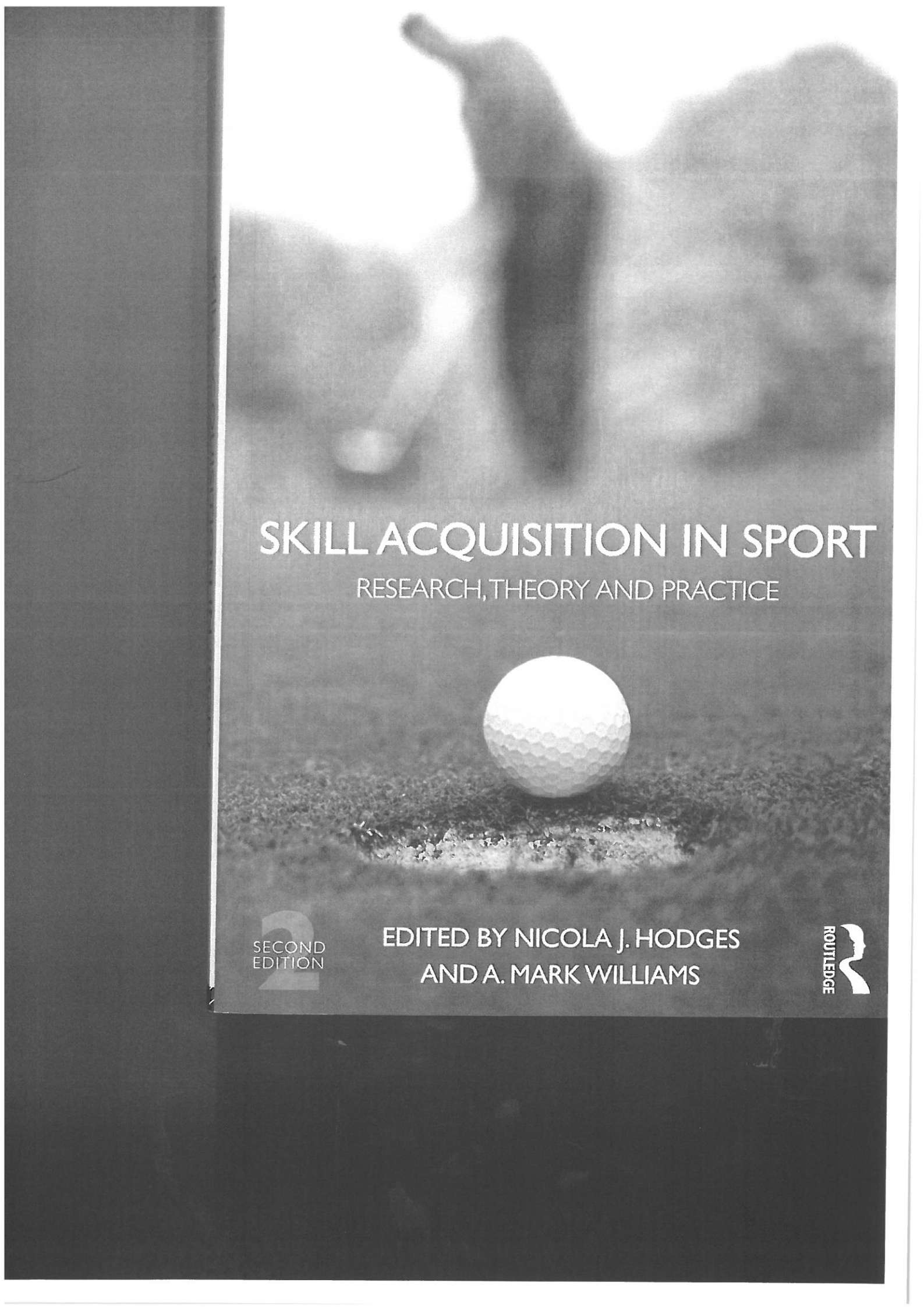




SKILL ACQUISITION IN SPORT

RESEARCH, THEORY AND PRACTICE



2
SECOND
EDITION

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ROUTLEDGE


21 Working in the field (Southern Hemisphere)

Chris Button and Damian Farrow

Introduction

In the Southern Hemisphere, the number of skill acquisition researchers who are working in the field is few in comparison with other sport science disciplines (such as physiology, strength and conditioning, and sport psychology). Arguably this situation has developed from the lack of a dedicated accreditation pathway for skill acquisition within professional bodies such as Sport and Exercise Science New Zealand (SESNZ) and Exercise and Sports Science Australia (ESSA). It is also likely that many academics perceive research, theory and practice to be an awkward *menage-à-trois* to combine effectively, dissuading them from leaving the relative comfort of the classroom or laboratory. However, although fundamental motor learning research dates back to the late 1800s, it is still a relatively young and evolving sports science discipline. Skill acquisition has made considerable strides in recent times with notable developments in research techniques, theory, practical implications and technology. In fact, the arrival of the new millennium seems to have heralded a new dawn for skill acquisition as a discipline. In Australia and New Zealand in particular, there appears to be increasing recognition of its role and potential value for high-performance sports. For example, new support positions for skill acquisition specialists have been created within the Australian Institute of Sport (AIS), and New Zealand's equivalent body (NZ Academy of Sport) appears keen to follow this lead. Specific skills development-focused coaching jobs have appeared in many of our most popular sports such as rugby, soccer, cricket and Australian rules football. The formation of the Australasian Skill Acquisition Research Group (ASARG) in 2007, which has since met on a yearly basis to discuss practice and promote the discipline, is further evidence of the critical mass of skill acquisition specialists who are currently working in the Southern Hemisphere. Between 20 and 50 researchers and practitioners have regularly attended ASARG since its formation.

The first author (Button) has worked as a skill acquisition lecturer for over 10 years in New Zealand and previously the UK. On a regular basis over this period he has consulted, and conducted applied research, with several high-performance sports including badminton, cricket, motorsport, football and netball. Much of Button's research and consultancy work has been influenced by ecological theories

