

The Five Minds of the Modern Strength and Conditioning Coach

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One of the key decisions made at the development of the UKSCA's accreditation process was the title of the accredited status the qualification afforded its members. The letters ASCC, Accredited Strength and Conditioning Coach, emphasise the role of the coaching process in the direct delivery of strength and conditioning. This is in contrast to other accreditations such as the CSCS where the role is seen as a strength and conditioning specialist, emphasising a person who possesses a body of strength and conditioning knowledge and not necessarily emphasising the application skills. While at first appearing nothing more than a semantic difference, it represents an important shift in emphasis from knowledge, towards the application of knowledge, and the importance of the entire coaching process to the effective delivery of strength and conditioning. This necessarily requires the development of skills associated with the coaching process, in addition to developing an appropriate body of knowledge. However, this trend is not seen in the strength and conditioning literature. So, while practices and methods are frequently discussed and researched, the coaching process is largely overlooked. In reality, it may be impossible to differentiate the means and methods utilised from the way in which they are delivered. The coaching process will have an important impact on the delivery of strength and conditioning, as well as on the way in which it is perceived and received by the athlete. Indeed, it is highly likely that this coach/athlete interaction will affect the productivity of any training programme. This necessitates a closer examination on the types of skills and traits that contribute to effective coaching in a strength and conditioning setting.

It is therefore important to ascertain what makes an effective coach in the strength and conditioning environment. Is it simply the degree of specialised knowledge, the extent of teaching skills, or a complex mix of a wide range of factors, encompassing a wide range of competencies? Eminent Harvard Professor of Cognition and Education, Howard Gardner, in his book *Five Minds for the Future*,⁵ outlines five key areas of intelligence that, he claims, will affect the capacity of individuals to achieve consistent success in a range of professions. He asserts that these five minds are at a premium in today's world, and suggests that their importance will increase into the future.

This article aims to extrapolate these 5 minds to the profession of strength and conditioning coaching, and to identify how these minds could impact upon coaching effectiveness. These can potentially provide a framework through which coaches can assess their own effectiveness, and which, in turn, can lead to targeted planning of professional development. Given the lack of empirical research in this area within the strength and conditioning profession, the article will, by necessity, attempt to synthesise information from a range of sources, and suggest their application to the strength and conditioning field. The aim is to produce an article that will generate discussion, while at the same time attempting to produce a multi-dimensional view of the profession, from which coaching effectiveness can be evaluated, possibly generating new approaches and solutions.

What is Coaching?

Prior to discussing the 5 minds of the effective coach, it is imperative that the role of the coach be closely examined. However, little literature exists which examines coaching in a strength and conditioning context. This necessitates an examination of coaching in general, and requires the extrapolation of this information to the strength and conditioning



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context. The main objective of a coach is to improve performance.¹³ This would appear to be especially the case for the strength and conditioning coach, where direct assessment of performance plays an integral role in determining the effectiveness of work. Whitmore¹³ asserts that, "if either the quality of a performance or learning from the experience is important, then coaching is a must, it being a tool for optimising people's potential or performance". As both quality of performance and learning are key outcomes for a strength and conditioning coach, then it would seem logical that coaching will play a key role in determining the ultimate success of any programme. However, within the strength and conditioning profession it can be argued that the coaching process is often overlooked, and the focus placed solely on the means and methods of training utilised. This is evidenced by the dearth of information on this topic in the journals and conferences associated with the profession. It is unlikely that the success of any programme can be separated from the way in which it is delivered. If this is the case, then an analysis of the coaching process, together with the training environment in which the programme is delivered needs to be carried out. These provide areas by which overall practice can be improved.

