

Apprenticeship and Mentoring Relationships in Strength and Conditioning: The Importance of Physical and Cognitive Skill Development

Marshall J. Magnusen, PhD and Jeffrey Petersen, PhD
Department of Health, Human Performance and Recreation at Baylor University, Waco, Texas

SUMMARY

THE EXPANDING STRENGTH AND CONDITIONING PROFESSION NECESSITATES GREATER EMPHASIS UPON THE CAREER DEVELOPMENT OF NOVICE COACHES. THIS ARTICLE EXAMINES AN APPRENTICESHIP FRAMEWORK OF THE MENTORING PROCESS IN A STRENGTH AND CONDITIONING CONTEXT. BECAUSE THE APPRENTICESHIP FRAMEWORK IS TRADITIONALLY UNDERSTOOD IN TERMS OF ACQUIRING PHYSICAL SKILLS, WE MAKE NOTE OF HOW THIS PROCESS ALSO INCLUDES A COGNITIVE COMPONENT THAT IS EQUALLY IMPORTANT TO STRENGTH COACHES AND THEIR ABILITY TO ACHIEVE CAREER SUCCESS. THE COGNITIVE COMPONENT IS CENTERED ON LEARNING TO NAVIGATE THE COMPLEX WORLD OF ORGANIZATIONAL POLITICS AND INTERPERSONAL RELATIONSHIPS, WITH PARTICULAR ATTENTION BEING PAID TO THE CONCEPT OF POLITICAL SKILL.

INTRODUCTION

Over the past several decades, a sizeable body of scholarly research has developed within the field of strength and conditioning. This literature base [e.g., (5,11,14,23)] includes in-depth physiological research about muscular hypertrophy, strength, power, and flexibility as well as comprehensive explanations (5,8) about how strength coaches can more effectively teach exercise techniques and design training routines for their athletes/clients. A small body of research (3,16,20) has even been directed toward more thoroughly understanding the specific leadership styles, coaching behaviors, and training methodologies of college- and professional-level strength coaches. Although the breadth and depth of the existing strength and conditioning literature is impressive, it is by no means complete.

In particular, little written consideration has been given to how novice strength coaches are mentored by veteran strength and conditioning coaches. From this arises 2 basic

questions. What general form does mentoring assume in the field of strength and conditioning? What should novice strength coaches (mentees) look for in a mentoring relationship? Presently, neither question has been sufficiently addressed. Therefore, we seek to accomplish a 3-fold objective in this article.

The first objective is to develop a general awareness and basic level of understanding of formal mentoring in an apprenticeship framework. Within this framework, mentoring has been traditionally understood as the process through which mentors pass along the requisite physical knowledge and skills of a chosen profession to their mentees (18). Increasingly though, the study of mentoring within an apprenticeship framework includes more than the development of physical skills; it has

KEY WORDS:

apprenticeship; cognitive skill development; intern; graduate assistant; mentor; mentoring; physical skill development; political skill; protege

expanded to include the development of mentee cognitive skills (6). This, as defined by Collins et al. (6), is “learning-through-guided-experience on cognitive and metacognitive, rather than physical, skills and processes” (p. 456). A mentee being taught about the thought processes guiding his or her mentor’s interactions with athletic directors and sport team coaches is an example of cognitive apprenticeship. Each of these distinct mentoring components is discussed.

The second objective is to develop a deeper awareness and understanding of cognitive skill development within mentoring. Whereas the first section of this article offers a broad overview of mentoring and a traditional apprenticeship framework, the second section proceeds under the assumption that strength coaches, especially experienced ones, most likely have a solid grasp on how to impart the requisite physical skills of their profession to their mentees. However, this same level of understanding and transference may not automatically apply to cognitive skills; hence, it warrants separate attention.

Because the development of cognitive skills is itself a broad area of study, primary attention within the second objective is given to the procedural issue of organizational politics (i.e., the political dynamics of the workplace). This area is an important aspect of cognitive skill development because strength and conditioning coaches, similar to most business professionals, work in environments that are either implicitly or explicitly political. Consequently, factors, such as job knowledge, training proficiency, and hard work ethics, may not be enough to automatically guarantee job placement and career success. Therefore, in addition to mentees being taught the essential physical skills of the strength and conditioning profession, we take the position that mentees should also seek out (and mentors should provide) training and instruction that will make them more adept at understanding and navigating their respective political environments.