of motor learning (see Davids, Button & Bennett, 2008). This author works at the University of Otago in New Zealand and maintains a productive working relationship with the NZ Academy of Sport, the organization that administers sport science services for elite athletes. The second author (Farrow) is a motor learning lecturer, having been the inaugural skill acquisition specialist at the AIS in 2002. In 2010 he took up a conjoint appointment between Victoria University and the AIS in an applied research role in which he attempts to forge strategic research partnerships between sports scientists, coaches and academics.

In this chapter, we provide brief case studies from two sports, badminton (Button) and swimming (Farrow), to illustrate the kind of support activities that we have been involved with in recent years. Thereafter, we reflect on the challenges faced in trying to satisfy the often competing demands of service support, applied research and academic expectations. We offer some of the solutions that have worked effectively for us, and finally signpost directions in which the professional practice of skill acquisition needs to develop in future. What the future holds for skill acquisition as a discipline remains to be seen, although, in our opinion, the recent signs in Australasia at least are very promising.

Case studies

Badminton

In one of my (Button) first experiences of applied work, I spent 3 years assisting the national coach of a high-performance senior badminton squad. For the first year, I was mentored by a senior skill acquisition colleague and for the remaining time I worked alone or occasionally alongside a Performance Analyst. This initial period of mentorship, although brief, was extremely valuable and helped me to feel more at ease in an environment with which I had little familiarity. I typically attended one training session per week (approximately 3 hours) at a large sports hall and occasionally travelled to competitions, primarily to film the players and later generate feedback and notational analysis. The training sessions that I attended had a primary emphasis on technique and skills development, although, as with all of the athletes' training, there was a significant game-like physical intensity to the practice activities.

At our first meeting with the coach, we introduced some key skill acquisition themes (see checklist in Table 21.1) and it was established that the coach was keen to receive advice about issues such as practice scheduling, altering well-established coordination patterns and training anticipation. We also conducted individual interviews with the players to explain our roles and then assessed their perceived needs and compared them with the coach's views.

In relation to the first issue highlighted by the coach (i.e. practice scheduling) it became clear that many of his drills were developed to address one or two key issues. As such the practice activities seemed heavily technique focused and repetitive, although still quite demanding. For example, in one drill the coach would stand on a bench at the baseline and smash consecutive shuttles to the receiving

Table 21.1 Key themes of skill acquisition introduced/discussed with coach and players

