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Golf swing technician Jim Christine:
Bridging the gap between the science of the golf swing and the art of golf coaching

A Commentary

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INTRODUCTION

The knowledge of expert coaches, and how they have developed such expertise in their sport, has always fascinated me. In reading the interview with Jim Christine, I revelled in the learning presented under the various transcript headings and again considered how such knowledge and expertise, accumulated over a career in golf, can be best communicated and understood to those who aspire to follow in his footsteps. Of course, extensive literature exists into expert golf coaches' knowledge [1, 2, 3], the fundamental knowledge areas required for effective golf coaching [4, 5, 6], how their technical knowledge has been acquired [7], and the rationale that drives these expert golf coaches' actions [8, 9, 10]. From Jim's responses to the interviewer's questions we gain many rich examples relating to each of these areas. What I am very interested in however is firstly, Jim's deep held coaching values that have shaped his coaching exploration, guiding his work with players as well as shaping his own professional development. Secondly, how Jim has made the specific decisions that have so benefitted his players along the way? It is in these two areas that I see great potential for coach educators to dig deeper into the experiences of golf's expert coaches and help nurture the next generation to better understand their passion for coaching, influence their behaviours, and help them to make the best decisions for those that they work with.

THE BASIS OF LEARNING – A COACH'S VALUES

A starting point when considering a coach's values and how they impact on behaviour is to first appreciate the coach's philosophy [11, 12] and beliefs about learning (epistemology). In essence, this revolves around a series of questions for each coach to consider around the nature of knowledge and learning; i.e., Is knowledge simple or complex, handed down or created, certain or ever changing? Is learning quick or slow, finite or able to be developed? [13, 14]. Sports coaching research has recognised philosophy as an important component of practice [15, 16, 17] and is already embedded in many sports' coach education courses, and sports coaching degrees. I would encourage that the emphasis of this exploration focuses on coaches' epistemology, how this affects their decisions, and its impact on the end users' experience of the coaching act. To help this process, in my work, I have utilised the Epistemological Chain (EC) framework, which involves the inter-related/connected decisions made that are derived from high-level personal beliefs about knowledge and learning, and which become apparent through the planning processes adopted; the learning environment created; the operational actions taken; and the review and assessment of performance. [18, p. 153]

What is clear from the interview is Jim's own passion for learning and his curiosity about the coaching of the golf swing. Jim has utilised the various sources of information that were available to him and fellow golf coaches at the time to aid his search for knowledge. His account of how he synthesised the information he found in books, on television or video, through his professional apprenticeship, and the time he invested in visiting, observing and questioning *expert others* is a story that many fellow Master PGA Professionals from his generation would identify with. In each of the quotes presented we can again see how Jim's EC, and in particular his thirst for knowledge around the swing technique, has shaped how he interpreted and then embedded the concepts and ideas he uncovered into his own coaching.

SUPPORT FOR LEARNING – DETERMINING THE 'RIGHT' KNOWLEDGE

Jim has clearly spent his entire career 'learning' and developing his practice and has quite rightly been recognised as a Master Professional and expert in his field. In the Twenty First Century, where golf coaches have almost instant access to every sort of information, one must consider what the best method is today by which to develop coaches' learning and accelerate their own journey to expertise. Simply amassing information through online sources such as You Tube videos, websites, podcasts, blogs and other social media channels can be dangerous unless the coach reviews the content from such sources in a critical manner against the coach's own strongly articulated values and beliefs (and their desired / aligned EC of coaching). As Jim identified from his recollection of how the two-dimensional image of Ben Hogan's swing failed to illustrate the rotational forces, information taken out of context can present only part of the picture and have damaging consequences if applied by an unquestioning coach. Indeed, the coach education community has also highlighted the negative impact of the type of surface level information widely available and distributed across the internet [19]. It is extremely important therefore that contemporary coach education programmes help coaches develop their own critical thinking skills to make meaning from this plethora of available information. If critical thinking skills are developed, then critical reflection by coaches on their own and others' coaching is truly possible. This, in turn, will help fast track coach development. The EC framework in its various iterations, [20, 21, 22] could provide a useful framework for coaches to reflect against.

