



Research DIGEST

*Published quarterly
by the President's Council
on Fitness, Sports & Nutrition
Rockville, MD*

Guest Author

Daniel Gould, PhD
Institute for the Study
of Youth Sports
Michigan State University

Lead Editor

Jeffrey I. Mechanick, MD, FACP,
FACE, FACN, ECNU
Clinical Professor of Medicine
Director, Metabolic Support
Division of Endocrinology,
Diabetes, and Bone Disease
Icahn School of Medicine
at Mount Sinai

Editorial Board

David Bassett, Jr., PhD
University of Tennessee

Diane L. Gill, PhD
University of North Carolina
at Greensboro

Rachel Johnson, PhD, RD
University of Vermont

Stella Lucia Volpe, PhD, RD,
LDN, FACSM
Drexel University

Diane Wiese-Bjornstal, PhD
University of Minnesota

*The findings and conclusions in this
paper are those of the authors and do not
necessarily represent the official position
of the President's Council on Fitness,
Sports & Nutrition.*

Effective Education and Development of Youth Sport Coaches

Developing Effective Youth Sport Coaches

Organized sports programs are among the most popular activities in which children and youth participate. More than 40 million children ages 18 and under take part in these programs.¹ Moreover, children and youth are profoundly affected by sports, which influence them physically, psychologically, and emotionally.² Children who take part in youth sport programs are guided by coaches, many of whom are untrained volunteers.³ Researchers have shown that coaches have a great influence on the experiences and outcomes of children and youth who participate in sports.⁵ The American public also recognizes that these coaches serve as important role models and mentors for young people. A survey conducted with nearly 9,000 Americans showed that coaches rank as the #1 positive influence on youth involved in sports today.⁴ Given the popularity of sports for children and youth and their great influence on young people, it is surprising that many of the individuals who coach in these programs are untrained volunteers.

Over the last 30 years, however, more attention has been paid to the need to educate these individuals and a large number of coaching education programs

have been developed. Research on the development and education of youth sport coaches has lagged behind research on program development. For this reason, the development of youth sport coaches must be examined. This review begins by defining coaching and its components. Then, it examines America's youth sport coaches—who they are, their educational needs, how they learn to coach—as well as evidence on the efficacy of coaching education programs and the key principles for effective youth coach development. Strategies for effectively coaching youth are also conveyed.



Because the most powerful learning for coaches comes from “doing” and reflecting on those coaching experiences, as well as interacting with peers in specific contexts, researchers have emphasized the need to reflect on practice and to examine the social networks coaches learn within.



What Is Coaching?

The term coaching is defined in many ways in American society. A coach is generally thought of as a guide, an instructor, or a mentor. Coaching is not used exclusively in sport. Business coaching has become a major industry, and life coaching is no longer uncommon. Academics who study coaching and coaching effectiveness have developed more precise definitions in the sport context.^{6,7} Based on an extensive review of the coaching science literature, Cote and Gilbert offered an integrated definition of sport coaching.⁶ Specifically, coaching involves:

The consistent application of integrated professional, interpersonal, and intrapersonal knowledge to improve athletes' competence, confidence, connection, and character in specific coaching contexts (p. 316).

This definition identifies three areas of knowledge that coaches need. First, *professional knowledge* focuses on content or declarative information from the sport sciences, pedagogical information, and sport-specific information. The definition also includes procedural (interpersonal, intrapersonal) knowledge about how to apply declarative knowledge to achieve desired outcomes. *Interpersonal knowledge* focuses on the coach's skills in interacting with the individuals and groups with whom he or she works, while *intrapersonal knowledge* focuses on how well a coach understands him or herself and reflects on his or her actions.

This definition also contains four target outcomes of coaching: (a) improving competence relative to the physical and mental skills needed for athletic performance; (b) confidence to execute those skills; (c) connection through communicating and fostering good coach-athlete relationships; and (d) character in the form of psychosocial skills and attributes, such as the ability

to set and foster goals, and teamwork or moral values that may be developed through participation in the sport, such as fair play.

Finally, Cote and Gilbert's definition of coaching effectiveness recognizes the importance of the context in which one is coaching. For example, one might be a coach of children in a participation-focused program that focuses on maximizing involvement, a coach for adults in a recreational league, a coach for adolescents in a performance-focused developmental program, or a performance coach for adults in a highly competitive program aimed at achieving peak performance. Thus, coaching effectiveness is tied to the context in which one coaches (in terms of the athletes' age, goals, and stage within a long-term athlete development framework).

