Asian Journal of Coaching Science
Vol. 1, No. 1, 24-36 (December, 2017)
DOI:10.29426/ajcs.201712_1(1).0003

Expert Strength and Conditioning Coaches Interact More with Athletes than Beginner

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Received: November, 2017
Accepted: November, 2017

Abstract

The purpose of this study was to clarify the differences in coaching behaviors between expert and beginner strength and conditioning (S&C) coaches in Japan using a systematic observation method, i.e., modified Arizona State University Observation Instrument (ASUOI). Participants were three expert S&C coaches (11–25 years of experience) and three beginner S&C coaches (0.3–1 year of experience). As a result, the expert coaches spent more than half of their session time in Concurrent Instruction, Silent Monitoring, Post Instruction, and Other, and the beginner coaches exhibited more than half of their behaviors with Silent monitoring and Other. The beginner coaches spent less time in interacting with and teaching to the athletes compared to the expert coaches. In conclusion, beginner S&C coaches could be advised to engage in acquiring not only professional knowledge but also interpersonal knowledge by effectively incorporating formal, non-formal, and informal learning.

Keywords: strength and conditioning coach (S&C coach), coaching behavior, systematic observation, instruction, weight training

Introduction

Researches on effective coaching have been actively conducted in recent years. As a result of these researches, the features of effective coaching have been gradually clarified. For example, it has been revealed that an excellent coach improves competence, confidence, relationship, and character of athletes, and helps the athletes to demonstrate superior performance (Côté, Bruner, Erickson, Strachan, & Fraser-Thomas, 2010). Meanwhile, coach behaviors could also lead to decreased player's motivation, dropout, burnout (Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2009), and injuries (Ekstrand et al, 2017).

In terms of quantifying coaching behaviors, systematic observation methods, in which researchers observe coaching behaviors of a coach and systematically assign them to pre-determined coaching behavioral categories, have been developed. For example, Coach Behavior Assessment System (CBAS; Smith, Smoll, & Hunt, 1977) and Arizona State University Observation Instrument (ASUOI; Lacy & Darst, 1984, 1989) were developed and have been used to clarify coaching behaviors. In recent years, several studies using ASUOI reported coaching behaviors in tennis (Claxton, 1988), volleyball (Lacy & Martin, 1994), and soccer (Cushion & Jones, 2001; Potrac, Jones, & Cushion, 2007). Legendary American Basketball coach, John Wooden's coaching behaviors were also reported (Lacy & Darst, 1984). About half (50.3%) of his coaching behaviors were verbal instructions, which was 15% higher than that of Frank Kush, also a prominent American football coach. These studies could create discussions over what and how to coach to achieve effective athlete performance improvement. However, very few studies on coaching behaviors have been conducted in the strength and conditioning (S&C) arena.

As mentioned above, the impact of the coach on the athlete is significant, and it is important for the coach to learn and develop his/her coaching skills in order to effectively support the athlete endeavor. The International Sports Coaching Framework (ISCF) developed by the International Council for Coaching Excellence (ICCE), Association of Summer Olympic International Federations (ASOIF) and Leeds Beckett University (2013) mentioned that coaches' learning opportunities could be categorized as mediated learning and unmediated learning. Mediated learning includes formal learning that refers to an educational activity in an institutional educational system such as high school and university education, and non-formal learning that refers to educational activities outside the formal educational system. Non-formal learning tends to be short term and voluntary nature and organized with a certain purpose like conference, seminars, workshops, mentoring, and so on. Unmediated learning includes informal learning, which is a non-organizational life-long self-directed learning based on everyday experience, occurring especially in on-the-job learning situations.