Philosophy is so important as it links to behaviour inextricably through the EC and drives coach decision-making. In the search for information to make them better, coaches should therefore explore the knowledge that is required by expert coaches to inform their decision-making processes. Decision-making is a key function that defines a coach [23], whilst the ability to make excellent decisions is required to develop expertise [24] and is a "hallmark" of an expert coach [25, p.466]. Expertise research has revealed that expert coaches have deeper developed knowledge structures [26]. They therefore "see things differently from the less expert... [and] know when and how to make the decisions that lead an athlete or a team to success" [10 p.221]. I would therefore argue

that further exploration of how Jim and other expert golf coaches make decisions would make a huge contribution to coach learning.

ACCELERATING LEARNING - EXPERT KNOWLEDGE AND HOW TO MAKE EXPERT DECISIONS?

As a coach educator myself, I am presented with the challenging task of how to speed up the process of 'teaching' coaches to become experts in their field. One valuable yet underutilised, method that might speed up this process is Applied Cognitive Task Analysis (ACTA) that fits within the theory of Naturalistic Decision Making (NDM). NDM is the analysis of how experienced people - operating in their normal, real-world surroundings - actually make decisions [27]. ACTA is one of the methods employed in order to uncover how experts make expert decisions and how the behaviour of experts differs to that of non-experts [28].

ACTA breaks down a learning episode through knowledge elicitation techniques to build up a picture of how experts *actually* make their decisions rather than how we think they make their decisions. Concept maps may assist in recognising and identifying the full range of decision-making tasks required. This then enables the construction of a Knowledge Framework, which identifies the key decision points and the inputs that experts are basing their actions upon. Less experienced practitioners are unable to see or respond to the key decision points and inputs. This information highlights a range of common mistakes that is then used to support the learning of those 'less expert' [29]. Here various scenarios are developed with key cues / information embedded. At various points in the scenario, the event will be paused and questions posed to the learner on what he/she has noticed so far and what they would do next. The learner's answers are compared to the experts' decisions that were established during the ACTA [30]. In this way, the tacit knowledge of experts can be made explicit to stimulate targeted professional reflection and a deeper learning for the participant [31]. Using such techniques within golf's coach development programmes would

surely increase the learners' knowledge base, situational awareness and reflective practice, all of which are crucial factors in supporting the journey to expertise.

CONCLUSION

I recognised many interesting themes from Jim's interview relating to coach learning and developing expertise; his search for knowledge, his long apprenticeship of learning, a focus on the technical aspects of the game, and how he aligned his own EC linking his philosophy of golf coaching to his methods of practice. I return now to the question of how we can support current and future coaches to develop their own expertise. Here I recognise that there is already some great work being done by PGA membership programmes [32], university degrees [33], and commercial providers around the world [34]. However, I can still identify a number of 'gaps' in provision worth investigating if we are to accelerate the learning process and create the expert workforce we all aspire for.

For me the two key factors are 1) for coaches to better understand their values, specifically their epistemology, and 2) to help coaches make better decisions when coaching. In my opinion, the EC framework and the use of ACTA hold significant value and can substantially accelerate golf coaches' progress to expertise. However, these two tools need the support of programmes that nurture higher levels of learning. Critical thinking, reflection skills, and creativity should all be valued and promoted not only in formal courses, but also within non-formal and most importantly informal learning opportunities.

If we are to prepare our coaches for the game of the future we need more focus on coaching process, pedagogy, and development of expertise. We need coaches to be able to filter the information they receive from the various 'influencers' operating in and through social media, and to be better placed to make good decisions based on better informed choices.

There are pockets of good practice that can be found all over the world. In my work I have encountered those truly trying to create humanistic and holistic talent development environments at their clubs and academies [35]. I have developed and supported programmes that focus on teaching golf coaching practice and process [36] and those that have placed great emphasis on the philosophical basis of coaching pedagogy [37] and critical thinking [38]. Most recently, I have also been assisting the Edge Golf College in Portugal as they create an innovative tournament play and golf coaching course, which encapsulates all of the elements above whilst also providing excellent facilities and human resources for students to progress their careers [39].

The common factor running through all of these projects has been the passion and drive of their creators to foster higher levels of thinking and learning in their students. For me, this is the key component required to nurture the next generation of Master Professionals.

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