Applying this definition, the goals of the program, context, and age of the child need to be considered to effectively coach children and youth. In addition, the competency of a coach needs to be examined from professional, interpersonal, and intrapersonal knowledge perspectives and relative to four outcomes: (1) competence, (2) confidence, (3) connection, and (4) character.

Identifying America's Youth Sport Coaches and Their Coaching Educational Needs

Early descriptive research on non-school youth sport coaches in the United States revealed that most were volunteers, much more likely male than female, and typically had their own children in the programs they coached.^{8,9} Furthermore, these coaches were most motivated to help young people develop physically, psychologically, and socially, followed by having fun, with winning rated least important. More contemporary research verifies many of these early findings on youth sport coaches.¹⁰ Well over 90% of today's coaches want to instill positive values in the young athletes they coach, although recent research suggests that for this to happen, character must be intentionally fostered; it is not developed by mere participation in sport.¹¹ Volunteer youth coaches are also motivated to become more competent as coaches (especially first-year coaches) and are likely to coach their own child.¹⁰ Male coaches are more confident than their female counterparts, although this might be an artifact of experience differences.¹²

In terms of their educational needs, youth sport coaches have indicated that they need basic information about sport science and child development, as well as the skills and tactics of the particular sport coached.¹³ For example, in a recent focus group study, volunteer coaches reported that they wanted training relative to:

- Teaching and communicating with children;
- How to work with children of diverse skill levels;
- Proper skill development progressions;
- How to make practices and competitions fun;
- Safety and injury prevention and child psychological issues (how to treat young athletes, work with their parents, and build confidence);
- Ways to enhance teamwork and team building, stress management (both parental over-involvement and athlete over-training issues);
- Coaching one's own child;
- Understanding appropriate physical contact with players; and
- A variety of administrative issues.¹⁴

However, it was also reported that the time demands placed on coaches are a major barrier to coaching education. Additional barriers included the high turnover rate of coaches and, in youth sports administrators, the lack of different educational programs for coaches who return from year to year, as well as concerns with the quality of the education provided.

The work of the National Association for Sport and Physical Education (NASPE) is particularly relevant to youth coaching education. Over the last two decades, NASPE has worked with a number of youth sport organizations, its members, the United States Olympic Committee, and the National Federation of State High School Associations to develop *National Standards for Sport Coaches*. Now in its second edition,¹⁵ the standards are based on sport science research and best practice knowledge and designed to provide a template for what coaches need to know to effectively fulfill their responsibilities and to guide coaching education and evaluation efforts. Table 1 summarizes the national standards, which are organized around eight domains and contain specific standards within each domain. Although not depicted in the table, but outlined in the NASPE report, specific benchmarks for judging whether standards are met (e.g., “have athlete medical information available,” “design practices to allow athletes input and self-evaluation”) are also included.

It is important to note that the national standards do not differentiate between the status of the coach (e.g., volunteer, professional) or type of individual coached (e.g., child, adult). These standards are seen as the minimum body of knowledge needed at every level of coaching, with the expectation that the

more involved a coach is within his or her role, the more knowledge relative to each standard is needed. That is, a volunteer youth coach would be expected to have some basic knowledge of all 40 standards, but a paid high school or college coach would be expected to have more in-depth knowledge and developed skills.

In addition to the national standards, the International Council for Coaching Excellence and the Association of Summer Olympic International Federations have developed an *International Sport Coaching Framework*.¹⁶ The framework is designed to present a common set of internationally recognized criteria to inform the development, education, and qualification of coaches. In this document, the primary functions of coaches are provided and include: setting the vision for the program, shaping the environment, building relationships, conducting practices and structuring competitions, reading and reacting to the field of play, and learning and reflecting on one's coaching experience. Competencies for each of these coaching functions are also provided.