Such a focus does not infer that cognitive skills are a substitute for being able to properly instruct athletes. This, in tribute to the cliched phrase, is talking the talk without being able to walk the walk, and it can unquestionably increase the risk of a strength coach’s athletes suffering serious injuries. What is suggested, however, is that a high level of competency in both physical and cognitive skills is likely to have a greater impact on aspiring and novice strength coaches’ career opportunities than competency in only one of these 2 areas. Therefore, in terms of learning to navigate organizational political processes, we introduce the concept of political skill to the strength and conditioning literature.

The third objective is to provide novice and veteran strength and conditioning coaches with specific and practical guidance on physical and cognitive skill development. Upon the conclusion of this final section, novice strength and conditioning coaches should have a more complete understanding of what to look for in a mentoring relationship. They should also have an improved grasp of how cognitive skills, like physical skills, can be improved through training and mentor supervision. This article’s content also may provide new insights in mentoring to veteran strength and conditioning professionals who may have overlooked the apprenticeship framework and the cognitive skills component in preparing their mentees for a successful future in the field.

MENTORING AND THE APPRENTICESHIP FRAMEWORK

Mentoring is generally defined as a relationship between a person of greater rank, experience, or expertise teaching, guiding, and developing a novice in a chosen profession (1). The mentoring process has been noted to provide beneficial outcomes for the mentee or protege (i.e., promotion, status, power, competence, effectiveness), for the mentor (i.e., rejuvenation, competence, self-confidence), and for the organization (i.e., job satisfaction, turnover reduction, talent development) (2,21,27). There are

many methods and models for studying and implementing mentoring. A mentor-centric perspective, for example, is focused solely on areas such as mentor willingness to mentor others and the extent to which a mentor gains satisfaction from a mentoring relationship (26). Although informative, an approach like this does not provide a basic framework for understanding the key elements in a mentor–mentee relationship. This is why the selection of an overarching framework that details several key stages in the mentoring process was deemed to be the most appropriate course of action for this article.

Specifically, the strength and conditioning discipline seems to generally follow an apprenticeship-type model of individual development. The National Strength and Conditioning Association (NSCA), for example, offers 5 student assistantships each year. Recipients of this assistantship are awarded a \$10,000 stipend (paid over a 12-month period) and get the opportunity to work with a strength coach who has the NSCA Registered Strength Coach Distinction (RSCC, *D). Individuals with this distinction are full-time strength coaches with a minimum of 2 years of experience in assessing, training, and educating athletes. Similarly, the Collegiate Strength and Conditioning Coaches Association (CSCCa) bestows the honor of Master Strength Coach to a select few veteran strength coaches. To gain acceptance into this group, strength coach candidates must first complete a 9-month internship beneath a designated master. The practices of both the NSCA and CSCCa are comparable with a traditional model of apprenticeship that dates back thousands of years (carpenters, stone masons, etc.). The traditional model of apprenticeship follows a rather straightforward process characterized by the interplay between 4 important components: modeling, scaffolding, fading, and coaching (6,22).

Once an apprentice (mentee or protege) has been accepted to formally train beneath the instruction of a master tradesperson (mentor), this

individual observes the master as he/she demonstrates specific tasks (e.g., head strength coach performing the Olympic-style lifts). This is known as the modeling component. In the scaffolding component, the master provides learning opportunities and support/reinforcement to the apprentice as this individual learns to successfully perform a wide array of necessary job-related activities (e.g., taking athletes through a warm-up, setting up agility drills, demonstrating proper lifting techniques). Next, in the fading component, the master gradually moves into the background. This gives the apprentice an increased level of individual responsibility in the absence of mentor support and supervision (e.g., mentee becomes personally responsible for training routine development). Interwoven throughout the apprenticeship experience is the coaching component. This is the fundamental process of overseeing and directing the apprentice's learning experience (6).

