

Conceptualization studies of the coaching process

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ABSTRACT. As the coaching process includes many elements, in the sports psychological research arena, a wide variety of coaching themes have been explored. Expert coaches utilize their acquired knowledge and practice appropriate decision making and behavior depending on the situation. Accordingly, investigating the coaching style of experienced and successful coaches can provide a model to facilitate the development of less experienced coaches. In this article the "conceptualization studies of the coaching process", were reviewed largely dealing with utilizing experienced coaches to create a coaching model. Were discussed future challenges in this area and related areas of research. It is essential to integrate various conceptual models with research developments and to utilize this body of knowledge to create a practitioner-oriented model that will be applicable to both coaching practice and athlete development.

Keywords: coaching process, cognitive conceptualization, coaching model, expert coach.

Концептуалізація навчання в тренерській практиці

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АНОТАЦІЯ. Процес тренування включає різні елементи, у тому числі й психологічні. У спортивній психології вже досліджено значне різноманіття тем, що стосуються тренерської діяльності. Тренери високого рівня використовують отримані знання та впроваджують їх у практику залежно від прийнятих рішень та поведінки в конкретній ситуації. Вивчивши коучингові стилі досвідчених та успішних тренерів, ми можемо сформулювати модель, яка сприятиме розвитку менш досвідчених тренерів. У цій статті розглянуто концептуалізацію навчання в тренерській діяльності, спираючись на досвід професійних тренерів для створення коучингової моделі. Проаналізовано труднощі, які можуть виникнути у цій та суміжних областях досліджень. Важливо інтегрувати різні концептуальні моделі з дослідницькими розробками та використовувати цю сукупність знань для створення орієнтованої на практику моделі, що буде застосована як у тренерській практиці, так і до розвитку спортсмена.

Ключові слова: тренер, коуч, тренерський процес, процес навчання, когнітивна концептуалізація, тренерська модель, експерт.

Концептуализация тренерского процесса в тренерской практике

Хироюки Хорино

АННОТАЦИЯ. Процесс тренировки включает разные элементы, в том числе и психологические. В спортивной психологии уже исследовано значительное многообразие тем, касающихся тренерской деятельности. Тренеры высокого уровня используют полученные знания и внедряют их в практику в зависимости от принятых решений и поведения в конкретной ситуации. Изучив коучинговые стили опытных и успешных тренеров, мы можем сформировать модель, которая будет способствовать развитию менее опытных тренеров. В этой статье рассмотрена концептуализация обучения в тренерской деятельности, опираясь на опыт профессиональных тренеров для создания коучинговой модели. Проанализированы трудности, которые могут возникнуть в будущем в этой и смежных областях исследований. Важно интегрировать различные концептуальные модели с исследовательскими разработками и использовать эту совокупность знаний для создания ориентированной на практику модели, которая будет применена как в тренерской практике, так и для развития спортсмена.

Ключевые слова: тренер, коуч, тренерский процесс, процесс обучения, когнитивная концептуализация, коучинговый стиль, тренерская модель, эксперт.

Introduction

In recent years, competitive sports have become far more specialized. Nowadays, in order to maintain competitiveness at an international level, short term developmental plans are not adequate. A population of grass roots athletes needs to be continually nurtured and helped to develop.

Coaches can play critical roles over a broad range of themes in the process of the popularization of sports and the development of athletes. Therefore, coaching education programs were designed to facilitate the ability of coaches have been developed, and coaching education programs are held in many countries. Unfortunately, recent research indicates that these coaching education programs have little impact on actual coach development [14, 16, 17, 31]. In particular, the structure and content of the coaching education courses often lack content on important psychological and pedagogical approaches for talent development applicable to their actual practice [29]. Nash and Sproule point out that: “coach education courses are able to deliver the sport specific content but generally are not able to fulfill the coach’s requirements when it comes to other aspects of coaching, for example, sport psychology or pedagogy” (p. 30).

Coaches wanting to develop their knowledge base and coaching capabilities would really like to grasp and understand “the tacit knowledge” of expert coaches. However, the coaching philosophies and knowledge of expert coaches have not been fully integrated and categorized. Much of their knowledge is implicit and has been acquired from their various experiences. While this knowledge is valuable and to some extent irreplaceable, it is lost when the coaches retire or change occupations.

Sport psychological research on coaching

Focus for coaching research

As the coaching process includes many elements, sport psychological research on coaching has investigated a wide variety of themes. These include coaching behavior, knowledge, interaction between coaches and athletes, and expertise.