Topics	Relevant chapters in this book	Who requested further information
<i>Communication</i>		
Instructional effectiveness	2, 4	Coach + 1 player
Feedback provision	1, 3, 10	1 player
Coach-athlete/athlete-athlete relationships	13, 15	7 players
<i>Development of skill</i>		
Changing skilled movement	7	Coach + 10 players
Skill development and periodization	15	Coach + 1 player
Postural development for performance	-	4 players
Improving balance/proprioception	-	3 players
Recognizing skill development and planning	12	-
Optimizing pre-performance preparation	6	-
<i>Development of speed</i>		
Speed-accuracy development	-	3 players
Reaction and movement time development	-	5 players
Perceptual awareness of key information	7, 16	1 player
Anticipation training	17	Coach + 4 players
<i>Retention</i>		
Understanding practice structure	8, 11, 19	Coach
Perception-action development	13	4 players
Optimizing design of practice environment	5, 9	2 players
Effective practice for competition transfer	4, 8	3 players
<i>Understanding internal and external factors affecting skilled performance</i>		
Constraints analysis of athlete performance	7	8 players
Identification of strengths and weaknesses	-	1 player

player's forehand or backhand with only a brief delay between smashes to allow the player to reset his or her position. Then during breaks the coach would provide feedback to help improve the player's body position, footwork, and racket carriage. The coach explained that the rationale for this activity was to allow him to mimic the speed and intensity of attacking play in a game situation while training the player's ability to return fast smashes under pressure and recover quickly. After

the session, discussions arose with the coach about how the scheduling of practice can affect skill retention and transfer (e.g. Ollis, Button & Fairweather, 2005) and how such drills can alter the typical perceptual demands inherent in game play (e.g. Wilson, Simpson & Hamill, 2009). It was agreed together that a more effective way to implement this practice activity was to design a two-versus-one drill, in which the doubles team adopted an attacking 'front-rear'-style formation. The role of the rear court player was mainly to smash to the single player's forehand and backhand court (as the coach had been doing from the bench) whereas the forecourt doubles player might engage in a net rally or play a defensive clear shot. By mixing up the delivery of shots for the receiving singles player, yet keeping a one-player advantage for the doubles team, it was possible to maintain the playing intensity of the drill and game-like perceptual demands while still focusing upon training the ability to retrieve a smash.

The coach and several players themselves expressed interest in the issue of how to adjust well-established coordination patterns. Although most of the players were still young they had been playing competitively for at least 5 years and consequently they had all developed strong preferences and styles of playing. For example, we spent several sessions together exploring how the players could develop their technique for one of the most potent shots in badminton, the smash. Video analysis revealed that many of the players relied mainly on their upper body to generate power when smashing. We felt that, by initiating the kinetic chain earlier in their hips followed by their trunk and shoulders, these players could generate an even more powerful and effective action (B. K. Lee, 1993).

Some of the skill acquisition-specific strategies that we used included:

- providing video feedback of technique/movement in breaks;
- asking the players to vary the amplitude and timing of movement (related to the scaling of key control parameters, a concept used to probe the dynamics of skilled performance; Davids et al., 2008);
- getting the players to smash when playing with their non-dominant hand, thereby causing a sufficiently large disturbance to established, stable movement patterns to encourage exploration (Button, Chow & Rein, 2008); and
- applying elastic resistance with straps wrapped around the hips to promote earlier and stronger involvement of proximal segments in the kinetic chain.

In brief, the rationale for each activity was to challenge the player to relearn elements of the skill and explore the optimal timing and sequencing of actions to develop speed and accuracy in the shot (Lee, 1993). Inevitably, the players reported making more mistakes and that their action felt very strange during this period of exploration. However, it was reinforced to them (and the coach) that some variability in performance outcomes is likely, even necessary, to accompany any alterations to stable coordination patterns (Davids, Glazier, Araújo & Bartlett, 2003).

Badminton is a very fast sport that presents players with considerable perceptual demands. Several players indicated that their anticipation could be improved and

that they needed to develop perceptual awareness. Once more, in this situation we experimented with a few practice activities. Being aware of previous research using video occlusion techniques in racket sports (Farrow, Abernethy & Jackson, 2005), I created edited video footage for each player in which other players were filmed from the receiver's perspective playing a range of shots (i.e. smash, clear, cut and drop). The footage was occluded at the point of racquet-shuttle contact and the players had to anticipate the likely direction of the shot. Although I felt this strategy was initially helpful in terms of educating players about relevant kinematic information that may be present in their opponent's action, I was not sure that the players were able to apply the information well on court. Therefore, I created a game-like practice activity in which the players had to react to shots from a player in the rear court using darkened shuttles (dyed green). Against a dark background the dark shuttle was difficult to see and hence players were forced to rely more on anticipatory information to predict how to respond. Feedback later from the players suggested that they enjoyed this kind of game specific practice despite the increased perceptual challenge. In fact, one player said that, when returning to a normal white shuttle after practising this drill, it felt as if he were watching in slow motion, which I took to be a positive sign!

