

Servant or Service?

Preface

The following article/editorial is in response to the collective experiences of hundreds of strength and conditioning coaches around the world, but particularly in the U.S.A. The problem involves strength and conditioning coaches (SCCs) being placed in a subservient status to the sport coach with respect to decisions regarding physical preparation, potentially at the expense of the athlete. This practice often delivers suboptimal results and a toxic working environment. This is not a recent identification of a completely new problem. Indeed, various aspects of this problem have a long history of discussion. For example, Dan Wathen wrote about the perils of SCCs being hired by the sport coach in one of his presidential addresses to the NSCA nearly twenty years ago. Stone et al. (2004) discussed the state of sport science and its near absence in the USA 12 years ago. This year yet another discussion of SCC and related aspects of the basic problem has hit the internet:

<http://www.cbssports.com/collegefootball/writer/jon-solomon/25584164/marcus-lattimore-questions-quality-of-some-college-strength-coaches>

Although aspects of this problem have been discussed and argued about for at least 20 years, little positive headway has been made in providing a solution. There is some evidence the problem has worsened in the last few years. The authors believe that part of the reason for the lack of headway is that the problem, and its various aspects, has not been clearly defined nor have underlying mechanisms creating and driving the problem been elucidated. This article attempts to better define the problem, describe what the authors believe to be some of the reasons for the problem, and offer a conceptual solution.

Servant or Service?

The Problem and a Conceptual Solution

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The Problem and a Conceptual Solution

Abstract

Currently a disconnect between athletics and academics exists in many countries and especially in the United States' collegiate athletics system. This largely results from the absence of science/evidence based coaching and the absence of a mandatory formal sport coach education system. The sport coach is often perceived as "all knowing" about every facet of their sport when, in fact, they typically are not formally educated or well-trained in current methods of enhancing sport performance. Often strength and conditioning coaches, who may also be poorly trained, are tied directly (financially and administratively) to the sport coach—a situation which has led to a subservient role heavily influenced by the wishes of the sport coach. This has unfortunately resulted in the multidimensional well-being of the athlete clearly not being a primary objective in many programs. This is evident in several recent adverse events.

Conceptually, a resolution to this problem will entail a complete re-evaluation of the coach's (both strength and conditioning and sport coaches) role and responsibility and the development of sound educational programs with incentives for coach participation.

Keywords: strength and conditioning, coach education, NCAA, athlete development

Introduction

The purpose of this editorial is twofold: 1) it is an effort to shed light on what the authors believe to be a situation detrimental to the development of athletes, and 2) to present a conceptual solution to the problem. The collective professional experience of the authors is diverse, as it includes strength and conditioning coaches, researchers, sport coaches, and sport medicine personnel. While all of the authors have worked with club and collegiate athletes, several of the authors now work (or have previously worked) in other arenas as well—such as high school, professional sport, Olympic sport, and the military. Furthermore, the list of institutes and universities where the authors have worked span across a wide spectrum, including: universities and Olympic Sport Institutes in Great Britain and the USA, USA Division-II and Division-I (small private, mid-majors, and power 5). Regardless of differing individual experiences (school, conference, sport, etc.), major consensus exists amongst the authors that current hiring practices, as well as the process of maintaining employment, within strength and conditioning, especially the USA collegiate level, often fails to meet the standards commonly observed for other professions and may result in undesirable situations—particularly for athletes and strength and conditioning coaches. It is important to note that the opinions within this article demonstrate a common personal experience with an undesirable practice of marginalizing the expertise of the strength and conditioning coach within the overall athlete training process at many U.S. collegiate athletic departments. Indeed this problem is common worldwide. It is also important to note that excellent examples exist of collaboration and professionalism between administrators, sport coaching staff, strength and conditioning staff, and sport medicine staff—in both winning and losing programs. However, truly cooperative programs, especially as it concerns interactions between sport coaches and strength and conditioning staff, may be a less common situation than many outside of sport, particularly USA collegiate sports, are aware.

The Effect

“Strength and Conditioning professionals have placed themselves in a state of servitude by tying their employment status to sports coaches. Thus, to ensure their continued employment they have given up professionalism and do as instructed by the sport coach. Tradition gets in the way of good coaching and teaching.”