Gilbert and Trudel [18], in a review, noted that sport psychological research on coaching increased after 1970, and that the related studies increased considerably in 1990s. Research on “coaching behavior”, which demonstrates how coaches actually put their knowledge and experience into practice, have been a main theme and have shown a consistent increase since the 1970s. After the late 1970s, the percentage of coaching science articles focusing on “characteristics and career development” increased, but there has been a recent decline. The studies on “thought”, which include the cognitive processes of expert coaches, have increased. Topics in this area include decision-making, knowledge, and expertise. According to Nash and Martindale [27], from 1993 to 2009, the most researched aspects in the coaching arena involved the developmental process, coaching behavior, skills, and decision-making. In addition,

studies on expert coaches increased after 2000. The developmental process wherein coaches become expert involves all aspects of learning. In addition to formal coaching education courses, information garnered from casual and informal sources is quite important.

Research methods

Earlier studies were focused on quantitative analysis, and typically utilized some form of the questionnaire approach. In recent years, the most popular method has shifted to qualitative methods, which often involve an interview. Such interviews can be in depth, open-ended, and semi-structured. When using the qualitative method, data analysis is often performed in the following order: After interviews, the narrative is transcribed verbatim, and the transcribed data are inductively analyzed according to the specific procedures and techniques. These can be based on an applied theory, such as the grounded theory [33]. Another procedure involves the inductive analysis process, in which conceptualization is proceeds as follows: First, meaningful units are extracted from the interview transcripts (coding meaningful text segments, or creating tags). Second, units of similar meaning are regrouped into those with the same properties, categories, and components in stages. Based on such an analysis, researchers can evaluate the interactions between the components, and construct a conceptual model or theory inductively [9].

The mixed method approach has become the next most popular. This method involves the observation of coaches during training sessions, as well as the use of questionnaires and some form of interview. Mixed methods are thought to be beneficial in mixing the valuable aspects of both quantitative and qualitative designs and allow an enhanced triangulation, which provides a more robust development of theory. The mixed approach also has the potential to allow a more comprehensive understanding of the research situation [27]. Because of these advantages many researchers in sport psychology have utilized a combination of quantitative and qualitative methods to investigate various domains of coaching with.

Along with a transformation of research topics and methodology, coaching has attained a more distinct status and, “Coaching is no longer a subset of physical education or sport psychology but is rather an established vocation for research” [1].

In addition, “the conceptualization of the coaching process” using a qualitative analysis has become the main theme of sport psychological researches on coaching. One purpose of this article is to review the “conceptualization studies of the coaching process”. This will be based mainly on a model [10] of the expert coach. I will also discuss future challenges in research related to coaching.

Leadership behavior and cognitive processes of coaches

Over the last three decades, researchers investigating coaching have made an effort to clearly define, and

increase the quality of coaching. Early research in this domain aimed to accurately describe the behavior of expert coaches in order to transmit a desirable coaching style to novice coaches. The purpose of later studies shifted to an investigation of “the cognitive process of coaching”. In the coaching process a coach makes good decisions and utilizes effective actions in three areas: training, competition, and planning.

Chelladurai [7] described the leadership qualities of coaches with the conceptual “Multidimensional model”. In his model, coaching behavior is influenced by three factors: situational, leader, and member characteristics. In addition, the coaching behavior is classified into three types: required, actual, and preferred. Finally, actual behavior was prescribed by two other behaviors, and three behaviors were united in their effect on the performance and satisfaction of the members.

Coaching process and application of models

After Chelladurai [7], many researchers have investigated the knowledge and behavior of expert coaches to conceptualize their coaching process. In their studies, researchers utilized the approach of breaking down the complicated cognitive processes of practical coaching into more simple constituent components, and then integrated these constituents in order to build a conceptual model.

Côte et al. [10] support the validity of perceptual modeling as a way to explain the coaching process as follows: “From a cognitive perspective, the modeling system,

elaborated in an attempt to explain how expert coaches utilize knowledge to develop elite gymnasts, was consistent with theoretical definitions of mental models [20, 21, 23]. According to Côte et al. [10], generally, these authors suggested that “mental models were specific knowledge structures that were constructed mentally to represent various situations” (p. 13). Moreover Kitamura et al. [25] noted, “In the coaching scene, ...A coach adopts a coaching behavior based on a prospect how a player will recognize the behavior and how coaching behavior will influence the athlete’s performance. The frame deciding the behavior can be explained by mental model” [23].

As the above authors have noted, it is very effective to construct mental models of expert coaches to comprehend the processes underlying their methods of coaching. These processes allow expert coaches to utilize the knowledge that they have acquired through various experiences, and aids them in the practice of appropriate behavior and good decision-making as required by the situation. Accordingly, constructing a model that depicts their coaching style can be a very effective way of facilitating the development of coaches desirous of improving.