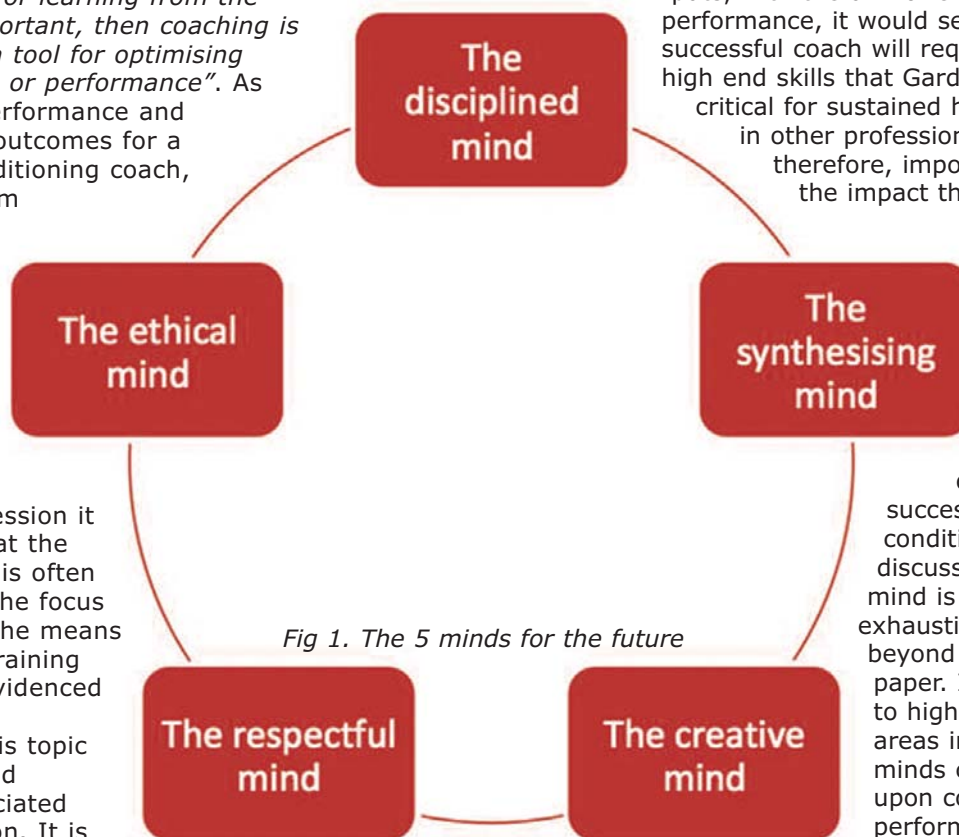
The five minds for the future

Gardner⁵ asserts that continued success in the modern world will require ability in 5 key areas of functioning. These are summarised in Figure 1 and described below.

1. The disciplined mind has mastered at least one way of thinking, with a discipline being a distinctive mode of cognition that characterises a specific scholarly discipline, craft or profession.⁵
2. The synthesising mind has the ability to take information from a range of disparate sources and through objective understanding and evaluation, put this together in a way that can be understood by both themselves and other people.⁵
3. The creative mind builds upon synthesis and discipline to break new ground, put forth new ideas, produce new ways of thinking, and pose unfamiliar questions.⁵
4. The respectful mind involves the ability to understand and work well with others.⁵
5. The ethical mind works on a more abstract level to the respectful mind, and examines the nature of the work within the context of society, ensuring that work serves purposes beyond self interest and works to the furtherance of the greater good.⁵

The application of the five minds

Gardner's work purports the value of these minds to society and professional competence in general, and does not necessarily relate these to coaching. However, as coaching involves the direct application of a range of inputs, with the aim of enhancing human performance, it would seem logical that a successful coach will require these similar high end skills that Gardner sees as critical for sustained high performance in other professions. It is therefore, important to examine the impact that the five minds could potentially have on coaching performance, in order to objectively assess the role each will play in developing a successful strength and conditioning coach. The discussion within each mind is not meant to be exhaustive, as this is beyond the scope of this paper. Instead, it aims to highlight potential areas in which these minds could impact upon coaching performance. Readers are encouraged to further explore potential areas of development of these themes.



The disciplined mind

A discipline constitutes a distinctive way of thinking, rather than being merely subject matter. Science is perhaps the discipline most strongly associated with strength and conditioning. Science develops the skills of designing experiments to test concepts and theories, together with the skills to evaluate data to draw conclusions. Strength and Conditioning has undoubtedly progressed immensely in the last few decades due to the proliferation in scientific research into the means and methods of strength and conditioning application. This has allowed the emergence of evidence based practice as the key tenet underpinning the profession. However, while science provides the basis upon which practices are based, it is also important to remember that scientists also realise that scientific theories are subject to being overthrown as new data becomes available. This requires that strength and conditioning coaches are able to adapt their methods as new evidence becomes available. Amen,¹ suggests that truth goes through three stages: first it is ridiculed, second it is vehemently denied and third it is accepted as self evident. In this way, it must always be remembered that knowledge is never static or complete, and this requires a dedication to professional development, in a constant attempt to master the discipline. Without scientific method, coaches would not be able to make reasonable training decisions when faced with a set of options. Similarly,