The traditional conceptualization of apprenticeship, as described above, is typically understood in terms of the acquisition of physical skills (e.g., learning how to correctly perform and teach the front squat exercise). However, apprenticeship includes more than just the development of requisite physical skill competencies. Apprenticeship includes the development of cognitive skills as well as the socialization of mentees into both formal and informal organizational norms and behaviors. In other words, the mentor-mentee relationship can develop into a powerful process through which apprentices can learn about the ins and outs of organizational behavior as well as what skill sets are required to thrive in the intricate jungle of interpersonal relationships, conflicting personalities, and competing personal and/or organizational objectives (6,18).

This somewhat recent development has been referred to as "cognitive apprenticeship" (6), and fortunately enough, the traditional apprenticeship framework can also be used to guide our understanding of how mentees can progress toward expertise in areas other

than physical skills. Both physical and cognitive skills can be developed through the interplay of modeling, scaffolding, fading, and coaching. Thus, what follows in this article is a discussion of cognitive skill development in mentoring relationships. Because cognitive skill development encompasses a myriad of areas, in this section, attention is solely focused on organizational political processes and the importance of developing strong networking and interpersonal influence skills.

COGNITIVE SKILL DEVELOPMENT AND ORGANIZATIONAL POLITICS

Not only can mentors aid their mentees in the development of physical skills, they can also help these individuals develop a keen understanding of the political dynamics in their strength and conditioning environments as well as the skills necessary to maneuver through such political arenas. A veteran strength coach helping a novice strength coach understand how and why things work the way they do in particular strength and conditioning environments (e.g., high school or college athletic department, private sector) is a form of cognitive apprenticeship. Thus, we define, discuss, and then apply the concept of political skill to the apprenticeship framework in a strength and conditioning context.

Political skill has been defined as "the ability to effectively understand others at work and to use such knowledge to influence others to act in ways that enhance one's personal and/or organizational objectives" (10, p. 127). In contrast to political behavior, which refers to the actual behaviors of an individual (the "what"), political skill is a style or "how to" construct. Political skill is also different from the concept of social skill. Whereas social skill refers to the "ease and comfort of communications" (19, p. 27) between 2 parties, political skill includes an interpersonal influence component. In other words, strength coaches can consistently have very amicable conversations with their athletic directors and never achieve their personal objectives (e.g., increased equipment budget). This is the value of

understanding and mastering political skill, given the concept is the only social effectiveness construct "explicitly developed to assess an employee's ability to recognize and then navigate the political realm of interpersonal relationships" (25, p. 139).

Four dimensions comprise the concept of political skill. These dimensions include social astuteness, interpersonal influence, networking ability, and apparent sincerity (10). Social astuteness describes an individual with high self-awareness and an acute understanding of what is required to be accepted (by others) in a multitude of social situations (9,12). Interpersonal influence refers to a heightened level of interpersonal flexibility and an uncanny ability to exert sway over other individuals (9). Networking ability describes those individuals who are able to swiftly develop positive and productive work partnerships and coalitions (9). Last, apparent sincerity describes individuals who are able to effectively project a high level of authenticity and sincerity to others (9).

Political skill has been repeatedly found to have a positive impact on employee interpersonal relationships and career-related outcomes (e.g., total promotion, career satisfaction, perceived external mobility) (4,24). For instance, political skill has been shown to significantly improve leader-member exchange between subordinates who are racially dissimilar from their supervisors (4). Also, the extent to which an employee is politically skilled has been found to change the nature of the relationship between his/her influence tactic usage and supervisor perceptions of these tactics (15). That is, as employees' political skill levels increased, supervisors' positive perceptions of these tactics also increased.

Although certain strength coaches may be inherently more politically skilled than others, political skill is a learnable and trainable concept. With particular relevance to this article, Ferris et al. (9) explained how the interpersonal influence dimension can stem from

mentoring: “At its best, mentoring involves the informal training and development of what, when, and with whom to things in the work environment, along with building the perceptive, interpersonal, and social effectiveness competencies that round out political skill” (p. 44). Thus, along with the development of physical skills through the mentoring process, mentees can also learn cognitive skills, such as political skill, through an apprenticeship framework. A framework for physical and cognitive skill development is provided in Table 1.