It is well documented that coach development could be much more effective, if the coach reflects and learns through the experience at their coaching site (Cushion, Armour, & Jones, 2003; Erickson, Bruner, MacDonald, & Côté, 2008; Mallett, Rynne, & Dickens, 2013). This means that unmediated learning has greater effects on learning of coaches than mediated learning. In order to maximize learning effects, it is necessary to learn continuously and incorporate appropriately formal learning, non-formal

learning, and informal learning (Mallett et al., 2013). With regard to non-formal and informal learning situations, coaches are reported to be supported by mentors or their confidants in dynamical networks or community of practice (Occhino, Malett, & Rynne, 2013). However, these situations are very limited in Japan, where newcomers are supposed to "steal" the skills from seniors. For S&C coaches, formal and non-formal learning are offered by qualification programs and other seminars and workshops organized by National Strength and Conditioning Association (NSCA) Japan and Japan Association of Trainers and Instructors (JATI). Those seminars provide information on sports sciences knowledge and coaching techniques in the field of S&C. Although it is possible to say that the opportunities of mediated learning are abundant, unmediated learning opportunities for Japanese S&C coaches are limited.

Through variety of learning, coaches acquire higher levels of expertise. Schempp (2012) classified the process from beginner to expert into the following five stages: Beginner, Capable, Competent, Proficiency, and Expert. Not all coaches can reach the Expert stage. It is very important for coaches to know how to structure their own learning to become more capable coaches, hopefully up to the expert. Trudel and his colleagues (Trudel & Gilbert, 2013; Trudel, Rodrigue, & Gilbert, 2016) described a coach's journey from Newcomer, through Competent and Super Competent, to Innovator. These scholars agreed that the importance of mediated learning is greater at earlier stages of coaches' journey and internal learning would become to play critical roles at later stages. Of course, how coaches learn would be unique to each coach. Although idiosyncratic nature of coaches' learning was reported (Werthner & Trudel, 2009), it is probable that coaches can benefit greatly by observing and interacting with expert coaches to hone their coaching crafts. Knowledge of how expert S&C coaches coach would help less experienced S&C coaches. However, these data have not been available so far.

The purpose of this study was then, to clarify the difference in coaching behaviors between expert S&C coaches and beginner S&C coaches in Japan by quantitatively comparing the coaching behaviors using the systematic observation method. This research is thought to be able to provide some insights for beginner S&C coaches who wish to horn their coaching crafts to become expert coaches.

Method

Subjects

The subjects in this study were six S&C coaches in total, including three expert coaches and three beginner coaches. After the detailed explanations of the purpose and the procedure of the study, these subjects gave their written consents. The expert coaches had at least 10 years of experience as S&C coaches and had coached Japanese national teams or top league teams. The beginner coaches in this study had less than 3 years of coaching experience as S&C, since a beginner coach usually needs 1.5–3 years to become a competent coach (Schempp, 2012). The profiles of the six S&C coaches were summarized in Table 1.

Coaching Environment

Effective coaching is context specific (Côté & Gilbert, 2009). In order to control the coaching context, the same athletes and the gym

Table 1
The Profiles of the Coaches

	Experience (years)	Supporting athletes/teams
Expert coach		
A	11	Japan top league football team/University women's volleyball team.
B	12	Japan men's wrestling athlete.
C	25	Japan women's national volleyball team.
Beginner coach		
D	0.3	High school American football team.
E	1.3	High school American football team.
F	1.0	High school rugby team.

were prepared for the coaches by the authors. These athletes were 12 collegiate volleyball players (18–22 years old) belonged to the same team, who had been conducting their S&C sessions by themselves and never coached by S&C coaches. None of the S&C coaches in this study had met these athletes before. The athletes were not informed with the coaches' profiles. The gym used in the present study was the one these athletes trained usually, which was well equipped with free weights, machines and other training apparatuses.

Data Collection and Analysis

Each of the S&C coaches conducted a session weekly for three weeks, which means that the data collection phase of this research lasted 18 weeks. The length of each session was 60 mins. The coaches were allowed to freely determine the contents of the sessions. During the sessions, coaching behaviors and voices of each coach were recorded using a video camera and a remote microphone.

The video footages were then analyzed using the interval recording method proposed by the previous literatures (Lacy & Darst, 1984, 1989). Lacy and Darst (1984, 1989) described two methods to analyze coaching behavior, i.e., observing an entire session or observing predetermined period of time during a session. The analysis in this study was conducted on the first 10 mins after warm-up, 10 mins in the middle and last 10 mins.