“The main objective of a coach is to improve performance”



they would be unable to evaluate between the numerous options that present themselves at every level of programme planning and design. It is likely that coaches without the required disciplinary skills will be unable to differentiate the quality of information, and will be easy game for charlatans and demagogues.⁵

One challenge for the strength and conditioning profession is the wide range of subject areas (domains) within the scientific discipline that have the capacity to impact upon athletic performance. Examination of the areas of professional competency documents of the UKSCA and NSCA for example, demonstrate that even within the scientific discipline, a wide range of knowledge areas are required. These competency documents assert that a strength and conditioning coach will need knowledge in domains such as physiology, biomechanics, and psychology, and across a wide range of topic areas within these domains. In developing this knowledge, the coach probably needs to make a decision as to the type of knowledge they are aiming at developing within this disciplinary mastery. Laser intelligence probes deeply into a topic, but ignores opportunities to cross pollinate.⁵

Searchlight intelligence, on the other hand, scans the whole environment but does not probe as deeply.⁵ This type of intelligence may more readily discern connections or differences between spheres. While academic study tends to promote laser intelligence, with study of increasing depth into a relatively limited range of topics, coaching prowess may require a more searchlight intelligence, requiring the ability to synthesise information from a range of domains into a coherent whole. This will clearly affect the type of study and professional development strength and conditioning coaches will need to take to master their discipline, a process which Gardner⁵ suggests will take at least 12 years, if not considerably longer.

While a scientifically disciplined mind would appear to be crucial to a strength and conditioning coach, science is not the only, and not even the only important area of knowledge.⁵ Science can never tell you what to do in a given situation. Actions will ultimately be determined by a coach's value systems, and neither science, nor technology, have built in value systems.⁵ This requires that a coach has access to other disciplinary skills with which to evaluate different plans of action. Indeed, no one topic can be fully mastered from a single

disciplinary perspective. By having multidisciplinary skills, a coach can use multiple tools to solve any given problem, and must never be restrained by viewing an issue from a single disciplinary standpoint. Einstein, for example, famously quoted that *"not everything that counts can be counted, and not everything that can be counted counts"*, reflecting the need for a multi-disciplinary approach in solving training problems. Philosophical mastery for example provides the wisdom to make decisions based on a wide range of information, and based on the precise requirement of a given situation. As the famous Chinese proverb says, a person of *"good sense, needs no detailed explanation, a resonant drum needs no heavy beating"*. This reflects the fact that methods should always be thought of as tools and not chains⁵ and as coaches, we often need the flexibility to deploy our methods as best befits the situation, rather than simply deploy the same solution to every situation.

Given that coaching necessarily involves human interaction and the development of skills, a domain unusually missing from the strength and conditioning literature is that of pedagogy. This is especially pertinent, as many great sports coaches see themselves primarily as teachers.^{12,15,16} Indeed, it could be argued that amongst experienced coaches in sport there is little difference in their technical knowledge and much of the time, the difference comes down to the ability to be an effective teacher.¹⁶ As legendary basketball coach John Wooden¹⁵ points out, *"I am a believer in the laws of learning: explanation, demonstration, imitation, correction when necessary and repetition"*. He points out that *"the coaching graveyard is full of failed teams whose leaders were very well informed, but could not teach to save their souls"*. He stresses that it is important not to equate professional knowledge with the ability to teach it. Knowledge, in itself, is of little use unless it can be utilised to achieve a specific goal and that, in ongoing efforts to increase knowledge within a profession, it is important that coaches not overlook improving their ability to be a better teacher.¹⁶ In strength and conditioning, pedagogical skills will clearly play a part in the success of a programme, success that cannot be solely down to the programme itself. However, this domain is often missing from many strength and conditioning education programmes.