By now you should be asking yourselves how I evaluated whether these new practice interventions were effective. In fact, this is one of the issues which I have found most challenging and frustrating with regard to applied work. Perhaps surprisingly, getting objective evidence (data) to test the effectiveness of an intervention is not always easy. In some sports, such as rifle shooting, there are quite simple ways to monitor performance effectiveness (e.g. shooting accuracy) and to relate that to an athlete's behaviours. However, in complex, dynamic sports such as badminton, relating performance to behaviour is not as straightforward. One obvious strategy might be to examine the players' game performance before and after the new intervention. However, with no control condition or group to compare against and a multitude of extraneous variables in competition it is impossible to establish whether it was the intervention itself that led to any changes. Occasionally, technology may provide solutions, for example when trying to measure a change in response time through high-speed video (Kwan, Andersen, Cheng, Tang & Rasmussen, 2011) or alternatively the speed of a smash with a speed gun. On reflection, the strategy I most often turned to in practice was to regularly conduct semi-qualitative analyses of video footage. This helped me and the coach to establish directly whether certain changes in movement patterns resulted from the interventions and whether they persisted from one situation or training session to the next. As we discuss later in the chapter, evaluating the effectiveness of practice activities will be an important issue for future practitioners.

To summarize, it may be of interest to reflect upon how my research and applied work experiences have influenced each other. I would suggest that the former (research) has had a more direct and obvious influence upon the latter (applied work); indeed I would not contemplate working in a high-performance environment without confidence in my theoretical knowledge. However, the extent to which applied work has influenced subsequent research is less obvious to me. I have

always found most satisfaction in using sport as a task vehicle to test theory, so I do not attribute this trend in my research to consultancy work. However, I do admit to a growing interest in research topics such as automaticity and decision making, and feel sure that this subtle change in research emphasis has been prompted by many of the inspiring athletes and coaches I have worked with.

Swimming

After I (Farrow) completed my doctoral work examining perceptual skill in time-stressed interceptive sports, it was a rude awakening when I accepted a role with the AIS Swimming Program. In Australia, swimming is a high-profile sport and the predominant disciplines in relation to sports science application have been biomechanics and physiology, with a liberal dose of nutrition and psychology. However, the coach determined that there was something missing between the application of his coaching skills and the information provided by the biomechanist. Perceptively, the coach viewed a skill acquisition specialist as the missing ingredient and hence sought a meeting with myself to see what I had to offer.

Servicing sports programmes and specifically coaches, and to a lesser extent the athletes, is all about building relationships. I have found the completion of a practice analysis is a valuable strategy in establishing a foundation for future servicing. Practice analysis involves attending a range of practice sessions and objectively analysing them relative to the established principles of skill acquisition. In particular, I evaluate the structure and organization of practice and the coach's instruction and feedback relative to the drill/session objective when expressed as a learning or performance goal. Often the very simplest observations are the most telling, particularly when you are not familiar with the sport, as was the case for me with swimming. Frequently, I found myself challenging the practice/coaching traditions of the sport built around experiential knowledge "how I learnt or was coached" compared with the empirical evidence on which my evaluation was predominantly based. This is an important issue that will be discussed in great detail in a later section; the best science is created by the merging of the two viewpoints through constant collaboration.

The practice analysis with swimming highlighted a range of classic skill acquisition issues. First, it was evident that the differentiation between learning and performance is not something that is actively considered in the macro- and micro-planning of a swimming programme and its sessions. The programme is typically arranged in 14- to 16-week training blocks that lead to a competition phase, followed by a 2-week recovery period. This process is generally repeated over the 4-year cycle between Olympic campaigns. Obviously certain events are more important than others, particularly as the cycle gets closer to Olympic trials and then the main event. Initially, I contextualized learning and performance in relation to swimming, highlighting that learning sessions tend to encourage trial and error, a focus on technical skill production and an accompanying de-emphasis on recording results/times. In particular, I reinforced to the coach that observable change in behaviour may not be immediately apparent. In contrast, performance sessions should

encourage technical excellence and fast times: essentially a test of how the swimmer is performing at present (Schmidt & Lee, 1999). We then developed together some examples of practice goals. For example, learning-focused sessions included:

- Sessions when no lap times were recorded; I asked the coach how his athletes would respond if he arrived on pool deck without a stopwatch.
- Swimmers reporting their own stroke rates, but not given feedback until a block of efforts were completed. We discussed the notion of faded feedback and strategies to delay/summarize the resultant information to encourage the swimmers to work on developing their own error detection and correction system (Lavery, 1962; Salmoni, Schmidt & Walter, 1984; Sherwood, 1988). Consequently, the coach began to ask swimmers to report on how they felt a particular technical element was completed rather than always starting a conversation with an athlete with an observation or suggestion (Chambers & Vickers, 2006).

For sessions, or indeed specific sets within a session, designed to have a performance focus we trialled the following:

- Requiring a single race effort at the end of a session; lap time and stroke rate are reported and a qualitative rating of technical success is documented through video analysis of the performance. This method was used to allow the athlete to recalibrate their practice repetitions within the context of performance, and ascertain what practice effects (technical foci) could be maintained under more competition-like conditions (much like a post-test condition).
- A strong integration of all elements of a swim race, for example, when each effort started with a dive start rather than the typical push off the wall from within the pool. This was consistent with notions of transfer-appropriate processing in which the value of any practice completed needs to be examined on the basis of how the skill is performed in a test context (Bransford, Franks, Morris & Stein, 1979; T. D. Lee, 1988).

Closely related to the overarching learning and performance objectives of a session was the need for the coach to consider the practice structure and organization of the drills he was asking his athletes to complete. Discussion led to the generation of a whole range of different ideas under the common theme that variety (variability) is the spice of life (and key to learning) (McDonald, Oliver & Newell, 1995; Schmidt, 1975). A sample of the initiatives introduced included:

- Increased task switching through frequent alterations between stroke types or the athlete's focus of attention. This process became an enjoyable one for both of us. The coach would bring me his session plan illustrating the volume for the session and the stroke to be used. My task was to reorder the session to promote task switching without impacting on the prescribed volume. It was not long before the coach was generating his own sessions that would be more than

suitable. A simple example involved distributing the volume of practice starts throughout the session rather than the customary blocked practice approach (see Barreiros, Figueiredo & Godinho 2007; Handford, Davids, Bennett & Button, 1997; Magill & Hall, 1990).

- As empirical evidence on the benefits of self-regulated practice approaches evolved (e.g. Keetch & Lee, 2007) I took this information to the coach and discussed how we might be able to introduce this within his programme. One successful strategy involved providing templates for the athletes, who then planned their own session. This was done one session per week (swimmers averaged 11 pool sessions per week) for an 8-week preparation period.

The final element to be refined, based on the practice evaluation, concerned instruction and feedback. The typical approach of the coach was to present lap time and stroke rate for each swimmer after every key effort in the main training set of a session. I considered this to be a consequence of the training focus typically being on the physiological aspects of performance. Another contextual factor that needed to be managed was the easy access to feedback technology, in particular, plasma screens located at the end of each lane that could provide feedback of the swimmers' performance from any camera perspective required (side-on, overhead or underwater) immediately after they completed a lap (see Figure 21.1). I challenged the coach to consider two fundamental feedback issues; first the feedback content, in particular the balance between the swimmers' need for knowledge of results and knowledge of performance information; and second the delivery and timing of the feedback (see Wulf & Shea, 2004 for a review). A range of strategies were implemented as a consequence, for example:

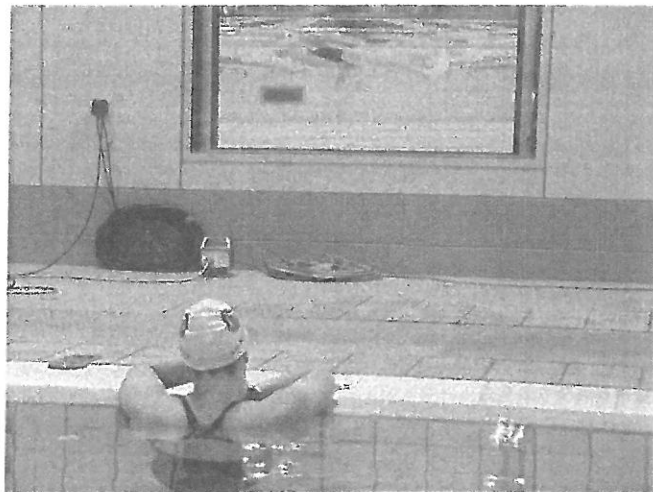


Figure 21.1 An AIS swimmer watching video feedback of her technique on a specially mounted plasma screen.