The systematic observation method used in this study was a modified version of ASUOI (Massey et al, 2002). Identified and recorded behaviors were shown in Table 2. Furthermore, Instructional Category (Pre Instruction, Concurrent Instruction, Post Instruction, Questioning, Manual Manipulation, Positive Modeling, and Negative Modeling) and Feedback Category (Hustle, Praise, and Scolds) were also analyzed according to Massey et al. (2002). The number and ratios of these behaviors were then calculated for further analyses.

Reliability and Validity of the Data

The reliability of the data in this study was examined by evaluating the degree of correspondence among interval records recorded by different observers (Siedentop, 1983). Three researchers participated in the observation process of this study. Among them,

Table 2
Modified ASUOI

Category	Description
Pre Instruction	Initial information given to athletes preceding the desired action to be performed.
Concurrent Instruction	Cues or reminders given during the actual lift.
Post Instruction	Correction, re-explanation, or instructional feedback given after the actual exercise.
Questioning	Any question to athletes concerning strategies, lifting techniques, assignments, or personal issues involving the athlete.
Manual manipulation	Physically moving an athlete to the proper position or though the correct range of motion of a lift.
Positive modeling	A demonstration of correct performance of a skill or lift.
Negative modeling	A demonstration of incorrect performance or technique.
Hustle	Verbal statements intended to intensify the efforts of the athletes.
Praise	Verbal or nonverbal expressions of acceptance.
Scolds	Verbal or nonverbal expressions of displeasure.
Management	Verbal statements related to organizational details of training sessions.
Silence	Periods of time when the coach is not talking and not engaged with the athletes.
Silent monitoring	Periods of time in which the coach is silent, but engaged in monitoring the athletes.
Other	Any behavior that cannot be heard or does not fit into the other categories.
Coach participation	Physical involvement by the coach.
Coach interaction	Conversation with other coaches.

two were faculty staff members in the coaching studies lab and the other was a graduate student conducting a research on coaching. A video clip in which the first author (also an S&C coach) was delivering a similar session was used to check the degree of correspondence among the observers and train them until more than 80% correspondence rate was obtained.

After this training process, three observers underwent the observation process and yielded the data which showed more than 80% of correspondence among the three. When an ambiguous behavior was observed, the first author contacted the coach to clarify coach's intention of that behavior.

The final degree of correspondence was also checked after the observation process using the video clip which was used in the observation training process, and it was revealed to be over 80%.

Results

Expert Coaches

The summary of the observation for the expert coaches was shown in Table 3. Concurrent Instruction showed the highest score of 17.84% among the behaviors of the expert coaches in this study. The second, third, and fourth scores were 16.67%, 12.65%, and 10.46% in Silent Monitoring, Post Instruction, and Other, respectively. These four categories occupied more than the half (57.62%) of the overall behaviors. Management was the fifth

Table 3
Summary of Coaching Behaviors for the Expert Coaches

Category	Minimum	Maximum	*Mean*	Rank order
Instructional Category				
Pre Instruction	8.06%	10.46%	8.92%	6
Concurrent Instruction	9.81%	28.43%	17.84%	1
Post Instruction	8.43%	16.76%	12.65%	3
Questioning	1.94%	9.63%	5.37%	9
Manual Manipulation	2.22%	3.15%	2.84%	10
Positive Modeling	2.87%	10.93%	6.39%	7
Negative Modeling	0.19%	2.31%	1.54%	11
Feedback Category				
Hustle	0.19%	0.74%	0.43%	13
Praise	1.76%	12.22%	6.05%	8
Scolds	0.00%	0.00%	0.00%	15
Management	9.07%	10.56%	9.97%	5
Silence	0.19%	1.11%	0.77%	12
Silent Monitoring	14.63%	18.15%	16.67%	2
Other	5.74%	12.96%	10.46%	4
Coach Participation	0.00%	0.19%	0.06%	14
Coach Interaction	0.00%	0.09%	0.03%	15

and accounted for 9.97%. Scolds could not be observed in any cases.

Beginner Coaches

The summary of the observation for the beginner coaches was shown in Table 4. The most recorded behavior of the beginner coaches in this study was Silent Monitoring, which corresponded to 33.77%. Other was the second most recorded behavior and counted as 22.16%. In the beginner coaches, these two categories, i.e., Silent Monitoring and Other, accounted for more than half (55.93%) of the overall behaviors. The third and fourth categories were Management and Questioning and recorded as 9.91% and 7.35%, respectively.