Two types of coaching occupations or areas are also discussed in this framework: (1) *participation coaching* (of children, adolescents, and adults), which focuses on coaches who work with athletes who participate for self-referenced outcomes such as fun, health, or developing skills; and (2) *performance coaching* (of emerging performance or elite performance athletes), which focuses primarily on helping participants achieve performance excellence and competitive success. The *International Sport Coaching Framework* also specifies four coaching roles, each progressing in responsibilities and duties: coaching assistant, coach, advanced/senior coach, and master/head coach. These four coaching roles also require progressively more training and education. These definitions are important because they help educators develop more effective programs designed to meet the needs and goals of different types of coaches. For example, the training and development needed for a youth gymnastics coach who works with children and adolescents in an elite performance track might be very different from the training and development needed for a gymnastics coach who works with children and youth in a participatory track. In addition, a youth coach might become a highly developed master coach with as much education and training as a professional coach who works with college athletes. Hence, coaching education credentials and expectations are no longer simply associated with the age group one coaches (e.g., the myth that youth coaches need the least education and coaches of adults the most). Instead, it is based on the type of athletes a coach works with (participatory or performance), the athletes' age level, and the coach's role (coaching assistant versus master coach).

Table 1. National Association for Sport and Physical Education (NASPE) National Standards for Sport Coaching

(Adapted from NASPE)¹⁵

Domain 1: Philosophy and Ethics

- Standard 1—Develop and implement an athlete-centered philosophy
- Standard 2—Identify, model, and teach positive values learned through sport participation
- Standard 3—Teach and reinforce responsible personal, social, and ethical behavior for all people involved in the sport program
- Standard 4—Demonstrate ethical conduct in all facets of the sport program

Domain 2: Safety and Injury Prevention

- Standard 5—Prevent injuries by providing safe facilities
- Standard 6—Ensure that all necessary protective equipment is available, properly fitted, and used appropriately
- Standard 7—Monitor environmental conditions and modify participation as needed to ensure the health and safety of participants
- Standard 8—Identify physical conditions that predispose athletes to injuries
- Standard 9—Recognize injuries and provide immediate and appropriate care
- Standard 10—Facilitate a coordinated sports health care program that includes prevention, care, and management of injuries
- Standard 11—Identify and address the psychological implications of injury

Domain 3: Physical Conditioning

- Standard 12—Design programs of training, conditioning, and recovery that properly utilize exercise physiology and biomechanics principles
- Standard 13—Teach and encourage proper nutrition for optimal physical and mental performance and overall good health
- Standard 14—Be an advocate for drug-free sport participation and provide accurate information about drugs and supplements
- Standard 15—Plan conditioning programs to help athletes return to full participation following injury

Domain 4: Growth and Development

- Standard 16—Apply knowledge of how developmental change influences the learning and performance of sport skills
- Standard 17—Facilitate the social and emotional growth of athletes by supporting a positive sport experience and lifelong participation in physical activity
- Standard 18—Provide athletes with responsibility and leadership opportunities as they mature

Domain 5: Teaching and Communication

- Standard 19—Provide a positive learning environment that is appropriate to the characteristics of the athletes and goals of the program

- Standard 20—Develop and monitor goals for the athlete and program
- Standard 21—Organize practice based on a seasonal or annual practice plan to maintain motivation, manage fatigue, and allow for peak performance at the appropriate time
- Standard 22—Plan and implement daily practice activities that maximize time on task and available resources
- Standard 23—Utilize appropriate instructional strategies to facilitate athlete development and performance
- Standard 24—Teach and incorporate mental skills to enhance performance and reduce sport anxiety
- Standard 25—Use effective communication skills to enhance individual learning, group success, and enjoyment in the sport experience
- Standard 26—Demonstrate and utilize appropriate and effective motivational techniques to enhance athlete performance and satisfaction

Domain 6: Sport Skills and Tactics

- Standard 27—Know the skills, elements of skill combinations, and techniques associated with the sport being coached
- Standard 28—Identify, develop, and apply competitive sport strategies and specific tactics appropriate for the age and skill levels of participating athletes
- Standard 29—Use scouting methods for planning practices, game preparation, and game analysis

Domain 7: Organization and Administration

- Standard 30—Demonstrate efficiency in contest management
- Standard 31—Be involved in public relations activities for the sport program
- Standard 32—Manage human resources for the program
- Standard 33—Manage fiscal resources for the program
- Standard 34—Facilitate planning, implementation, and documentation of the emergency action plan
- Standard 35—Manage all information, documents, and records for the program
- Standard 36—Fulfill all legal responsibilities and risk management procedures associated with coaching

Domain 8: Evaluation

- Standard 37—Implement effective evaluation techniques for team performance in relation to established goals
- Standard 38—Use a variety of strategies to evaluate athlete motivation and individual performance as they relate to season objectives and goals
- Standard 39—Utilize an effective and objective process for evaluation of athletes in order to assign roles on positions and establish individual goals
- Standard 40—Utilize an objective and effective process for evaluation of self and staff

How Do Coaches Learn?