Research for “Conceptualization of Expert Coaches”

Cote et al. [10, 11] in a pioneer study, explored cognitive processes of expert coaches utilizing the qualitative research method. In the wake of their studies, many researchers came to investigate the coaching process of various individual and team sports. Such studies are shown in Table 1.

Author	Theme	Sport	Components
Côte et al. (1995a)	Coaching model (knowledge)	Gymnastics	Competition, training, organization
			Coach's personal characteristics
			Gymnast's personal characteristics and level of development, contextual factors
Côte et al. (1995b)	Knowledge	Gymnastics	Minimally involved in competition
			Coach involvement in training, intervention style, technical skills, mental skills
			Simulation: Teaching progressions, being supportive, helping athletes to deal with stress
Kitamura et al. (2005)	Coaching model	Football	Training, motivating, supporting
Koga and Horino (2012)	Coaching model	Soccer	Development of life skill
			Development of performances
			Coaches' behavior and approach
Kato and Horino (2011)	Coaching model	Soccer	Sincere attitudes for anything
			Supporting humanistic education
Nash et al. (2011)	Coaching practice	Multi sports: individual & team sports	Long-term approach
			Authentic coaching environment
			Creating a learning environment
			Quality and quantity of training sessions
Bennie and O'Connor (2010)	Coaching philosophy	Rugby, cricket	Player development on and off the field,
			Role of the coach, develop the player and the person
			Educate the players, not purely focused on results
Bennie and O'Connor (2011)	Coaching model	Rugby, cricket	The coach, coaching skill, the environment

Author	Theme	Sport	Components
Abraham et al. (2006)	The coaching process: the coaching schematic	Multi sports: individual & team sports	Roles, goals, typical actions
			Required knowledge
			Support for the schematic
			Factors influencing development
Côte and Sedgwick (2003)	Coaching behavior	Rowing	Plan proactively, create a positive training environment
			Facilitate goal setting, Build athletes' confidence
			Teach skills effectively
			Recognize individual differences
			Establish a positive rapport with each athlete
Bloom et al. (1997)	Routines	Basketball, field hockey, ice hockey, volleyball	Game-day routines for coach and team
			Coaches' emotions and behaviors
			Team meeting, game evaluation
Bloom and Salmela (2000)	Personal characteristics	Basketball, field hockey, ice hockey, volleyball	Desire to learn
			Ways of acquiring knowledge
			Personal approach to coaching
d'Arripe-Longueville (1998)	Effectiveness of inter actions between coaches and athletes	Judo	Stimulating interpersonal rivalry
			Provoking athletes verbally, displaying indifference
			Entering into direct conflict, showing preferences
			Developing specific team cohesion
Irwin et al. (2004)	Origin of coaching knowledge	Gymnastics	Mentor coaches, trial and error/ experimentation
			Past experiences, coaching courses, squad sessions, observation, coaching manuals, foreign coaches
Côte and Gilbert (2009)	Definition and required for expertise	Artistic gymnastic	Coaches' knowledge
			Athletes' outcomes
			Coaching contexts

Early researches

In the pioneer study of Côte et al. [10], they conducted semi-structured interviews, in-depth and open-ended, with 17 expert gymnastics coaches who were involved producing Olympic level athletes. The goal of the investigators was to conceptualize the coaches; knowledge. They analyzed their qualitative data utilizing the grounded theory methodology [19, 33]. As shown in Fig. 1, six components emerged from their analysis. As a result, they proposed a model of the cognitive processes of expert coaches, entitled the "Coaching model". Côte et al. proposed that the coaching process (knowledge) was categorized into three central components: competition, training, and organization. Moreover, they denoted three variables. These were the coach's personal characteristics, the athletes' personal characteristics and level of development. They also proposed some contextual factors, which were defined as peripheral components. Their stated goal was to aid in the development of athletes by creating a model describing how expert coaches function Fig. 2.

Using a similar qualitative analysis, Côte et al. [11] also investigated the knowledge base of expert coaches. They revealed that expert coaches were minimally involved with the athletes in competition and but in training they were involved with teaching progressions, being supportive, and helping athletes to deal with stress. Succeeding researchers generally utilized the procedure of Cote et al. [10, 11]

to investigated, identify, and conceptualize the coaching processes of expert coaches. The conceptualization of the cognitive process was expanded to team sports by Bennie and O'Connor [4].