Instructional Category and Feedback Category

For the expert coaches, whilst Instructional Category accounted for 55.55% of the total, and Feedback Category accounted for only 6.48% (Table 5). On the other hand, Instructional Category and Feedback Category accounted for 29.14% and 4.32% of the total for the beginner coaches, respectively. Furthermore, when paying attention only to the categories actually instructed by words, i.e., Pre Instruction, Concurrent Instruction, and Post Instruction, the expert coach spends 39.41% of the total, and the beginner coach spends 14.70%. The expert coaches in this study were revealed spending half of the session time on the Instructional

Table 4
Summary of Coaching Behaviors for the Beginner Coaches

Category	Minimum	Maximum	*Mean*	Rank order
Instructional Category				
Pre Instruction	2.50%	3.33%	2.87%	9
Concurrent Instruction	3.61%	10.09%	5.90%	6
Post Instruction	3.15%	9.17%	5.93%	5
Questioning	1.94%	10.46%	7.35%	4
Manual Manipulation	0.28%	5.46%	2.07%	10
Positive Modeling	0.83%	6.76%	4.51%	7
Negative Modeling	0.00%	1.48%	0.52%	13
Feedback Category				
Hustle	0.00%	1.85%	0.65%	12
Praise	2.22%	5.46%	3.67%	8
Scolds	0.00%	0.00%	0.00%	16
Management	3.52%	12.59%	9.01%	3
Silence	0.37%	2.13%	1.20%	11
Silent Monitoring	25.00%	39.07%	33.77%	1
Other	8.15%	39.63%	22.16%	2
Coach Participation	0.00%	0.56%	0.25%	14
Coach Interaction	0.00%	0.46%	0.15%	15

Table 5
Observed Behaviors Comparing Expert and Beginner Coaches

Category	Expert	Beginner
Instructional Category	55.55%	29.14%
Feedback Category	6.48%	4.32%
Management	9.97%	9.01%
Silence	0.77%	1.20%
Silent Monitoring	16.67%	33.77%
Other	10.46%	22.16%
Coach Participation	0.06%	0.25%
Coach Interaction	0.03%	0.15%

Category, and in fact they spent the whole third of the time in communicating with the athletes. By contrast, the beginner coaches in this study spent one third of the session time on the Instructional Category, and the time actually communicating verbally during the sessions was approximately one fifth of the session time. In other words, the beginner coaches spent less

time in interacting with and teaching to the athletes, compared to the expert coaches in this study.

Discussion

The purpose of this research was to elucidate the behavioral differences between expert and beginner S&C coaches in Japan. For this purpose, coaching behaviors of three expert S&C coaches and three beginner S&C coaches were analyzed using the systematic observation method. As a result, the expert coaches spent more than half of their session time in Concurrent Instruction, Silent Monitoring, Post Instruction, and Other, and the beginner coaches exhibited more than half of their behaviors with Silent Monitoring and Other. When analyzing their behaviors with Instructional Category and Feedback Category, it was revealed that the beginner coaches spent less time in interacting with and teaching to the athletes compared to the expert coaches. In the following part, (1) differences between the expert and beginner S&C coaches, (2) implications to become an expert S&C coach, and (3) limitations of this research will be discussed based on the results obtained.

Differences between the Expert and Beginner S&C Coaches

The major finding of the present study was the difference between the time spent by the expert S&C coaches and that of the beginner S&C coaches in interacting with the athletes. The expert coaches spent longer time to interact with the athletes than the beginner coaches. In contrast, the beginner coaches spent their time on Other actions, which could not be categorized in any of the predetermined coaching behaviors described in the previous literature (Massey et al., 2002).