Efforts to educate youth sport coaches have been occurring in the United States since the late 1970s, with educational programs for youth coaches increasing over the last three decades. For example, multilevel coaching education programs have been developed by organizations such as the American Sport Education Program and the National Federation of State High School Associations and by national sport governing bodies such as USA Hockey and USA Swimming. Additionally, other, smaller organizations have also developed coaching education programs. However, while the number of coaches receiving training has increased, most training programs are voluntary and the fact remains that the majority of youth sport coaches in the United States are untrained. In most of these programs some type of in-person, online, and/or blended modules are provided. These courses focus on sport science, sport-related child development, teaching approaches, and sport-specific techniques and tactics. Typically, an expert conveys the knowledge in a formal presentation. Coaching education researchers, however, have surveyed and interviewed youth coaches and discovered that while these formal coaching education efforts are viewed as helpful, they are not rated as the primary means by which coaches learn.^{17,18} In contrast, coaches report more learning from informal contexts such as observing and interacting with other coaches, and from reflecting on their own coaching experiences. Thus, coaches report that the most powerful learning occurs from “doing” actual coaching and reflecting on those experiences. Coaching knowledge has also been shown to be learned best when tied to particular contexts such as performance or participatory coaching or with athletes of specific ages, as opposed to generalized coaching for all contexts and ages.¹⁹

“...while the number of coaches receiving training has increased, most training programs are voluntary and the fact remains that the majority of youth sport coaches in the United States are untrained.”

Because the most powerful learning for coaches comes from “doing” and reflecting on those coaching experiences, as well as interacting with peers in specific contexts, researchers have emphasized the need to reflect on practice and to examine the social networks coaches learn within.²⁰ Gilbert and Trudel,²¹ for instance, emphasize the importance of coaches reflecting on their experiences. Their research with youth sport coaches shows that coaches reflect on their coaching experiences in three ways:

1. **Reflection-in-action**, where a coach is reflecting on what is happening during a current game or practice (e.g., during a game, a coach reflects on why his offensive alignment is not working);
2. **Reflection-on-action**, where reflection occurs after a practice or competition but during the season where a coach can still apply new strategies in the very near future (e.g., after the game, the coach thinks about how the offense needs to change and implements that change for the next game); and
3. **Retrospective-reflection-on-action**, where the coach reflects after a long period of time after the practice or competition (e.g., in the off-season, a coach retrospectively analyzes what happened during the last season).

This research implies that coaching educators should orchestrate ways to facilitate all three types of reflective practice with coaches. Ways of facilitating reflection might include engaging in discussions with other coaches, analyzing videos of one’s coaching, creating coaching portfolios, and journaling.¹⁹ It has also been suggested that learning communities or communities of practice (where coaches have regular opportunities to present their dilemmas, ideas, and possible solutions with other coaches) be formed to help coaches better reflect on and learn from their coaching experiences.²²

What the Research Says about Youth Coaching and Coaching Education

Research on coaching effectiveness in general, and youth coaching effectiveness in particular, can be classified into three categories.^{7,23} One category includes descriptive studies of coaches and their behaviors. For example, Gould, Collins, Lauer, and Chung²⁴ conducted in-depth interviews with 10 high school football coaches recognized for their ability to enhance life skills such as discipline, leadership, and responsibility in their athletes.

Results revealed that these coaches had well-thought-out philosophies that placed primary importance on life skills development such as teamwork, leadership, and the ability to set and work toward goals; fostered strong coach-athlete relationships; intentionally taught life skills; and considered the context in which they coached.