PRACTICAL APPLICATIONS

There is more to the mentoring process than a veteran strength coach educating and instructing apprentices in the physical skills required for their chosen field. Organizational behavioral processes, especially the politics of interpersonal relationships, also require an equal level of awareness, understanding, and mastery. Provided next are examples of how novices can train each dimension of political skill. Additionally, Table 2 provides examples of how strength coach mentors can teach their mentees about the 4 dimensions of political skill.

A simple way for novice strength coaches to train the social astuteness dimension of political skill is by getting in the habit of summarizing what others have said to them and then repeating it back to these individuals. If a parent comes to a novice strength coach with several concerns about how his/her child is being trained, for example, the novice strength coaches should listen with a purpose so as to understand the root cause of the parent’s concern and then provide a recap of the concern back to the parent to demonstrate a strong level of

Table 1
Examples of physical and cognitive skill development in the apprenticeship framework

Apprenticeship component	Physical skill development example	Cognitive skill development example
Modeling	Scenario: mentee observes mentor take a sport team through a pre-workout warm-up session	Scenario: mentee observes mentor discuss a new strength training routine with a head sport team coach
	Key objective: mentee watches and learns how to set up and take athletes through a complete warm-up session	Key objective: mentee learns the reasoning behind the way the strength training routine was explained and promoted
	Coaching actions: mentor provides a thorough explanation to the mentee about the format of the warm-up, the selection of exercises, and how the athletes are properly instructed	Coaching actions: mentor provides the mentee with a detailed rationale of his/her approach for “selling” the head coach on the merits of the new strength training routine
Scaffolding	Scenario: mentee takes a sport team through a pre-workout warm-up under the direct supervision of his/her mentor	Scenario: mentor allows mentee to take an active part in a strength training meeting with a head sport team coach
	Key objective: mentee learns to transform observation into hands-on application	Key objective: mentee learns to put effective listening and communication skills into practice in a real-life scenario
	Coaching actions: Mentor supervises and provides corrections and positive reinforcement to his/her mentee	Coaching actions: mentor explains the basis for what was said to the sport team coach as well as how it was said
Fading	Scenario: mentor allows mentee to take a sport team through a pre-workout warm-up in the absence of direct mentor supervision	Scenario: mentor allows mentee to have a one-on-one meeting with a sport team coach about a new training idea. Mentor is not present during the meeting
	Key objective: mentee successfully executes a pre-workout warm-up in the absence of direct supervision	Key objective: mentee develops improved communication skills, especially as it pertains to articulating his/her ideas
	Coaching actions: Post-warm-up mentor-mentee chat. Mentor helps mentee fine tune his/her training style	Coaching actions: mentee provides a meeting status report. Mentor provides conversation tips for future meetings

The traditional apprenticeship framework described in this article consists of 4 components. The fourth component, coaching, is interwoven throughout the apprenticeship experience. This component is addressed in each of the examples provided above.

Table 2
Cognitive skill development: how strength coach mentors can teach their mentees political skill

Political skill dimension	Example of how veteran strength coaches (mentors) can teach this dimension
Social astuteness	Find a sport team coach with whom you (the mentor) have a positive and longstanding relationship. Tell the sport team coach you would like him/her to role play with your mentee. For example, have the sport team coach assume the role of a skeptical and impatient coach. Serve as a silent observer while the mentee assesses the coach and attempts to convince this individual about the benefits of a newly designed training routine. After the role playing exercise, the mentor and sport team coach provide the mentee with positive and constructive feedback about how well he/she interpreted the scenario and reacted to the doubtful and impatient sport team coach
Interpersonal influence	Identify a sport team that is known to be unmotivated to train with great intensity in the weight room. Have the mentee observe these athletes while they train under the supervision of the mentor or another veteran strength coach. After several observation periods, ask the mentee to put together a training routine and plan of action for motivating these athletes. Require the mentee to provide a rationale for his/her training routine and the chosen method for motivating this team. Next, observe the mentee as he/she trains the sport team. Follow each training session with a discussion period between the mentee and the mentor about the mentee's personal style of training and what actions can be taken by the mentee to make it more effective
Networking ability	Create situations that strongly encourage or require the mentee to develop interpersonal relationships with unfamiliar individuals. Summer is a time of year when many strength and conditioning professionals hold strength camps for high school athletes. One important component contributing to the success of strength camps is strength coach–parent interactions. Require the mentee to work the registration desk and actively interact with parents
Apparent sincerity	Provide a mentee with an opportunity to train a small group of athletes. Tell the mentee he/she will be teaching the athletes a new exercise. Video record the mentee as he/she instructs and interacts with the athletes. Watch the video playback of the training session with the mentee. Provide the mentee with feedback about his/her verbal and nonverbal communication skills. For instance, the mentee may unintentionally scowl at the athletes each time they make a mistake. Repeat this process several more times so the mentee can see the improvements he/she is making