This quote from a National Collegiate Athletic Association (NCAA) Division-I (D-I) strength and conditioning coach (SCC) profoundly summarizes the current state of strength and conditioning within the United States, particularly among colleges. To date, almost every collegiate SCC ($n \approx 60$) with which the authors have discussed this issue has reported: 1) they experience(d) the same attitudes and behavior and 2) they know a SCC or graduate student who has quit the profession or changed their career plans as a result of consistent pressure from the sport coaches (in addition to athletic department administrators) to stray from modern training principles. This situation is similar, but perhaps more prevalent in nature to that often reported by sport medicine staff (Wolverton, 2013a; Wolverton, 2013b).

Although problems of head coach/strength coach interaction is an international quandary and spans a wide range of sports and levels, it is notable that the NCAA mandated, as of August 1, 2015, Proposal 2013-18 which states that weight-rooms, in the D-I collegiate setting, now be supervised by certified strength and conditioning professionals that have (and maintain) a certification through a nationally accredited strength and conditioning certification program. This proposal is defined as 1) accredited by a third party organization that accredits professional certification programs (e.g., National Commission for Certifying Agencies), 2) requires an undergraduate college degree, 3) requires a continuing education component, and 4) requires

current first aid, CPR, and AED certification. Currently only two U.S. associations fit this description: the National Strength and Conditioning Association's Certified Strength and Conditioning Specialist (CSCS) and the Collegiate Strength and Conditioning Coaches Association's Strength and Conditioning Coach Certified (CSCCa). However, most recently, the NCAA informed college compliance officers that each institution can determine what nationally accredited strength and conditioning certification programs best meet their institutional needs, indicating that the NCAA will not be an enforcement body for this legislation and they are only providing recommendations to institutions. It should be noted that the UK and Australia have similar but somewhat stronger recommendations concerning the accreditation of SCC's who work with non-professional and professional athletes in those countries.

Apparently, this NCAA proposal deals with liability and attempts to assure that the SCC has educational and practical training that ensures a reasonable knowledge of their profession. However, this proposal appears to ignore the realities of job requirements for the SCC. It is the authors' contention that collegiate SCCs are largely being hired for their willingness to comply with the wishes of the head sports coach more than for their knowledge and experience of good strength and conditioning practices. Indeed, this current situation brings into question the ethics of the best hiring practices by athletic departments and the primary responsibility of strength and conditioning coaches.

Job performance evaluation of the SCC is frequently tied to a sport coach's won-loss record or a history of complying with whims of the sport coach. It is the opinion of the authors that the SCC's performance should be based primarily on whether or not they can deliver athletes that are better prepared for sport. This would include appropriate gains in strength, rate of force development, power output, agility, endurance, etc., commensurate with sport requirements.

Additionally they should be judged on whether they can deliver regular and substantial monitoring information to the sport coaches so they can make realistic judgments concerning practice and competition, and work seamlessly with sport coaches and sport medicine personnel to prevent injuries and help athletes recover from injury. Furthermore, part of the SCC's responsibility should be to help the sport coaches ascertain potential reasons for athlete performance fluctuation levels and underlying causes for won-loss records.

Interestingly, our perceptions and experience and that of most SCCs whom the authors have discussed this issue with are: 1) the strength and conditioning coach is rarely credited with assisting in the creation of a winning season, 2) the strength and conditioning coach is often blamed for a losing season, and 3) if injuries occur it is often attributed to something taking place in the weight room. Furthermore, these allegations (stemming from personal experiences, informal interviews with SSCs and the authors perceptions) are usually made with little or no accompanying evidence, often in the face of contradicting evidence provided by the strength and conditioning staff, as to the efficacy of the strength and conditioning program. Subjective claims about an inability to produce toughness in athletes often precede the firing of a strength coach. It is also common for sport coaches and administrators to ignore the reality that coach-athlete interaction, sport practice volume, or other stressors may play a role in bringing about injury and decreased performance, instead crediting incidences of injury and poor performance to strength training alone.