A second category of studies examines the influence of individual differences and situational characteristics on coaching effectiveness and athlete outcomes. For instance, Amorose and Anderson-Butcher found that an autonomy-supportive coaching style, where athletes are given greater independence, was related to greater feelings of autonomy and enhanced self-determined behaviors such as effort and persistence in athletes.²⁵

The third and final category of studies is intervention research examining the efficacy of specific coaching interventions designed to change targeted athlete behaviors or the effectiveness of coaching education efforts. For example, Smith, Smoll, and Cummings studied basketball coaches of children ranging in age from 10 to 14 years.²⁶ An experimental group of coaches was trained to implement a mastery style of coaching (a strong emphasis was placed on a positive approach to coaching with frequent reinforcement, encouragement, and positive instruction; an emphasis on judging success as giving maximum effort; and individual improvement versus social comparison), whereas the

control group of coaches received no training. Post-season results revealed that the players in the experimental condition perceived their coach as being more mastery oriented, and these athletes exhibited decreases in anxiety over the season as compared to the players of the control coaches, who reported increases in anxiety. Thus, the intervention was judged to be successful in changing coach behavior and decreasing player anxiety.

Becker reviewed the literature on coaching behaviors and derived a number of important conclusions.²⁷ They included:

1. More effective coaches in terms of enhancing performance and sustaining athlete motivation *focus on positive behaviors* that are instructive, convey optimism and confidence, emphasize players' strengths versus weaknesses, focus on performance execution versus outcomes, and focus on an athletes' effort and attitude more than results.
2. Coaches who *are supportive* are judged to be most effective by their athletes. They strive to understand their athletes and emit behaviors that show support.
3. Effective coaches *individualize their coaching* by reading individual athlete needs and adjusting their behaviors accordingly.
4. Although effective coaches individualize, they are also *seen as fair*. They do not favor some athletes over others and they impart sanctions for inappropriate behavior to all athletes regardless of their status on the team.
5. Effective coaches are appropriate in that they exhibit the *right behaviors at the right times*. They know when to be tough, when to step in and intervene, and when to observe.
6. Effective coaches are clear communicators. They speak in terms athletes can understand, provide explanations for their behaviors, and avoid mixed messages.
7. More effective coaches are *consistent in their words and actions*.

While these guidelines were developed from the literature examining both youth and adult athletes, the guidelines are consistent with the literature on effectively developing young athletes.

Looking specifically at the youth sport coaching research, Erickson and Gilbert suggest that *effective youth sport coaches give high levels of instruction, support, and encouragement* and low levels of punishment.⁷ They also *create a motivational climate that is autonomy supportive* by involving athletes in decision making, providing rationales for decisions made, and requesting athlete input. These coaches also *foster a mastery goal-oriented climate* in that they focus on self-referenced improvements in their athletes, meaning that the coach focuses on each athlete improving his or her skills compared to prior performances, rather than by

Table 2. Behavioral Guidelines for Youth Sport Coaches

(Adapted from Weinberg and Gould)⁴⁰

- Focus on praise and encouragement by looking for and rewarding what young athletes do correctly; give praise sincerely by making sure it is earned
- Minimize punishment and hostile and controlling behaviors
- Reward effort as much as outcome
- Develop realistic expectations based on the young athletes' age and developmental level
- Give a high frequency of affirmative, instructive, and supportive behavior
- Focus on instruction—teaching and practicing skills
- Modify skills and activities so that they are developmentally appropriate
- Focus more on self-improvement goals versus competitive outcomes
- Use the sandwich approach to error correction (a sincere positive statement, corrective feedback, encouraging statement)
- Modify rules to maximize activity
- Reward correct performance technique, not just the outcome of a skill (e.g., how a shot was executed, not just whether it went in)
- Create environments that reduce fear of failure
- Be enthusiastic!

“...coaching education credentials and expectations are no longer simply associated with the age group one coaches (e.g., the myth that youth coaches need the least education and coaches of adults the most). Instead, it is based on the type of athletes a coach works with (participatory or performance), the athletes’ age level, and the coach’s role...”

comparing themselves to others. Finally, effective coaches foster coach-athlete interactivity by promoting discussions, asking questions, and confirming athletes’ understanding of instructions and concepts.