- Swimmers rated their effort on both technique and result. Two columns were drawn on a whiteboard so that the swimmer estimated lap time or stroke rate and then quality of the technical element of interest. Equally, on occasions only one type of information was prioritized on the basis of individual swimmer need.
- The ease of access to video feedback posed its own series of issues in terms of harnessing how often the swimmers could see themselves, usually accompanied by a coach commentary. The amount of laps a swimmer could view their video feedback was regulated to reduce the likelihood of dependency effects as well as requiring them to become more self-analytical about their own performance (i.e. feel it) rather than waiting to see it or hear the coach's evaluation.
- Related to the above point, the concept of bandwidth feedback (e.g. Chambers & Vickers, 2006) was introduced to reduce the swimmer's reliance on the coach and equally decrease his desire to provide more instruction or feedback. Consequently, feedback was provided only when a performance was outside a pre-agreed acceptable range of correctness, be it a lap time or a technical stroke component. In order to determine the pre-agreed range of correctness it was common to use video footage of the swimmer from a previous session or competition. Similarly, feedback was delayed and summarized to encourage the swimmers to attune and refine their own feedback/feel of their performance. Questioning was used to elicit these feelings.

I am into my second Olympic cycle with this programme because questions and challenges keep coming and equally because the combination of objective and subjective measures demonstrate continued improvement in the swimmers. Interestingly, the coach feels that the biggest change in the swimmers, since they adopted a more formalized skill acquisition approach, is their flexibility to adapt their technique or make subtle changes in a relatively efficient manner. Similarly, athlete feedback focuses on how they bring their brain to training more than ever before. Importantly, we have discussed leaving the brain at home when competing – but that is another story!

When reflecting on how my research and applied work experiences have influenced each other, having been immersed in a practical context for more than a decade has strongly influenced my perspective. In simple terms, practical significance is more relevant to me than theoretical significance. Hence, although I adopt a specific theoretical framework when examining a particular issue, I prioritize the need for an evidence-based practical outcome as compared with a theoretical contribution to the field. This is evidenced in the premium I have placed on high ecological validity, primarily through experimentation in naturalistic settings using complex sport skills rather than more simplified tasks in a well-controlled laboratory setting (see also Wulf & Shea, 2002). As time has evolved I have also felt more comfortable being not locked to a specific theoretical framework but rather open to the application of alternative approaches dependent upon my interpretation of which framework better addresses the issue to be examined.

Challenges and solutions

We hope that these case studies will bring some awareness of the typical challenges that are faced by skill acquisition specialists working in high-performance sport. Below we list a number of common issues that we have faced and discuss potential solutions.

What can you do for me?

Coaches (and athletes) may have little awareness of skill acquisition and what it has to offer. It is of value to form a trusting relationship by explaining some key principles of skill acquisition and discussing examples within the sport in question. Analysing practice together is a useful way to begin sharing information and to prioritize learning and performance in different training activities.

Remember you are not the coach

One of the reasons for the relative infancy of skill acquisition as a stand-alone sports science discipline is that historically it has been considered the domain of the coach. This is not surprising as many of the concepts and issues we consider are very much what the coach is responsible for delivering on a daily basis. However, it is important not to confuse an athlete by blurring the distinction between scientific provider and coach. Focus on developing the coaches' skills rather than your coaching skills.

How can I ensure the athlete plays an active role in learning?

A skill acquisition specialist and the coach need to create an effective learning environment for the athlete(s). Practice should be mentally and physically demanding, mimicking as many of the factors found in competition as possible. Whereas simplification of a practice activity (e.g. batting against a bowling machine in cricket) may be an *efficient* way to adapt an established movement pattern, the aim should always be to develop perception-action relationships that will be *effective* in competition (Wilson et al., 2009). In order to achieve consistently high performance levels, many skilled athletes have already developed effective error correction and self-regulation strategies (Aglioti, Cesari, Romani & Urgesi, 2008). However, large volumes of repetitive training activities with relatively low perceived challenge may lead to a more passive role in the learning process, which is to be avoided if at all possible.

How can you monitor and evaluate the effectiveness of skill acquisition interventions?

