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## **Technique Change in Experienced Golfers: Coaching Considerations for Maximizing Long-Term Permanence and Pressure Resistance**

**Howie J. Carson<sup>1</sup>, Dave Collins<sup>1,2</sup>, Bob Christina<sup>3</sup>**

<sup>1</sup>Institute of Coaching and Performance, University of Central Lancashire, Preston, UK

<sup>2</sup>Grey Matters for Performance Ltd, Stratford-upon-Avon, UK

<sup>3</sup>University of North Carolina at Greensboro, USA

### **Purpose**

Coaching interventions are often designed to impact on a golfer's skill with a variety of intended outcomes. Primarily, these have concerned the acquisition of a *new* skill (e.g., Dail & Christina, 2004), and the optimal execution of an already acquired skill (usually under conditions of competitive pressure; Bell & Hardy, 2009). However, recent study suggests that coaches are challenged when refining/tweaking a golfer's suboptimum but already well-learned skill (Carson, Collins & MacNamara, 2013). Here, it is usually imperative that the new version skill possesses both long-term permanence (i.e., does not regress) and resistance against negative anxiety effects (i.e., is pressure-proof).

Considering the importance of successful skill refinement to a coach's armory, it is surprising that these outcomes remain under-addressed by sport science/coaching researchers, despite Christina (1987) highlighting the issue over three decades ago. Accordingly, this symposium is targeted at assisting coaches working with *experienced* players, whether seasoned 15-handicappers or PGA Tour professionals. Specifically, it aims to offer a review and critique of key issues to provide sound building blocks towards achieving successful skill refinement, offering guidelines to fellow professionals on how to do it better.

### **Method**

A progressive approach will be taken towards the delivery of three presentations. Firstly, we present an argument that high-performing environments require the coach to cater for both main effects and interactions between biological, psychological, and sociological factors. Secondly, dependent factors for successful refinement, mechanistic underpinnings, and essential precursors to making refinements will be presented. Thirdly, and finally, an interdisciplinary five-stage process (Carson & Collins, 2011) will be

presented that operationalizes these considerations with the aims of long-term permanence and pressure resistance. Data will be presented to demonstrate support for the precepts of this model.

## **Analysis/Results**

**Presentation 1.** Optimizing the impact of these interactive factors is crucial. Accordingly, there is a need to employ a Professional Judgment and Decision Making (PJDM; Martindale & Collins, 2005) approach *if* we are to be truly working in the interests of *each* golfer. Practically, this means that coaching decisions are derived from a process of generating alternative courses of action, then weighing up the pros and cons of each against the intended outcome and presenting context. The impact is then carefully monitored, with adjustments made as necessary. The approach necessitates moving away from a “one size fits all” approach and understanding *why* an action should and another should not be taken. In short, the practitioner as creative chef rather than recipe following order cook!

**Presentation 2.** In determining whether or not to implement technical refinement, coaches must consider a multitude of factors. From a motoric perspective, what is the influence of the athlete’s existing technique and how complex are the changes that are required? Psychologically, is the golfer capable of making a change and are they motivated to do so? Sociologically, is there a need to provide a team of experts and, if so, how will they be organized to best support, and ensure essential trust with, the golfer? Once these questions can be answered the golfer and coach must understand that the cognitive mechanism involved requires the motor program to be modified by a return to conscious control; a process that can be very dispiriting for many golfers. Finally, as a precursor to initiating this process the coach might consider the following practices with their player.

**Presentation 3.** Technical refinement must proceed through stages of Analysis, Awareness, Adjustment, (Re)Automation, and Assurance; the Five-A Model. There are several risky periods during this process that may compromise success. Notably, and building on the previous presentations, coaching techniques such as contrast drills, shaping, use of holistic cues (e.g., rhythm), and combination training (physical exertion and high level technical challenge) can positively facilitate the process. Finally, data from empirical case studies reveal that changes in intra-individual movement co-variability across various components of technique (either targeted or not targeted for refinement) can be employed as a

useful indicator of a golfer's level of conscious control applied and, therefore, progression through the Five-A Model.

## **Conclusions**

Skill refinement holds relevance to any experienced golfer (not just elites) attempting to change their already existing and well-established movement pattern. Notably, the process is distinct from skill acquisition and performance. Moreover, effective use of a PJDM approach enables the coach to operationalize the nonlinear Five-A Model to best suit each golfer and their presenting needs. Coach education services should make these distinctions, the underpinning evidence-base, and support for a PJDM approach clear.

*Keywords: Five-A Model; Interdisciplinary approach; Movement Variability; Skill Refinement*

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## **Biography**

**Dr Howie Carson**

Howie is a Research Fellow in Motor Control and Coaching at the University of Central Lancashire. His research interests include skill refinement, performing under pressure, skill acquisition, and coach development. From an applied perspective he is an Advanced PGA Professional golf coach, BASES Sport & Exercise Scientist, and Chartered Scientist. He has provided support across several sports including: golf, archery, rugby union, motor sport, cricket, and clay pigeon shooting.

**Professor Dave Collins**

Dave is Professor and Director of the Institute for Coaching and Performance (ICaP) at UCLan, and Director of Grey Matters Performance Ltd.. As a researcher, he has almost 300 peer review publications and over 60 books and book chapters. As a practitioner, Dave has worked with over 60 World and Olympic medallists, plus professional sports teams at Premiership and international level. Dave took classes at Penn State with Professor Christina over 25 years ago and is still reaping the benefits!

**Professor Emeritus Bob Christina**

Bob Christina is Professor Emeritus of Kinesiology and Dean Emeritus of the School of Health and Human Sciences at the University of North Carolina at Greensboro (UNCG). He currently serves as Assistant Men's Golf Coach at UNCG and on the Board of the World Scientific Congress of Golf as well as research and educational consultant on Learning and Performance for the Pinehurst Golf Academy, Precision Golf School, Golf Magazine, Golf Magazine's Top 100 Teachers, PGA of America, LPGA T&C division.