Several investigative teams have conducted studies to determine if interventions designed to change coaching behaviors would influence athlete outcomes such as self-esteem, participation and attrition, anxiety, and motivation. The most well-known of these lines of studies has been conducted by Ron Smith, Frank Smoll, and their colleagues from the University of Washington. They began their research by developing the Coaching Behavior Assessment System (CBAS) that assessed coaching behaviors thought to influence children, such as reinforcement, punishment, and mistake-contingent technical instruction.²⁸ In subsequent studies, observed CBAS behaviors were related to psychological growth in young athletes.²⁹ For example, positive coach reinforcement and mistake-contingent encouragement were positively related to young athletes’ post-season self-esteem, liking of teammates, and liking of their sport. Based on these findings, the researchers developed their Coach Effectiveness Training (CET) program, a workshop where coaches are taught to be more positive and encouraging in their interactions with young athletes (and in later years, a mastery-oriented environment).³⁰ Results revealed that coaches who took part in CET intervention did not differ from the control coaches in their teams win-loss records. However, CET intervention coaches differed from control coaches in their coaching behaviors (i.e., used more positive behaviors), and those coaching behaviors were related to important changes in athlete outcomes (e.g., perception of the coach as a better teacher, liking of the teammates, and increases in self-esteem). Subsequent intervention studies over the next three decades showed the CET-influenced coaching behaviors, and those behaviors were related increased enjoyment, enhanced self-esteem, lower attrition rates, and lower anxiety in young athletes.^{31,32,33} Independent investigators employing a similar

CET intervention with youth swimming coaches also found the program to be effective, although the results were specific to subgroups of athletes (girls with low self-esteem, younger participants).^{34,35} These results show that coaching behaviors can be changed through educational interventions, and the changes in coaching behaviors are linked to important psychosocial outcomes such as anxiety, self-esteem, motivation, and satisfaction, as well as athlete attrition patterns.

Other intervention studies have examined whether a coach education program was effective in increasing coaches’ knowledge of and confidence in their ability to use that knowledge with their athletes,³⁶ reducing violence in ice hockey,³⁷ and identifying concussion signs and symptoms in young athletes.³⁸ All of these studies have shown that coach training can be effective, although effects have not always been linked to athlete outcomes or been as strong as desired.



Effective Youth Coach Education and Development Principles

The research on coaching effectiveness and development has a number of implications for the development of children and youth coaches. These follow.

1. Efforts should be made to *increase educational programs* for youth sport coaches. These programs must be based not only on what coaches need to know (e.g., National Coaching Standards), but on the amount of time available (which often is much less than program organizers desire). This means that coaching educators must prioritize the most important things coaches need to know. They also need to address the question of whether they expose entry level coaches to broad, general content or focus on teaching a few key concepts in depth. Considering ways to make coaching education more efficient through the use of technology will also make programs more accessible to busy coaches.

Table 3. Strategies for Providing an Autonomy Supportive Coaching Environment

(Adapted from Mageau & Vallerand)⁴¹

- Give young athletes choices within rules and safety limits (e.g., let the players call some plays in football)
- Be sure to provide rationales for rules, limits, and tasks (e.g., we should not yell at officials, because they are human and make errors just like we do)
- Strive to understand others' feelings (e.g., a coach carefully observes how her players respond to failure)
- Allow young athletes opportunities to work independently and to take initiative (e.g., allow the athletes a few minutes each practice to coach one another)
- Provide feedback about competence in a noncontrolling manner (e.g., "Sarah, you did a nice job on that play," versus, "Sarah, if you don't get it right I will bench you")
- Do not use guilt, controlling statements, or tangible rewards to control young athletes' behaviors (e.g., a coach stops giving every player a trophy)
- Keep winning in perspective by not becoming ego-involved in competition (e.g., a coach does not get overly competitive when an opposing coach uses dirty tricks against his team)

2. Because traditional lecture-based formal education, while having some benefits, is not as effective as experiential learning, coaching educators must *build in experiential activities and exercises*, as well as coaching discussion groups. Doing so should help facilitate reflective practice. However, Lemyre, Trudel, and Durand-Bush emphasize the importance of having a knowledgeable facilitator run such groups to ensure that what is passed from coach to coach is in line with program goals and objectives.¹⁸
3. Efforts should be made to facilitate *opportunities for coaches to discuss their experiences* with other coaches during the season. This might entail implementing a mentoring system or providing times for coaches to informally get together to discuss their coaching.

4. The sport psychology research has identified a number of strategies that enable coaches to build better relationships with the youth they coach, and in turn, have important influences on key psychosocial outcomes such as self-esteem, motivation, and anxiety. *Behavioral guidelines* stemming from these programs are contained in Tables 2 and 3 and *should be incorporated* in coaching education efforts.