The Cause: A Disconnection

Athletics is an important and a valuable factor in the overall nature and culture of most countries and especially for USA colleges and universities. The United States of America (USA) is the

only country that hosts major sports and sporting events at institutions of higher learning. This, in itself, should not be that controversial as it reflects the idea of *mens sana in corpore sano*—a sound mind in a sound body. This philosophical concept implies that athletics and academics go hand-in-hand. However, it is quite debatable as to the degree that this concept is encouraged or even occurs in high school or particularly in collegiate sports (Baker, 2013; Branch, 2011; Durrell, Pujol, & Barnes, 2003). The authors argue that the general perception among the populace is that athletics, particularly American football and basketball, and academics are not compatible and are, in reality, two separate entities within the Collegiate System. Casual and informal discussions with faculty members suggest a belief that sports are not really a part of the academic culture of the university and that, perhaps stereotypically, coaches are generally not interested in intellectual and scholarly pursuits compared to most faculty. Recent cases of academic fraud among athletes, administrators and academic departments at major universities (Ganim & Sayers, 2014) and increased expenditures on athletics while academics suffer (Salzburg, 2012; Salzburg, 2015) provide additional evidence for this view.

It is the authors' belief that there is some truth to this viewpoint. At least part of the reason for our opinion deals with the formal education and training of coaches in the USA (Salzburg, 2014). Formal instruction deals with higher education courses and large-scale coach certification programs developed by national governing bodies (Cushion et al., 2010; Nelson et al., 2006). Formal learning environments are chronologically graded and have a hierarchically structured educational system (Nelson, et al. 2006). Nonformal learning has been defined as any organized, systematic educational program outside of the formal system to provide select types of training to particular subgroups in the population, such as the NSCA or UKSCA (Cushion et al. 2010). Informal learning typically deals with semi-structured or non-structured direct interaction with

athletes or coaches, including apprenticeships and internships (Cushion et al. 2010.) In the past, there has been little or no formal U.S. coach education program that adequately addresses the needs of coaches (Cushion et al. 2010; Kimiecik, 1988; Chiu, 2010; Sellers & Stone, 2005; Stone et al. 2004). Although some progress has been made in recent years, formal coach education programs and to some extent non-formal programs are largely deficient in a variety of factors including construction of the training process, monitoring programs, strength and conditioning principles, and how to understand and interpret research (Cushion et al. 2010; Reade et al. 2008; Durrell et al., 2003; Sellers & Stone, 2005). It is unknown as to what degree informal coach education fills this void (Cushion et al., 2010).

Furthermore, most coach education programs in the USA have been geared primarily toward participation rather than performance. Based on survey data, coaches (including SCCs) largely rely on sources of information that may not be defined as scientific, as evidenced by the low priority given to peer-reviewed literature and formal education (Durrell et al. 2003; Reade et al. 2008). Survey respondents indicated that they tended to employ the methods used on them while they were athletes or they learned as graduate assistants (Durrell et al., 2003). U.S. coaches (as with some other countries) rely upon an apprentice type program and work their way through the ranks; a situation much like the medical profession before the advent of the Flexner report (Flexner, 1910). Reliance on these sources and apprentice-type programs assuredly do not take advantage of advances made through scientific research in sport physiology, biomechanics, and, more specifically, the area of strength and conditioning (Durrell et al., 2003). Additionally, some coaches reject and even disdain formal learning environments (Cushion et al. 2010; Somerset, 2011) and even advocate or are encouraged not to read about or use evidence based training methods as “science has little to offer” or “science has not caught up with what we do yet”. It

may be argued that the lack of scientific background, scientific knowledge, and the lack of interest displayed by many coaches concerning sport science has helped to create the current disconnect between coaches and the academic-scientific world. This disconnection is not reflected to the same extent in other countries. Conversely, cooperative academic/sport-science/coaching efforts are much more the norm in many countries such as Germany, Finland, and Australia (Bishop et al. 2006; Bishop, 2008; Bloomfield, 2002; International Council for Coaching Excellence, 2013; Stone et al. 2004). It is paramount to note that evidence-based training entails two important aspects:

1. An ability to find, read, and critically analyze scientific and coaching literature in order to ascertain which modes and methods are likely to produce the most valuable and useful training outcomes. Although coaching literature is available, it is arguable as to the extent to which most of this literature reflects valid and reliable scientific information leading to best practice.
2. Development and initiation of a sound monitoring program.