understanding. Next, a novice can train the interpersonal influence and apparent sincerity dimensions of political skill by practicing his/her public speaking skills. One specific suggestion would be to video record oneself during a training session with athletes. After the session, the novice can watch his/her body language, speaking style, and athletes' reactions (to the novice) throughout the session. Finally, one suggestion for novices to improve the networking ability dimension of political skill is to attend NSCA professional conferences with the goal of getting 5–10 business cards from professionals in the field currently unfamiliar to them.

CLOSING THOUGHT

What has been detailed in this article is the application of the apprenticeship framework to the mentoring process in the field of strength and conditioning.

Although the apprenticeship framework has been traditionally understood in terms of acquiring physical skills, the case put forth in this article is that it is equally important to develop cognitive skills during the mentoring process. Because cognitive apprenticeship can include vast arrays of areas, we focused on 1 area (i.e., organizational political processes) that a large number of aspiring and novice strength coaches may not be aware or fully understand. With this focus in mind, we introduced the concept of political skill, explaining and demonstrating how social awareness and interpersonal influence skills, when combined with strength training knowledge and technical ability, may help to propel inexperienced strength coaches' careers forward. Thus, strength and conditioning coaches should more clearly understand the

importance of both physical and cognitive skill development in a mentoring relationship. They should also have a basic understanding of how each of these areas can be developed.

To conclude, the mainstream business literature is replete with evidence that apprenticeship and mentoring relationships can lead to positive mentor, mentee, and organizational outcomes (6,7,18,21). In contrast to this context, much less is known about the subtle nuances of the mentoring process in sport, because research in this area has been generally limited to studies about athletic directors and sport team coaches (13,17,28). This indicates the need for more research related to the apprenticeship and mentoring processes within strength and conditioning. Thus, we hope this initial consideration of mentoring sparks

further dialogue and research about the various facets of the mentoring process within the strength and conditioning discipline.



Marshall J. Magnusen is an assistant professor of Health, Human Performance and Recreation at Baylor University.



Jeffrey Petersen is the Sport Management Graduate Program director and associate professor of Health, Human Performance and Recreation at Baylor University.