Summary

While more research is needed on developing effective youth sport coaches, the research that has been conducted to date has a number of implications for guiding practice. Chief among these is that youth sport coaches have important effects on young athletes. Coaches can increase their effectiveness through education. This research does little good, however, if it is not integrated into practice. All youth sport coaches should have at least minimal coaching education and comply with the *National Standards for Sport Coaches*. It is also imperative that those involved in youth sport programs make concerted efforts to systematically enhance the effective development of youth sport coaches.





References

1. Ewing ME, Seefeldt V (2002). Patterns of participation in American agency-sponsored youth sports. In Smoll FL, Smith RE (Eds.), *Children and Youth in Sport: A Biopsychosocial Perspective* (pp. 39–56). Dubuque, IA: Kendall/Hunt.
2. Smoll FL, Smith RE (Eds.) (2002). *Children and Youth in Sport: A Biopsychosocial Perspective*. Dubuque, IA: Kendall/Hunt.
3. Ewing ME, Seefeldt VD, Brown TP (1996). Role of organized sport in the education and health of American children and youth. In Poinsett A (Ed.), *The Role of Sports in Youth Development* (pp. 1–57). New York: Carnegie Corporation.
4. United States Anti-Doping Agency (2011). What sport means in America: A study of sport's role in society. *Journal of Coaching Education*, 4(1), 2–44.
5. Horn TS (2008). Coaching effectiveness in the sport domain. In Horn TS (Ed.), *Advances in Sport Psychology* (3rd ed., pp. 239–267). Champaign, IL: Human Kinetics.
6. Cote J, Gilbert W (2009). An integrative definition of coaching effectiveness and expertise. *International Journal of Sport Science and Coaching*, 4(3), 307–323.
7. Erickson K, Gilbert W (2013). Coach-athlete interactions in children's sport. In Cote J, Lidor R (Eds.), *Conditions of Children's Talent Development in Sport* (pp. 139–156). Morgantown, WV: FIT.
8. Martens R, Gould D (1979). Why do adults volunteer to coach children's sports? In Newell KM, Roberts GC (Eds.), *Psychology of Motor Behavior and Sport—1978* (pp. 79–89). Champaign, IL: Human Kinetics.
9. Gould D, Martens R. (1979) Attitudes of volunteer coaches toward significant youth sport issues. *Research Quarterly*, 50(3), 369–380.
10. Busser JA, Carruthers CP (2010). Youth sport volunteer coach motivation. *Managing Leisure*, 15, 128–139.
11. Gould D, Carson S, Blanton J (2013). Coaching life skills. In Protrac P, Gilbert W, Denison J (Eds.), *Routledge Handbook of Sports Coaching* (pp. 259–270). London: Routledge.
12. Feltz DL, Short SE, Sullivan PJ (2008). *Self-Efficacy in Sport*. Champaign, IL: Human Kinetics.
13. Gould D (1980). Educational needs of non-school youth sports coaches and higher education's role in fulfilling these needs. In *Proceedings of the National Association for Physical Education in Higher Education Annual Conference* (pp. 195–203). Champaign, IL: Human Kinetics.
14. Wiersma L, Sherman C (2005). Volunteer youth sport coaches' perspectives of coaching education/certification and parental codes of conduct. *Research Quarterly for Exercise and Sport*, 76(3), 324–338.
15. National Association for Sport and Physical Education (2006). *Quality Coaches, Quality Sports: National Standards for Sport Coaches* (2nd ed). Reston, VA: Author.
16. International Council for Coaching Excellence and the Association of Summer Olympic International Federations (2012). *International Sport Coaching Framework. Version 1.1*. Champaign, IL: Human Kinetics.
17. Wright T, Trudel P, Culver D (2007). Learning how to coach: The different learning situations reported by youth ice hockey coaches. *Physical Education and Sport Pedagogy*, 12, 1–17.
18. Lemyre F, Trudel P, Durand-Bush N (2007). How youth-sport coaches learn to coach. *Sport Psychology*, 21(2), 191–209.
19. Trudel P, Gilbert WD. (2006) Coaching and coach education. In Kirk D, O'Sullivan M, McDonald D (Eds.), *Handbook of Physical Education* (pp. 516–539). London, UK: Sage.
20. Gilbert W (2010). Understanding the change process: Valuing what it is that coaches do. *International Journal of Sports Science and Coaching*, 5(2), 173–176.
21. Gilbert W, Trudel P (2013). Defining coaching effectiveness: A focus on coaches' knowledge. In Potrac P, Gilbert W, Denison J (2013), *Routledge Handbook of Sports Coaching* (pp. 147–171). London: Routledge.