In most university athletic departments a coach's worth is typically assessed by their won-loss record or, in some sports such as track and field, by their ability to improve the competitive rank of the athletes under their supervision (Cote, Young, North, & Duff, 2007) and the SCC's worth is often associated with that sports won-loss record. This method of assessment is commonly referred to as "Performance-Based" coaching where an improvement in the competitive arena largely determines the success of the program and serves as validation of the training practices used along the way. However, in reality, this assessment method is *largely* a "black-box" approach in which the input is the finish from last year(s) and the output is the finish from this year (DeWeese, Gray, Sams, Scruggs, & Serrano, 2013). It is our contention (and to instill the

idea) that the coach is responsible for more than simply a won-loss record. The coach is responsible for the multidimensional well-being of the athlete, which, in part, includes their athletic development, and a *process* designed to accomplish goals. The adoption of the black-box method often provides coaches with a false sense of security as to their training methods and strategies. Clearly, the improvement in athletic performance resulting from the training program cannot be readily separated from multiple confounding factors such as the athlete's genetics, maturation, work ethic, a decrease in external stressors or a decrease/increase in the level of competition. As a result, it is unclear whether the athlete actually realized an improved well-being resulting from physical and physiological adaptations or realized their true competitive abilities, as the training program was likely never optimized. In contrast, by using a "white-box" approach a coach can better ascertain the adaptive level of their athletes and increase their insight and understanding of the training process (DeWeese, Gray, Sams, Scruggs, & Serrano, 2013). Within this context, the coach understands the input (preseason rank) and output (postseason rank), but through appropriate monitoring they begin to understand the team's and the individual athlete's performances, physiological and psychological responses, and adaptations to training. Thus the input/output can be expanded from simple rank and a few largely subjective factors to a multifaceted input/output consisting of a number of different environmental, physical, physiological, and psychological variables allowing a more complete assessment of the training process. This ongoing reflective process should be part of the evidence-based approach. This allows the coach to be equipped with objective, reliable feedback that can demonstrate the training process effectiveness and more readily ensure athlete preparedness.

Thus, the overall goal of an evidence-based approach is to 1) acquire an understanding of the scientific literature, 2) be able to apply those findings, and to 3) acquire periodic snapshots of an

athlete's adaptations to training which are accurate and reliable. In turn, the coaching staff and support network may apply these findings to future program development. In short, this can be considered the act of optimizing training choices and the training process in order to meet the needs of the individual athlete as well as the group. It is the SCC that is formally trained and educated (or should be) in this evidence-based approach to training and it is our hope that the sport coach will appreciate and value this knowledge and experience and find the well-trained SCC an integral part of a successful sport program.

Additionally, in the USA more so than in many other countries, the Head Sport Coach (HSC) has nearly unlimited authority to conduct training, practice, and competitions as they see fit. The rationale behind this designated power is that the HSC is responsible and held accountable for the won-loss record of the sport and so should be able to make their own decisions (right or wrong) and pilot their own destiny. This often includes making the final decision concerning training practices such as the type of strength training program, what exercises should be performed, how these exercises should be performed, and decisions concerning other types of conditioning (e.g. sprints, distance running, agility, etc.). At first glance the creation of an "all-powerful" coach seems reasonable as decisions concerning the sport affect their livelihood. However, this also assumes that the coach is all knowing or has the resources, education, and wisdom to make appropriate choices. As the HSC is not typically trained or educated in all facets of sport preparedness, a further disconnect between the HSC and the strength and conditioning staff can be created. From the authors' prospective this rationale is both illogical and inefficient. Consider: while the HSC has some training and experience in the concepts and subtleties of the sport—particularly as it relates to technique and tactics—holistically they are typically untrained or poorly trained in evidence-based strength and conditioning methods and have limited