Disciplinary mastery clearly takes a great deal of time

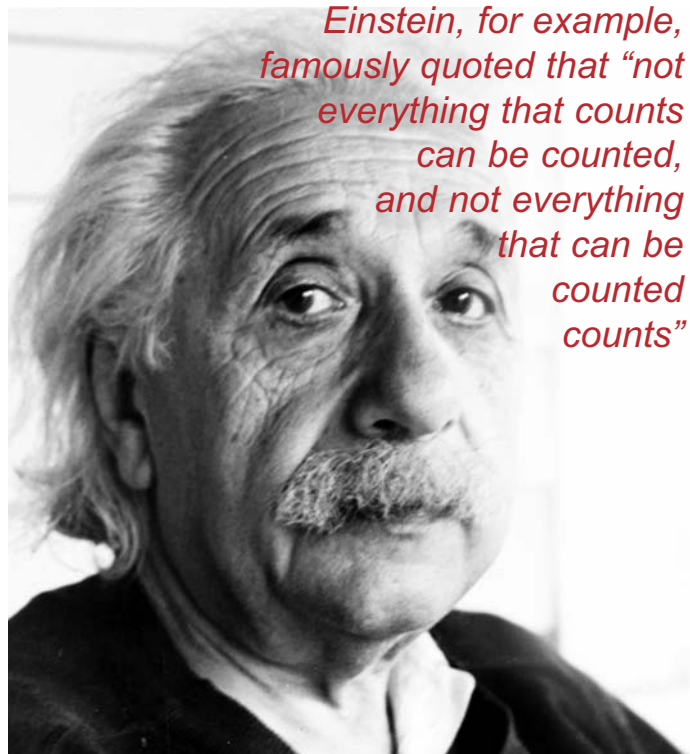
and hard work to achieve, and requires a lifelong dedication to professional development, and consists of more than knowledge. Indeed, information must not be an end in itself, or as a stepping stone to more advanced types of information, but rather as a means to better informed practice.⁵ Professional accreditation, for example, should only be seen as a start to the process of becoming an effective coach not as a destination. As John Wooden,¹⁵ famously quoted, "it's what you learn after you know it all that counts". This is especially important as a coach progresses within an organisation. As a coach assumes ever higher roles, the more essential it is to continue education, to increase the disciplinary knowledge, and develop higher levels of understanding. Only in this way can coaches effectively lead the coaches under their tutelage, and the athletes they are responsible for.

The synthesising mind

Gardner⁵ claims that, "the amount of accumulated knowledge is reportedly doubling every two or three years". While sources of information are vast and disparate, individuals crave coherence and integration, providing a basis for the effective application of this knowledge. Given this, the mind that can synthesise will be at a premium in the future. In this way, the ability to knit together information from disparate sources into a coherent whole is vital and integration can yield understanding that could not have been achieved solely within any parent discipline.⁵ Individuals without synthesising capabilities will be overwhelmed by information and unable to make judicious decisions about professional matters.

However, Gardner⁵ asserts that individual cognition is remarkably domain specific, and we are predisposed to learn skills in certain contexts and to resist their wider generalisation and broader application. We have a propensity to acquire actions, thoughts and skills in one situation, and while we may master these, they tend to remain focussed in one setting. Academic study, with its greater specialisation as a student progresses, probably contributes to this domain specificity, and reduces the potential for cross fertilisation of ideas from different disciplines and domains. This will, in turn, limit creativity, and the generation of new answers to training questions, and result in many potential lost opportunities to improve practice.

One of the great skills of the synthesiser is to create simplicity out of complexity, as French author CW Ceran suggests, "genius is the ability to reduce the complicated to the simple". However, do we value or promote this ability? Noted businessman and investor Warren Buffet asserts that Business Schools reward difficult complex behaviour more than simple behaviour, but simple behaviour is more effective. This is often similar for the academic study of strength and conditioning, where complexity is often rewarded over simple solutions to training problems. However, research into business success has revealed that the characteristic that differentiated the successful companies from the unsuccessful was simplicity. Could this be the same for effective sports organisations? Simple, focussed operations often bring greater results, allowing all participants to be fully cognisant with the aims of the programmes and the methods by which these will be achieved. This is not to suggest that advances in knowledge of training methods should not be utilised, indeed they should, but what is critical is



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how they are synthesised within the overall structure of the organisation and its delivery of the strength and conditioning product, together with the perception of the product by the end user.

It is likely that in the strength and conditioning profession, the ability to synthesise elements from a wide range of domains will be critical. This will be facilitated by searchlight intelligence, which in turn can be enhanced through consultation with individuals who possess the laser intelligence into areas of concern. In reality, it is likely that some syntheses will be straightforward; some will involve a stretch of one sort; perhaps the most precious ones will involve a creative leap, which will require the creative mind.⁵

The creative mind

How often in the last week, month or year, have we come up with a unique solution to a given problem, utilised a new exercise, coached the same exercise in a different way, or attempted anything creative in our work? Legendary New England Patriots Coach Bill Belichick⁸ stresses this need for innovation, stating that you've got to keep doing what you're doing, but you've got to find different ways of doing it, and finding ways of making it fun. American psychologist William James suggests that genius is little more than "the faculty of perceiving in an un-habitual way", yet do we consistently look at new solutions to our training problems or simply assume that we already have all of the answers? One of the reasons often given for not trying new solutions is criticism from others, yet as Aristotle states; criticism is something you can avoid easily – by saying nothing, doing nothing and being nothing. It can be said that wisdom comes from experience, and dramatist and author William Saroyan suggests that "good people are good because they have come to wisdom through failure – we get very little wisdom from success".