Kitamura et al. [25] demonstrated that coaching model (coaching mental model) of expert high school youth football coaches was comprised of three categories: training, motivating and supporting. Koga and Horino [26] performed a study to compare professional youth football clubs to high school football clubs. They found no difference in the coaching model that described coaches at the two levels. The coaching model of expert youth coaches consisted of three categories: development of life skill, development of performance, and the coaches' behavior and approach. Kato and Horino [24] also investigated the coaching model of local youth coaches at the final 16 in a prefectural tournament. The coaching model for these coaches consisted of three components: diligent attitudes for football, supporting, and humanistic education. Although the components' names were different among the three studies, the youth coaches all regarded training (development of the sport performance), education (development of a humanistic performance), and support (organization of environment) as key components of their coaching process. "The humanistic performance" involves a holistic embraces of abilities that allow the players to make emotional, psychological, and social adjustments which allow them to

adequately deal with various situations and in the achievement of their goals. From the above conceptualizations, it is clear that the extracted components of each coaching model are very similar to each other. Despite differences of the club attributes and the competition level, the coaching models of youth coaches have similar characteristics in that they regard the development of a humanistic performance as an essential part of youth development along with the sport performance. The expert coaches instructed and supported their athletes in the development of both athletic and humanistic performance.

Nash et al. [30] investigated the coaching practice of expert coaches in several sports. Their observations indicated that the experts' coaching practice consisted of four themes: a long-term approach, an authentic coaching environment, the creation of a learning environment, and the quality and quantity of training sessions. Furthermore Bennie and O'Connor [3, 4] explored professional coach and player perceptions of effective coaching. They created an "Effective Coaching Model (ECM)" for professional sports that contained three major concepts: the coach, coaching skills, and the environment. Bennie and O'Connor [3] described the coach as follows: "coaches in these professional settings develop programs to assist players in acquiring on- and off-field skills. In addition to this, there is a tendency to focus on learning and improvement as opposed to a win-at-all-costs attitude. These philosophies highlight elements of a Humanistic approach to coaching which focuses on the total development of the person" (p. 310). Thus, the professional coaches as well considered humanistic development to be one of the most important elements of their coaching.

The research summarized in this section clearly indicates that, irrespective of competition level, club affiliation, or the athletes' age, expert coaches place a strong emphasis on "humanistic education" in their approach to coaching. These coaches are eager to develop not only good athletes but also good people.

Schematic Model: structure of expert coaches

Abraham et al. [2] investigated coaching process of expert coaches and concluded that it could be described by six general categories: roles, goals, typical actions, required knowledge, support for the schematic, and factors influencing development. They also offered "the Coaching Schematic" as a model which organized the coaches' knowledge structure. They held that both implicit and explicit aspects of their schematic arrangement were practiced by most expert coaches. "But it is important to note that this knowledge is used to understand their athletes better... the schematic does indeed accurately match the thought processes and decision making of expert coaches" (p. 562). They declared, "Our argument would be that, given the broad range of concepts and conceptions and knowledge within the schematic, it should represent a good starting point, through context-specific targeting of the most relevant factors, for the design of effective coach

development curricula and practices for volunteer through to expert coaches" (p. 563).

In the terms of conceptualizing the cognitive process of the coaching process as a frame, their scheme would seem to be very effective. As there are still few studies that evaluate the Schematic Model, further studies are necessary.

Cognitive conceptualization of other specific subjects

Cote and Sedgwick [12] interviewed elite rowing athletes and their coaches. They conceptualized coaching behavior of the expert coaches as characterized by seven components. The components are organized into a three circle hierarchy which corresponds to the different types of interaction between the coach and athlete: environmental maintenance, technical knowledge, and an interpersonal skill. They declared that the various components were interdependent and interactive within the same level and across different levels of behavior.

Bloom and Salmela [6] investigated the personal characteristics of expert coaches in team sports. In this study, the personal characteristics of expert coaches were condensed into three categories: desire to learn, ways of acquiring knowledge, and personal approach to coaching. These investigators felt that the coaches' personal characteristics might be more important than a simple understanding of their technical and tactical skills.

d'Arripe-Longueville [15] investigated the effectiveness of interactions between coaches and athletes of judo. They revealed that the strategies of expert judo coaches could be categorized by six strategies: stimulating interpersonal rivalry, provoking athletes verbally, displaying indifference, entering into direct conflict, developing specific team cohesion, and showing preferences. They demonstrated that the coach-athlete relationships of expert Judo coaches were different from the expert coaches in other sports in that Judo coaches used negative feedback (for example, encouraged rivalries) and tended to not provide social support for the athletes. This study suggests that the coaching process may be different for each sport. Further investigation in this area will determine the extent that such differentiated occur.