experience in training athletes. Often sport coaches either overrule the SCC or simply conduct training on their own without notifying the SCC (Massey, Vincent, & Maneval, 2004; Massey & Vincent, 2013). The end product is a poorly integrated training program, in which various types of conditioning and practice are not linked together in the most efficient or progressive manner—thereby reducing the efficacy of the entire program. In fact, instead of playing an integral part in designing the training process, the SCC is often reduced to a role of “damage control” in modifying the planned workout due to fatigue or the enforcer of punishment as a result of spontaneous independent training decisions of the sport coach. This type of approach not only can reduce the performance potential of the athlete, but expose them to an increased injury potential. Recent adverse events at universities in Iowa and Ohio demonstrate the hazards of allowing the sport coach or poorly trained coaches to have the final word in training policy—athletes have been exposed to potentially serious injury as a result of an ill-considered approach to training (Jones, 2014; Whitosky, 2014). Situations where the SCC is implementing a “damage control” strategy or where athletes have been injured based on the chronically excessive training demands of a sport coach are all-too-common examples of a toxic environment most frequently brought on by whims of the sport coach. It has been demonstrated that an approach to training emphasizing progression and quality, in which exercise technique, strength gain, and fatigue management are emphasized, can maintain or increase the won/loss ratio and decrease the injury rate among NCAA mid-major D-I collegiate athletes (MacDonald, Gentles, Sato, & Stone, 2013; Sole, Kavanaugh, Sands, Reed, & Stone, 2014). One mission and goal of a good coach education and sport science program should be to provide sports with well-trained SSCs who have a scientific background and good sport scientists with a hands-on background. It is our opinion that all coaches should have a minimum level of education regarding sport science, not simply

exercise science or a non-related degree (Stone et al. 2004), so they have a basic understanding of the training process. This will enable the sport coach to understand what SCCs are doing with their team's training. We believe this approach would enable an optimal sport coach-SSC interaction.

The situation in coaching presently can be shown to be somewhat analogous to the medical profession in the USA before 1910. Before the Flexner report (Flexner, 1910) was published, medical schools had few common standards; almost all were proprietary and affiliated with no university. Most schools graduated classes in 2 years (or less). Classes were often taught by part-time, often poorly trained faculty, and in some areas of the USA (and Canada) one could become a practicing physician simply by serving an apprenticeship. Furthermore, it was noted that the medical school faculty were rarely in charge of any clinical/practical experience; this was largely handled by local hospitals and their staff (also poorly trained) and often was an observational experience as opposed to being hands-on.

Presently, a good medical doctor goes to an accredited medical school and acquires a scientific background as well as supervised practical experience so that they can better practice the art of medicine. Most people today would be very reluctant to go to a physician that had not attended medical school and developed a scientific background. However, this does not appear to be the case for coaching. Considering the responsibilities of coaching concerning athlete performance enhancement and general well-being, it would seem logical that a coach would attend school to acquire appropriate job-related knowledge and a well-supervised practical experience so they can better practice the art of coaching. However, the observations of the authors and many others (Durrell et al., 2003; Reveter-Masia et al., 2009; Sellers & Stone, 2005) have not supported this idea. Indeed in the USA and many other countries, coach education (including some SCC

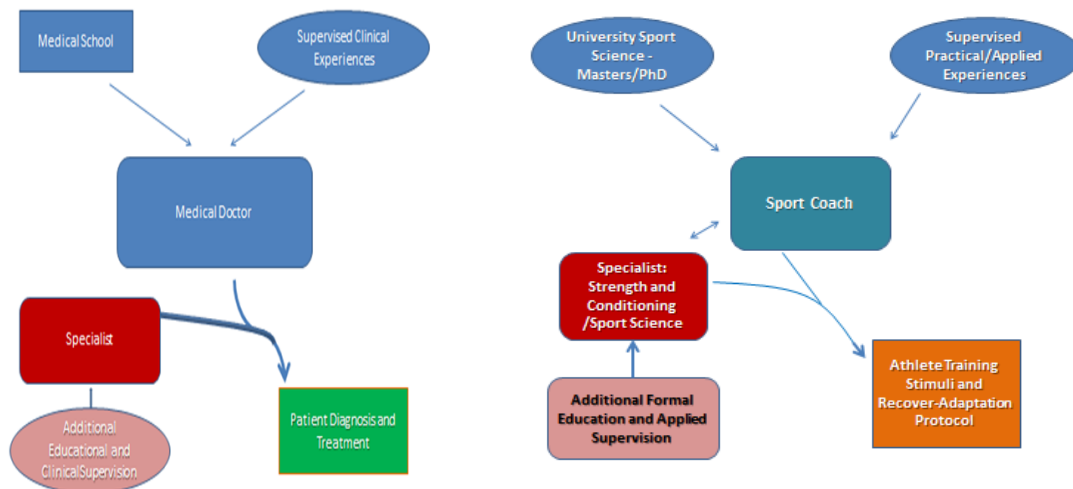
educational material) with a scientific underpinning and the use of evidence-based training methods has unfortunately become uncommon. Additionally, it has been argued that SCCs use much more modern and scientifically based methods of training than was apparent 10-15 years ago; however it should be noted that simply stating that one uses a specific method or technique on a survey does not mean that specific method or technique is appropriately implemented and developed (Authors observations, Reveter-Masia, 2009).