However creativity can be a challenge, as people only see what they are prepared to see, and the human brain is amazingly good at seeing what it wants to

observe.¹⁴ As British Scientist John Lubbock points out, "what we see depends on what we look for", and the creative mind can provide for the effective germination of unique solutions to strength and conditioning challenges. A problem is that, once a brain looks at something in a certain way, it finds it difficult to see things from any other perspective.¹⁴ Looking at something in a different way will require the toleration of a certain degree of uncertainty, which can be a challenge for many individuals, but which is essential if creative ideas are to flourish.

How then does the synthesiser differ from the creator? The synthesiser's goal is to place what has already been established in as useful and illuminating a form as possible. The creator's goal is to "extend knowledge, to ruffle the contours of a genre, to guide a new set of directions along new and hitherto unanticipated directions".⁵ The synthesiser seeks order, equilibrium, closure; the creator is motivated by uncertainty, surprise, continual challenge and disequilibrium.⁵ This stresses the fact that the five minds should be seen as complementary, rather than as distinct areas of competence. Both synthesis and creativity for example require a baseline of literacy and discipline, however conversely, too strict an adherence to a disciplinary track operates against the more open stances of the synthesiser or creator.⁵ While creativity is to be encouraged, it is important to remember that creativity is not simply randomly attempting radical solutions, instead it requires attention to all of the other minds. The would be creator, has an obligation to be scrupulous in the completion and validation of work.⁵ Albert Einstein once commented, "I am neither especially clever nor especially gifted. I am only very, very curious". This stresses the importance of questioning and the continual hunt for answers within all professions. Creativity will always be a chancy undertaking that can never be guaranteed, only fostered or thwarted. Cooper² suggests that the greatest learning and achievements come not from standardised group work but from the unique efforts of individuals, and coach's can therefore develop creative solutions within their own work. This provides an opportunity for all strength and conditioning coaches to contribute to the development of the profession through their own creative activities.

The respectful mind

A classic example of the difference between a strength and conditioning specialist in an academic environment and a practicing strength and conditioning coach, is in the area of planning and periodisation. Undoubtedly, periodised training plans provide the structure for effective training programmes, and lie at the heart of the work of a strength and conditioning coach. However, while in an academic environment, the plan is assessed on its own merits; for a coach, plans are merely a starting point. As John Wooden¹⁶ points out "the much more difficult task is to create an environment, a way of thinking, a set of beliefs that ultimately get everyone working eagerly and to the best of their ability to make those plans result in a winning programme". Most coaches would agree that the exact same plans will have differing effectiveness in differing coaching situations. For example, does the training of the most successful football teams differ that greatly than those of the not so successful? Or does it lie in the execution, the way the plan is presented by the coach, and accepted and adhered to

by the athletes? Here the application of pedagogical skills for example becomes crucial, but interestingly is never reported in scientific strength and conditioning journals where the programme itself is considered the sole independent variable. In sports it is easy to become consumed with the X's and O's, or in strength and conditioning on the loads, sets and reps. What is often harder is the ability to execute these plans in a manner that delivers consistent success.

