WHY DELIBERATE PRACTICE ISN’T ENOUGH

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Introduction

The most contentious area within Ericsson and colleagues’ (1993) framework of deliberate practice implies that regardless of natural talent anyone can become an expert performer provided a minimum of 10 years or 10,000 hours of deliberate practice is executed. Furthermore, the theoretical conviction that the probability of achieving exceptionality is increased with very early specialisation is juxtaposed to those who advocate a delayed approach to sports specialisation (Wiersma, 2000; Côté & Hay, 2002; Baker, 2003). This theory of sport expertise has raised a number of statistical, methodological and theoretical objections (Schneider, 1998; Singer & Janelle, 1999; Davids, 2000; Gagné, 2004). Specifically, the total number of hours of deliberate practice required to achieve excellence has been empirically refuted (van Rossum, 2000; Baker et al., 2003), and the extreme pro-environmental position is at odds with the substantial body of research demonstrating the existence of innate abilities (Fox et al., 1996; Maes et al., 1996; van Rossum & Gagné, 1994; Rankinen et al., 2004).

Applied talent detection programs like those undertaken by the AIS’ National Talent Search Program, aim to identify and develop potential elite athletes using a range of talent harvesting techniques. One such technique, ‘talent transfer’, is based on the philosophy and the observation that the skills and/or physical demands honed by athletes in one sport or discipline can be transferred to another. While it is recognised that there are donor and recipient sport limitations, common ‘sport switching’ examples include gymnasts transferring to diving or aerial skiing, and track sprinters transferring to bobsled. These talent transfer scenarios run counter to deliberate practice theory with the emphasis on late specialisation and the belief that expertise can be ‘fast-tracked’ via substantially reduced developmental time frames.

Observed Rates of Development in the Australian High Performance Sporting System

Recently, the National Talent Search Program investigated the developmental rates and pathways of Australian high performance athletes by asking them to look through the ‘rear-view mirror’.
That is, for athletes to recall the events, experiences and catalysts peculiar to their own talent development, with the aim of establishing a greater understanding of the process associated with the development of sporting expertise. A total of 673 scholarship holders (representing 34 sports) from the AIS and State Institute and Academies of Sport completed a retrospective questionnaire, detailing information about their unique developmental experiences (Oldenziel et al., 2003). Of these, 256 athletes had experienced elite level competition having represented Australia at senior level.

The frequency distribution of the number of years required from first ever experience in their scholarship sport to achieving senior national representation (i.e. expertise), revealed that 70% of athletes required less than 10 years to achieve expertise. However, 1 in 4 athletes (28%) had achieved national representation in ≤ 4 years. In comparison with those achieving expertise in 10 years or more, these ‘quick-developers’ were characterised by transferring relatively late into their scholarship sport (17.1 ± 4.5 years), had experienced a greater variety of sports before specialisation, commenced at higher levels of competition, and seldom oscillated between junior and senior competition pathways. Thus, for a large proportion of the Australian high performance sporting system, the 10 year developmental ‘rule of thumb’ does not apply, and furthermore, accelerated development can occur with late specialisation.

Women’s Skeleton: A Talent Transfer Case Study

An aggressive AIS talent transfer project is currently being conducted in the relatively unknown winter Olympic sport of Skeleton. Skeleton is an event held on the bobsled track, where competitors must push their sleds quickly for approximately 20 meters and then dive onto the sled head first. Depending on the specific track, the athlete will then be required to pilot the sled at high speeds through 14 to 18 curves over approximately 1.2 to 1.5 km, for a period of about 60 to 65 seconds. The theme of the project is to transfer those with natural sprint running ability into an event where explosive speed characteristics are desirable, but to also create an environment that will allow rapid learning of completely novel ice driving skills, and rapid adaptation to the unique characteristics of each track. An exciting aspect to the project is the absolute condition of novice status and the opportunity to minimise the interpretation of prior learning.

During the first season and only after four months, one of the transferring athletes won a major international race and placed 13th at Senior World Championships. In the second season, two athletes achieved multiple Top 5 results at the World Cup competition, and one athlete qualified and competed in the 2006 Torino Olympic Games. While type of sport and international depth of
competition are major factors in the ability to achieve rapid talent transfer results, why just deliberate on practice, when deliberate coaching, deliberate cohorts, deliberate programming, deliberate recovery, deliberate competition, deliberate funding, and deliberate support networks are just as critical to sporting achievement?

It is noteworthy that ambitious talent development projects such as these are unlikely to be undertaken by supporters of the deliberate practice doctrine, for it would represent the antithesis of their beliefs about the development of talent. Table 1 summarises the contrasting philosophies in relation to how one might achieve expertise in the sport of Skeleton.

Table 1: Contrasting approaches to the acquisition of sporting expertise

<table>
<thead>
<tr>
<th>Philosophy</th>
<th>Talent Transfer</th>
<th>Deliberate Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basis of talent</td>
<td>innate abilities</td>
<td>acquired by practice only</td>
</tr>
<tr>
<td>Available talent pool</td>
<td>highly limited</td>
<td>unlimited</td>
</tr>
<tr>
<td>Existing athletes</td>
<td>can be 'leap-frogged'</td>
<td>cannot be 'leap-frogged'</td>
</tr>
<tr>
<td>Prior sporting experiences</td>
<td>favoured</td>
<td>not favoured</td>
</tr>
<tr>
<td>Developmental time frames</td>
<td>short (e.g. 2 to 3 years)</td>
<td>long (i.e. 10+ years)</td>
</tr>
<tr>
<td>Competition commencement</td>
<td>senior level</td>
<td>junior level</td>
</tr>
<tr>
<td>Specialisation</td>
<td>late</td>
<td>early</td>
</tr>
<tr>
<td>Fast tracking</td>
<td>achievable</td>
<td>not achievable</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>important</td>
<td>not important</td>
</tr>
</tbody>
</table>
What does this research tell us about the development of elite athletes?

Experiences of a large cohort of elite Australian athletes demonstrate that the attainment of sporting expertise occurs in fewer years than is predicted by deliberate practice theory. There is substantial variability in rates of athletic development that are dependent upon age, prior sporting experience, individual circumstance, and the type and popularity of the sport. Multi-talented athletes can transfer skills and physiology to achieve sporting expertise in less than half of the time forecasted by the 10 year rule. Thus, future developmental ‘rules of thumb’ should be based on the variables emerging from evidence based research.

How can this information be used by elite coaches, athletes, and applied sports scientists to optimise training and performance?

Key sporting stakeholders ought not be limited by historical perspectives on talent development, but remain open to opportunities that can manipulate the talent development pathway. Long, repetitious training, and early specialisation are not mandatory conditions to achieve expertise. For many sports the available talent pool extends well beyond current memberships, with systematic approaches to identifying and developing talent providing the opportunity to access quality athletes. A key challenge for coaches will be the ability to deliver programs that are unique to cohorts arising from talent transfer scenarios. While the introduction of novel training techniques and technological advances will undoubtedly lead to optimised practice, perhaps the largest performance gains will be made by ensuring that athletes actually remain on a developmental pathway.

Do these research findings have any application to talent identification programs?

Facilitating late specialisation, talent transfer, or late developers is an important role to be provided by systematic talent detection programs. Presenting alternative entry (and exit) points within the talent development pathway, provides athletes with the options to overcome the debilitating effects of burnout, injury, or the plateaus in development. Future exploration into the developmental characteristics of the multi-talented and the optimisation of such attributes will deliver important advances in the talent detection area. So too will be the ability of coaches and sports to recognise they do not own talent but are temporary custodians only.

References


