., 2010a, 2010b).

At group level, Diagnosis may identify shared needs while preserving individual profiles. A team programme can deliver common educational content and basic techniques, followed by individual adaptation. Evaluation can examine both aggregate trends and individual response trajectories. This avoids assuming that an average improvement represents every athlete, or that nonresponse signifies poor motivation. The distributed nature of protective resources among student-athletes, where coping style, mindfulness, and perceived social support carry different mediating weight (Kara & Ceyhan, 2025), makes such disaggregation necessary rather than optional.

Implications for Research and Practice

For researchers, DEAPE-PST provides a reporting architecture. Studies should specify how needs were established, what athletes learned, how competence was checked, how practice

represented competition, what dosage occurred, and how implementation and outcomes were evaluated. This level of description supports replication and helps future reviews compare interventions more meaningfully, addressing directly the methodological weaknesses identified in review-level appraisals of the PST literature (Lange-Smith et al., 2024).

For practitioners, the framework discourages premature technique selection. The first question becomes what function the difficulty serves in this performance system, rather than which mental skill should be taught this week. It also makes nonresponse informative. If an athlete does not improve, the practitioner can examine formulation accuracy, educational readiness, acquisition competence, practice representativeness, dosage, contextual barriers, and measurement alignment before concluding that PST is ineffective or that the athlete lacks commitment.

For coaches and sport organisations, DEAPE-PST clarifies roles. Coaches can reinforce agreed skills and create practice opportunities, while qualified practitioners lead complex assessment and manage clinical boundaries. Organisations should provide protected time, confidentiality procedures, referral pathways, and evaluation systems that do not penalise honest disclosure. The framework may also support module and curriculum development, because each session can be mapped to a phase, an intended mechanism, a progression criterion, and an evaluation indicator.

Limitations

DEAPE-PST is presently a conceptual framework rather than an empirically validated intervention. Adding phases increases comprehensiveness but may also increase time, cost, data burden, and competence requirements. In resource-limited settings, abbreviated diagnosis and evaluation may be necessary. Future research must determine the minimum viable activities that preserve framework integrity.

The framework is described sequentially for clarity, although applied work is often recursive. New information can emerge during Education or Practice, requiring immediate return to Diagnosis. Evaluation is not confined to the end, and formative feedback should operate throughout. Furthermore, the acronym may imply that each phase has equal duration; in practice, duration depends on complexity, athlete readiness, competition schedules, and risk.

Diagnosis may also encourage over-assessment or false precision if practitioners rely excessively on questionnaires. Assessment data are context-dependent and can be influenced by trust, selection concerns, fatigue, language, and response bias. Multimethod formulation and collaborative interpretation are therefore essential.

Finally, two limitations concern the evidence base assembled here. The literature was selected purposively to expose an architectural gap and to generate propositions, not systematically, so the empirical illustrations should be read as demonstrations of a design problem rather than as a representative sample of the field. And DEAPE-PST does not specify which psychological theory or technique is universally superior. Its contribution is procedural fit and accountability; technique-specific mechanisms still require appropriate theoretical justification.

Conclusion

The Education-Acquisition-Practice sequence remains a valuable foundation for psychological skills training. Its instructional clarity explains how athletes come to understand, learn, and apply psychological techniques. Contemporary evidence-based practice, however, requires a visible architecture for determining what should be taught and for establishing whether it was delivered, learned, enacted, effective, safe, and sustained.

DEAPE-PST extends the established sequence through Diagnosis and Evaluation. Diagnosis produces an athlete-centred formulation that aligns sport demands, psychological targets, context, and ethical boundaries. Education develops understanding and autonomous engagement. Acquisition establishes procedural competence. Practice builds representative transfer and self-regulation. Evaluation examines implementation, mechanisms, outcomes, maintenance, and welfare, then returns information to renewed Diagnosis. This cyclical structure reframes PST as an adaptive intervention system rather than a fixed package of mental techniques. The novelty of DEAPE-PST lies in integrating pre-intervention Diagnosis and post-intervention Evaluation as explicit, interconnected phases surrounding the established instructional core. Its contribution to the social sciences is a transferable framework for examining how context-sensitive behavioural interventions are formulated, implemented, evaluated, and adaptively refined. The next task is empirical: to validate the framework's components, test its propositions against the designs specified here, compare it with existing delivery sequences, and determine when its additional structure produces meaningful advantages for athletes, coaches, and sport systems.

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