Any scientist should be looking for empirical evidence to better understand the situation in question. For skill acquisition support there are a range of sources

of evidence that can be gathered (some listed below), in the absence of any direct measures of learning it is advisable to look for evidence of adaptation, skill retention, and maintenance of performance under pressure.

- Performance outcomes
- Qualitative video analysis
- Quantitative measures of behaviour (e.g. times, distances, speeds)
- Biomechanical analysis
- Coach and player feedback

What if the answer is 'I don't know'?

There is not always a firm empirical base in skill acquisition research upon which to build answers to applied problems. Furthermore, the research literature predominantly focuses on novice or early learners and there is much less information regarding advanced performers. Skill acquisition is still a relatively young discipline and there is often a considerable gap between theory and practical suggestions. Coaches may not like to hear it, but rarely are solutions black and white. Obviously in such situations honesty (i.e. 'I don't know') is usually a better strategy than complete guesswork. However, in our experience, an open-minded coach will often be prepared to give an informed and justified suggestion a try.

Who has the final say?

Nowadays, high-performance sports are serviced by a team of different specialists, each of whom is keen to have his or her say. Inevitably competing or conflicting advice can arise from the complexity of the high-performance environment (e.g. periodization, practice versus performance, injury avoidance). Clearly, in relation to skill acquisition, coaches should have the final word in terms of the content of a training programme, as the buck stops with them. Regular team meetings and effective communication can help the situation, but the reality is that the coach must filter and manage the information he or she receives to the best of his or her ability.

Can I juggle academic demands with support work?

Support work does take considerable time, which means that many academics choose to avoid it rather than risk compromising their research or teaching. However, in our view, the different roles do not necessarily compete with each other. For example, there are plenty of nice examples for teaching settings to be gained from support work and good opportunities to be exploited for applied research if you can convince practitioners of its potential value (see recent special issues of the *International Journal of Sport Psychology* in 2009 and *International Journal of Sport Science and Coaching* in 2011). Good time management is vital and it helps to consider strategies to work on the go and segregate certain important jobs (e.g. find your best space/time for writing). Ultimately, one can learn a lot about motor

learning by observing and analysing it up close and, by integrating aspects of your teaching, research and applied work, you will soon discover the potential benefits. Admittedly, in our specific cases the nature of our current, and previous, academic positions have been flexible enough to allow us the luxury of fostering productive relationships with sports administrators and coaches. Although juggling academia with support work has certainly kept us busy, neither of us would wish to have it any other way!

Summary and conclusions

We hope that our applied work has been, and continues to be, an interesting insight into skill acquisition in the real world. In our careers to date both authors feel fortunate to have worked alongside many excellent practitioners and athletes, the large majority of whom have been eager to challenge and develop their own behaviours by embracing skill acquisition support. With the advances in skill acquisition knowledge and practice described in detail throughout this book comes considerable responsibility in communicating the current state of the discipline effectively. As evidenced by this chapter, there are a multitude of issues that require greater understanding. There are times when we have felt we had a solid empirically supported answer for the coach. Equally, there are occasions when we felt the literature could not provide the level of confidence we required to recommend a strategy to the coach, highlighting the need for more applied research. Spending time in the field has been essential for us to fully explain what skill acquisition is and how it can benefit practitioners as well as to develop an effective balance between research and performance driven outcomes. Furthermore, with each sport there has been a considerable amount for us to learn about the high-performance environments we have encountered. We feel that our experiences in the field have been invaluable in terms of providing real-world, credible examples within our teaching and supervision of students. Although there is a constant ebb and flow in academia between different demands on our time, we are privileged to have some choice over what we do and when we do it, and for both of us that means getting out into the field as often as possible.

We doubt if there are too many tangible differences between the issues we have encountered and those raised by our Northern Hemisphere neighbours. Admittedly in Australasia academics have only recently begun to experience the same level of scrutiny that comes with regular research and teaching assessments common for some time at most Northern Hemisphere institutions. How these academic pressures and expectations will affect our ability to continue engaging in applied support work remains to be seen. One particularly pleasing aspect of the relatively small and isolated population of skill acquisition researchers in Australasia is the multitude of support opportunities that seem to exist and our willingness to collaborate and share ideas. At the time of writing, skill acquisition seems to be riding the crest of a wave in terms of profile in high-performance sport in Australasia. We hope it can keep riding that wave for many years to come!

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