22. Gilbert W, Gallimore R, Trudel P (2009). A learning community approach to coach development in youth sports. *Journal of Coaching Education*, 2(2), 1–21.
23. Gilbert W, Trudel P (2009). Analysis of coaching science research published from 1970–2001. *Research Quarterly for Exercise and Performance*, 74(4), 388–399.
24. Gould D, Collins K, Lauer L, Chung Y (2007). Coaching life skills through football: A study of award winning high school coaches. *Journal of Applied Sport Psychology*, 19(1), 16–37.
25. Amorose, AJ, Anderson-Butcher D (2007). Autonomy-supportive coaching and self-determined motivation in high school and college athletes: A test of self-determination theory. *Psychology of Sport and Exercise*, 8, 654–670.
26. Smith RE, Smoll FL, Cummings SP (2007). Effects of a motivational climate intervention for coaches on young athletes' sport performance anxiety. *Journal of Sport and Exercise Psychology*, 29, 39–59.
27. Becker A (2013). Quality coaching behaviors. In Potrac P, Gilbert W, Denison J (Eds.), *Routledge Handbook of Sports Coaching* (pp. 184–195). London: Routledge.
28. Smith RE, Smoll FL, Hunt, EB (1977). A system for behavioral assessment of athletic coaches. *Research Quarterly*, 48(2), 401–407.
29. Smith R, Smoll F, Curtis B (1979). Coach effectiveness training: A cognitive-behavioral approach to enhancing relationship skills in youth sport coaches. *Journal of Sport Psychology* [serial online], 1(1), 59–75.
30. Smoll F, Smith R, Curtis B (1978). Behavioral guidelines for youth sport coaches. *Journal of Physical Education & Recreation*, 49(3), 46–47.
31. Barnett NP, Smoll FL, Smith RE (1992). Effects of enhancing coach-athlete relationships on youth sports attrition. *The Sport Psychologist*, 6, 111–127.
32. Smith R, Smoll FL, Barnett NP (1995). Reduction of children's sport performance anxiety through social support and stress-reduction training for coaches. *Journal of Applied Developmental Psychology*, 16, 125–142.
33. Smoll F, Smith R, Barnett N, Everett J (1993). Enhancement of children's self-esteem through social support training for youth sport coaches. *Journal of Applied Psychology*, 78(4), 602–610.
34. Coatsworth J, Conroy D (2006). Enhancing the self-esteem of youth swimmers through coach training: Gender and age effects. *Psychology of Sport and Exercise*, 7(2), 173–192.
35. Conroy DE, Coatsworth, JD (2006). Coaching training as a strategy for promoting youth social development. *The Sport Psychologist*, 20, 128–144.
36. Feltz D, Hepler T, Roman N, Paiement C (2009). Coaching efficacy and volunteer youth sport coaches. *The Sport Psychologist*, 23(1), 24–41.
37. Trudel, P, Bernar D, Boileau R, Marcotte G (2000). Effects of an intervention strategy on body checking, penalties, and injuries in ice hockey. In Ashare AB (Ed.), *Safety in Ice Hockey* (3rd vol., p. 1341). Conshohocken, PA: ASTM International.
38. Covassin T, Elbin R, Sarmiento IK (2012). Educating coaches about concussion in sports: Evaluation of the CDC's "Heads up: Concussion in Youth Sports" initiative. *Journal of School Health*, 82(5), 233–238.
39. Weinberg RS, Gould D (2011). *Foundations of Sport and Exercise Psychology*. Champaign, IL: Human Kinetics.
40. Smoll F, Smith R (1979). *Improving Relationship Skills in Youth Sport Coaches*. East Lansing, MI: Youth Sports Institute.
41. Mageau GA, Vallerand RJ (2003). The coach-athlete relationship: A motivational model. *Journal of Sport Science*, 21, 883–904.