The long term success of any programme will depend upon the coach/athlete interaction and not just the programme itself. We have all probably worked with coaches who inspired us to efforts we thought previously unattainable, but may also have worked with coaches who didn't provide the same inspiration. It is likely that the differences in these situations reflected a large number of factors, and not simply the programme itself. The knowledge of the coach cannot guarantee success. In reports on studies determining why smart people fail,⁹ the greatest problems professionals have don't relate to their competencies; they relate to their relationships. Here, the skills associated with building effective working relationships are crucial, and reflect the importance of the respectful mind. Goleman⁶ suggests that in today's climate, emotional intelligence is as important as IQ in determining the most successful individuals. While not aiming to replace traditional intelligence, emotional intelligence characteristic such as self awareness, self regulation, social awareness, and social regulation, can contribute to the development of effective coaching relationships, which can contribute to the long term effectiveness of the strength and conditioning coach. Strength and Conditioning coaches will, on a day to day basis, be leading, managing, influencing, persuading, motivating their programme and the coaches and athletes working within it. These are all skills that require mastery of the respectful mind. Leadership, for example, is a key skill for the coach, which has at its heart competency in the respectful mind. Author and management consultant, Peter Drucker, defines leadership as "the lifting of a man's vision to higher sights, the raising of a man's performance to a higher standard, the building of a man's personality beyond its normal limitations".⁴ Effective leadership lies at the heart of any successful organisation, as leadership expert John Maxwell¹⁰ asserts, the one thing that all good organisations possess is good leadership. Superbowl winning Coach Mike Shanahan¹¹ emphasises the importance of leadership, and the transferability of these skills, stressing that no matter what business you're in, the principles of leadership are the same. Yet leadership skills are not universal, and need to be cultivated and developed as with any skill. As the Chinese proverb says, "it is easy to find a thousand soldiers but difficult to find a good general". Undoubtedly, coaches assume positions in which leadership becomes a crucial skill, yet once again this is an area of expertise which is rarely covered in the strength and conditioning literature, and which probably does not presume a high priority in a strength and conditioning coach's professional development plan. Former US President Harry S. Truman stated that you "cannot lead others until you first lead yourself", and this is only possible if you invest in yourself, stressing the importance of professional development, development that needs to encompass the skills of all 5 minds, rather than simply on building increasing discipline specific knowledge .

The environment developed by the coach together with the relationships they develop with their athletes, will play a crucial role in determining the ultimate success of any programme. This requires mastery of the respectful mind, but also emphasises the importance of the ethical mind.

The ethical mind

One of the key roles of a coach is to transfer what they know to their athletes, and this includes more than the programme itself, and incorporates standards, ideals and beliefs. Superbowl winning coach Bill Parcells⁷ famously quotes that it's not what the coach knows but what the players know that counts, again stressing the importance of pedagogy within the coaching process. However, effective teaching relies upon the skills of the ethical mind, in addition to the pedagogical skills of the coach. Leadership expert and author John Maxwell¹⁰ suggests that while people may teach what they know, they reproduce what they are, and this reflects the role of character and the ethical mind in coaching. During the last few months, the press has been full of stories of indiscretions in the private lives of sports stars, and many reputations have been tarnished by athlete's failures to address key ethical issues in their lives. Undoubtedly, these actions are able to affect the quality of the athlete's performance during these periods. In a similar vein, the ethical actions of coaches will affect the quality of the programmes they deliver and the degree to which athletes buy into these programmes. It is often said that if you wish to evaluate the character of a business, first evaluate the character of the leader, as an organisation will ultimately become a reflection of the leader. Similarly, the strength and conditioning programme will closely resemble the character of the coach, and the coach must set the example. At times, coaches may be tempted to cut corners, pursue their own interests, fail to honour the precepts and structures of their calling, in essence undertaking compromised work.⁵ Regardless of any short term gains, this will always compromise the long term credibility of the coach, and ultimately the profession.

Part of the development of strength and conditioning will be the development of professional standards and ethics. If members of a profession do not act according to recognised standards, they stand at risk of being disbarred from their professional guild, and this is an area strength and conditioning needs to move towards if it wishes to become a true profession. It must be noted that being recognised as a member of a profession is not the same thing as acting professionally, and this requires the development of an ethical mind.⁵ There is an old Quaker saying, "*let your life speak*", and this lies at the essence of the ethical mind in coaching.

A Commitment to Excellence

Hopefully, this discussion of the five minds of an effective coach has highlighted the diverse nature of strength and conditioning coaching, and how it is so much more than simply sets, reps and loads. It is likely that there will not be one single trait that will differentiate successful coaches from less successful coaches. Instead, it will likely reflect different levels of mastery within the five minds, and within specific domains within these minds. Scientific knowledge, for example, will not necessarily guarantee coaching success. Instead, coaching success will depend upon ability across the 5 minds, and this needs to be cultivated over time, and here it is useful to remember that few worthwhile things in life come quickly. The greatest obstacle to discovery often isn't ignorance or lack of intelligence, it's the illusion of knowledge, and one of the great dangers of life is believing you have arrived.¹⁰ Successful coaches will ultimately need to ensure that they have plans and mechanisms in place to ensure consistent growth in their level of performance. To grow you have to be intentional, and it could be that the focus of many strength and conditioning coaches development plan lies in the disciplined mind domain, with little attention paid to the other minds. Could it be that attention to these can provide greater potential for ultimate growth and the eventual attainment of a higher level of performance? As the Chinese proverb says; "*read ten thousand books and walk ten thousand miles – wisdom comes from experience*".

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