A Conceptual Solution

It is our opinion(s) that integrated athletic and academic programs (sport science) should be creatively designed to address this disconnect and further develop appropriate systems of athlete development in the collegiate environment. Unique to this arrangement would be the integration of academic programming in sport science, along with opportunity to work directly with sport teams in terms of sport science and strength and conditioning. Thus, as with the medical profession, a sound scientific/academic background is coupled with practical application in a hands-on manner. Therefore a result of this program would be the development of SCC and sport coaches that are better trained and have a better potential for success than SCCs and sport coaches of the past.

The authors suggest the following as logical and unique resolutions to this problem:

The authors believe that coaches, particularly the SCC, should strive to become better educated as coaches. The authors offer the following paradigms as logical steps to enter the coaching profession.



Paradigm 1: Medical Doctor and Specialist. Paradigm 2: Sport Coach and specialist (Strength Coach/Sport Scientists).

In the USA medical doctors are currently well-trained in their profession. However, family practice physicians often defer to a specialist (MDs with additional specialized training, PhD nutritionist, etc.) when confronted with difficult diagnoses or conditions beyond their training. The authors believe that coaching should adopt a similar model in which the SCC represents the specialist in physical performance matters. Fundamentally, strength coaches should be trained such that they are coach-sport scientists, and in most cases the sport coach should defer physical conditioning to the SCC. This is not unlike many coaching models being used in parts of Europe (ICCE, 2013). Most assuredly the rest of the world is recognizing the responsibility that coaches have to consistently expand their capabilities in order to more fully meet the needs of the athletes they serve. “Athlete Centered Coaching” is a concept that describes and highlights the coaches’ responsibilities to the athlete (Cote & Gilbert, 2009; ICCE, 2013). These responsibilities deal with the well-being of the athlete which includes assisting the athlete to achieve the highest possible performance, offering training programs that are efficient, efficacious, and (within the

bounds of the sport) not overly injurious. Most importantly, the concept of "Athlete Centered Coaching" indicates a commitment by the coach to lifelong education and learning. This concept also emphasizes the responsibility of sport/coaching organizations, including university athletic departments, to ensure that educational commitment—formal, non-formal and informal—takes place (Cote & Gilbert, 2009; ICCE, 2013; South African Sports Confederation and Olympic Committee, 2012).

Thus, academics (sport science departments) and athletics should work together in formulating the creation of educational/practical experiences for the development of coaches. Indeed, regular educational meetings should be encouraged between the two programs, which could foster cooperative programs. These opportunities should support the roles served and capabilities within each department to ensure understanding of the system in place at the university, allowing further best-practices to develop by assigning highly qualified people to solve relevant problems.

Summary

There is currently a profound disconnect between athletics and academics, especially as it concerns the use of sport science. The disconnect results from years of tradition in which evidence-based coaching has been largely absent and even criticized, particularly among strength and conditioning coaches. The result of this disconnection has been: 1) the notion that the sport coach is perceived as “all knowing” about every facet of their sport when, in fact, they typically are not formally educated or well-trained as coaches in all facets of performance enhancement, 2) often SCCs are tied directly (both financially and administratively) to the sport coach, which has led to a subservient role dictated by the wishes of the HSC, 3) as a result of the subservient

role that the SSC often assumes, evidence based training is often replaced with sport coach controlled/influenced training that may not optimize performance and can carry a high injury potential and, 4) this has unfortunately resulted in the well-being of the athlete not being the primary objective. Conceptually, a resolution to this problem will entail a complete re-evaluation of the coach's role and responsibility (both SCC and sport coaches) and development of sound educational programs with incentives for coach participation. The authors believe that the SCC should be well educated and trained, hired separately by the athletic director, be evaluated using a different set of criteria than the sport coach, and not be directly supervised by the sport coach. This does not mean that there is no integration with the sport coaches but rather the SSC should be viewed as a specialist in their field—a trusted agent providing progressive, high teaching quality, evidence-based training programs in a positive, integrated environment with sport coaches. SCCs should be enabled to provide an unshackled athlete development service.

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