REFERENCES

- Allemen E, Chohran J, Doverspike J, and Newman I. Enriching mentoring relationships. *Pers Guid J* 62: 329–333, 1984.
- Allen TD, Eby LT, and Lentz E. The relationship between formal mentoring program characteristics and perceived program effectiveness. *Personnel Psychol* 59: 125–153, 2006.
- Brooks DD, Ziatz D, Johnson B, and Hollander D. Leadership behavior and job responsibilities of NCAA division 1A strength and conditioning coaches. *J Strength Cond Res* 14: 483–492, 2000.
- Brouer RL, Duke A, Treadway DC, and Ferris GR. Moderating effect of political skill on the demographic dissimilarity–Leader-member exchange quality relationship. *Leadersh Q* 20: 61–69, 2009.
- Buresh R, Berg K, and French J. The effect of resistive exercise rest interval on hormonal response, strength, and hypertrophy with training. *J Strength Cond Res* 23: 62–71, 2009.
- Collins A, Brown JS, and Newman SE. Cognitive apprenticeship: Teaching the crafts of reading, writing, and mathematics. In: *Knowing, Learning, and Instruction: Essays in Honor of Robert Glaser*. Resnick L, ed. Hillsdale, NJ: Lawrence Erlbaum, 1989. pp. 453–494.
- Dreher GF and Ash RA. A comparative study of mentoring among men and women in managerial, professional, and technical positions. *J Appl Psychol* 5: 539–546, 1990.
- Duba J, Kraemer WJ, and Martin G. A 6-step progression model for teaching the hang power clean. *Strength Cond J* 29: 26–35, 2007.
- Ferris GR, Davidson SL, and Perrewé PL. *Political Skill at Work: Impact on Work Effectiveness*. Mountain View, CA: Davies-Black Publishing, 2005. pp. 3–19.
- Ferris GR, Treadway DC, Kolodinsky RW, Hochwarter WA, Kacmar CJ, Douglas C, and Frink DD. Development and validation of the political skill inventory. *J Manage* 31: 126–152, 2005.
- Gabbett TJ, Sheppard JM, Pritchard-Perschek KR, Leveritt MD, and Aldred MJ. Influence of closed skill and open skill warm-ups on the performance of speed, change of direction speed, vertical jump, and reactive agility in team sport athletes. *J Strength Cond Res* 22: 1413–1415, 2008.
- Goffee R and Jones G. Managing authenticity: The paradox of great leadership. *Harv Bus Rev* 83: 86–97, 2005.
- Jones RL, Harris R, and Miles A. Mentoring in sports coaching: A review of the literature. *Phys Educ Sport Pedagogy* 14: 267–284, 2009.
- Kawamori N and Haff GG. The optimal training load for the development of muscular power. *J Strength Cond Res* 18: 675–684, 2004.
- Kolodinsky RW, Treadway DC, and Ferris GR. Political skill and influence effectiveness: Testing portions of an expanded Ferris and Judge (1991) model. *Hum Relations* 60: 1747–1777, 2006.
- Magnusen MJ. Differences in strength and conditioning coach self-perception of leadership style behaviors at the National Basketball Association, Division I-A, and Division II levels. *J Strength Cond Res* 24: 1440–1450, 2010.
- Narcotta E, Petersen J, and Johnson S. Mentor functions in NCAA women's soccer coaching dyads. *Team Perform Manage* 15: 100–116, 2009.
- Noe RA, Greenberger DB, and Wang S. Mentoring: What we know and where we might go. In: *Research in Personnel and Human Resources Management*. Ferris GR and Martocchio JJ, eds. Oxford, UK: JAI Press/Elsevier Science, 2002. pp. 129–173.
- Peled A. Politicking for success: The missing skill. *Leadersh Org Dev* 21: 20–29, 2000.
- Pullo FM. A profile of NCAA Division I strength and conditioning coaches. *J Strength Cond Res* 6:55–62, 1992.
- Ragins BR and Cotton JL. Mentor functions and outcomes: A comparison of men and women in formal and informal mentoring relationships. *J Appl Psychol* 84: 529–550, 1999.
- Randi J. Apprenticeship. In: *Encyclopedia of Psychology*. Kazdin AE, ed. New York, NY: Oxford University Press and American Psychological Association, 2000. pp. 220–222.
- Rassier DE. Stretching human muscles makes them stronger. *J Appl Physiol* 102: 5–6, 2006.
- Todd SY, Harris KJ, Harris RB, and Wheeler AR. Career success implications of political skill. *J Soc Psychol* 149: 179–204, 2009.
- Treadway DC, Breland JW, Adams GL, Duke AB, and Williams LA. The interactive effects of political skill and future time perspective on career and community networking behavior. *Soc Netw* 32: 138–147, 2010.
- Weinberg FJ and Lankau MJ. Formal mentoring programs: A mentor-centric and longitudinal analysis. *J Manage* 37: 1527–1557, 2011.
- Weaver MA and Chelladurai P. A mentoring model for management in sport and physical education. *Quest* 51: 24–38, 1999.
- Weaver MA and Chelladurai P. Mentoring in intercollegiate athletic administration. *J Sport Manage* 16: 96–116, 2002.