Expertise of coaches

The coaches develop their coaching ability through formal (coach education programs), nonformal (small group seminars) and informal (daily experiences and exposure to the environment) [31]. Expert coaches can effectively handle a broad range of situations that frequently occur in the practice of coaching. In addition to scientific knowledge, practical knowledge acquired through experience is required in many coaching situations. Piggott [32] noted that "coaching knowledge and practices, in both elite and non-elite coaches, are derived overwhelmingly from informal and non-formal sources" (p. 538). Therefore it is important to identify the factors required for developing the expertise of expert coaches and to use this information to aid in the development of novice coaches.

Irwin et al. [22] conceptualized the process of knowledge acquisition by expert coaches. They demonstrated that most expert coaches “identified that knowledge acquisition was facilitated mostly through interactive coaching clinics and mentorships that promoted critical inquiry and active experimentation” (p. 425). They felt that experts developed their own knowledge from practical experience, including trial and error, gained from earlier coaching involvement.

Cote and Gilbert [8], in an effort to define the coaching effectiveness and expertise, and proposed that the definition was comprised of three components: coaches’ knowledge, athletes’ outcome, and coaching context. They concluded that “a definition of coaching effectiveness and expertise should integrate these three components by considering the interaction of a coaches’ knowledge and athletes’ outcomes in specific coaching contexts.” (p. 309). Furthermore they demonstrated that coaching effectiveness and expertise should require professional, interpersonal, and intrapersonal knowledge and should develop the athletes’ 4C’s: competence, confidence, connection, and character. As there exist four sport contexts depending on the players’ age, they insisted that “Coaching effectiveness should be defined according to how coaches meet their athletes’ needs and help them fulfill their goals, as defined by the specific coaching context” (p. 315). Four themes were proposed by Nash et al. [30] as the coaching practice of expert coaches. These are similar to those of Cote and Gilbert [8].

Nash and Sproule [28] compared an expert swimming coach to a novice coach relative to the construction of their knowledge and the practical application of their learning experiences. The expert coach acquired experiences in a more efficient way than did the novices. They suggested that it was very important for novice coaches to ask questions of both their colleagues and themselves in order to develop their coaching ability.

As seen above, recent research has focused on a wide range of subjects regarding the coaching process and how the skills of expert coaches can be conceptualized and placed into cognitive categories. Such conceptualization can make it easier for novices to understand the coaching process of expert coaches. However, more investigation is needed to better understand such a complicated skill more completely.

Discussion

In the last few decades, various conceptual models of the complicated coaching process have been proposed. As the result of overviewing recent studies, it is considered that expert coaches place significant importance on “development of the sport performance”, “development of the humanistic performance”, and “supporting (organization)”.

In the coaching practice, however, competition level, age, and many environmental factors influence the coaching process. In addition, conceptual models of coaching have been constructed from various theoretical grounds including leadership, expertise, coach-athlete relationships, motivation, and education [8]. Because of such a highly-diversity in the coaching process, the focus in recent studies has been very wide-ranging. As a result, although many models and conceptual organizations have been proposed, each model tends to be effective only in a limited situation and sport context. Bennie and O’Connor [4] noted, “Many of the existing models have not attempted to symbolize the entirety of coaches’ actions but rather provide representations of key parts of the coaching process” (p. 98). Thus, it has not yet been possible to establish a general conceptualization of effective coaching in various coaching situations [1, 13, 34]. Cote and Gilbert [8] noted that “in order to facilitate integration of findings across diverse lines of research, discussion of results within individual studies should be re-framed within an integrative theoretical framework of coaching effectiveness” (p. 318). Thus the need for theoretical integration across various conceptual models has been pointed out. A fully integrated model has to be able to apply to most or ideally all sports contexts. However, this challenge has yet to be met.

Nash and Martindale [27] observed that “We need to establish some effective criteria and base characteristics of expertise from which participant selection, study focus and eventual interventions may evolve” (p. 992). As they state, the criteria for identifying expert coaches are lacking. In addition, so as to facilitate validation of data, researchers will need to use the triangulation method. For example, when interview data are combined with measures from systematic observation or questionnaires, the mixed methods can improve the validity of the analysis. In order to resolve these methodological and procedural challenges, further studies which utilize triangulation to investigate a particular situation are needed.

Finally, it is most important for researchers to focus on both athletes and practitioners. Instead of a model suggested by strictly scientific approaches, coaches require a more practitioner-oriented model. Such a practical model can enhance the applicability of the complicated interaction between coaches and athletes, and can facilitate the development of both the coaches and the athletes.

In sum: First, it is important to integrate various conceptualized models by means of an accumulation of further research. Second, it is essential to propose a practitioner-oriented model that is applicable to both coaching practice and athlete development.

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