The expert coach of this study spent 55.55% of their time in the Instructional Category (Pre Instruction, Concurrent Instruction, Post Instruction, Questioning, Manual Manipulation, Positive Modeling, and Negative Modeling). This result was in good accordance with the previous literatures (Claxton, 1988; Isabel, António, António, Felismina, & Michel, 2008; Potrac et al., 2007). High school tennis coaches who had better win-lose scores exhibited more interactions using verbal instructions (Claxton, 1988). Potrac et al. (2007) also reported that English professional soccer coaches (n = 4) spent 54.45% of their coaching time in verbal instructions. Portuguese volleyball coaches (n = 11) were reported to use verbal instructions at the rate of 35.94% (Isabel et al., 2008). These evidences jointly imply that expert coaches in different sports tended to verbally instruct athletes more, even in S&C. To support this, Tinning (1982) also stated that verbal instructions were the important aspects of the coach.

One of the reasons that the expert coaches could give more verbal instructions or exhibit more interactions with athletes could be due to their rich professional knowledge. If they could not detect any fault or flaw in athletes' performance, it would be almost impossible to point it out and correct it. Error detection can be done by referencing what a coach observes to the proper model he/she has in mind. Sound professional knowledge underpins their expert performance as S&C coaches. Turning our attention to the beginner coaches in the present study, they spend 33.77% of their coaching to observe the athlete silently. This was almost double of the expert coach, i.e., 16.67%. However, the qualities of Silent Monitoring could be

quite different between the two coach groups. Because of the lack of professional knowledge in the beginner coaches, their Silent Monitoring could be passive Silent Monitoring while that of the expert coaches could be active Silent Monitoring conducting scanning pros and cons of athletes' performance and structuring how to intervene to trigger performance improvement.

Another possibility can be interpersonal knowledge of coaches. Coaching is a complex, reciprocally-influential process based on systems of social interactions (Côté & Gilbert, 2009). Côté and Gilbert (2009) stated that the interpersonal knowledge is the important knowledge that coaches should have to deliver effective coaching to their athletes. It is not clear that they could become expert because they had rich interpersonal knowledge. However, the important implication from the results of the present study and other previous literatures would be the fact that the expert coaches exhibit better interpersonal knowledge in all cases. Interpersonal knowledge, however, should be considered not only from the time or frequency of interactions between coaches and athletes but also from quality of interactions. In the present study, quality of interactions was not assessed fully, but it can be said that assigning coaching behavior into different categories means that the observers were reading qualities of interaction in part. For example, if an observer recognizes a certain behavior as threatening, he/she would categorize it in Scold or Other. Keeping these in mind, these data have to be interpreted.

Another consideration with regard to these two knowledge, i.e., professional and interpersonal knowledge, could be the interaction between the two. If you have more professional knowledge, it would be easier to communicate with others using your rich professional knowledge and deepen conversation. When considering the interaction from a different perspective, professional knowledge could be deepened by interacting with others. These two knowledge were clearly mentioned as prerequisites to enable effective coaching in many literatures (e.g., Côté & Gilbert, 2009; ICCE et al., 2013). Coaches also need to possess intrapersonal knowledge to keep developing professional knowledge and interpersonal knowledge (Côté & Gilbert, 2009).

Implications to Become an Expert Coach

There is no termination of a journey to become a better coach. Even serial winners continue to learn (Lara-Barcial & Mallet, 2016). Expert coaches have been able to become so because they kept honing their crafts (Schempp, 2012).

In the present study, the beginner coaches were found to be engaging less with the athletes during training sessions compared to the expert coaches. As discussed earlier, this might be due to lack of professional knowledge as well as interpersonal knowledge. Some of professional knowledge can be obtained through formal and non-formal learning situations. For example, knowledge of sports sciences can be taught in formal coach educations like university degree programs, national coaching qualification programs, or more specifically S&C coaching qualification programs such as NSCA qualifications and JATI. Piles of research evidence show that coaches learn more in other type of learning, i.e., informal learning situations where coaches often engage their learning on their own (Cushion et al., 2003; Erickson et al., 2008; Mallett et al., 2013; Trudel et al., 2016). Among professional knowledge, declarative type of knowledge (what to do type of knowledge) can be transmitted from

person to person in formal learning situations, however procedural knowledge (how to do type of knowledge) can be learnt well by actually doing it. Not only procedural professional knowledge but also interpersonal knowledge can be learnt much more effectively by actually experimenting the target skill. By combining these three different learning situations effectively, both professional and interpersonal knowledge can be learned effectively.

Another issue concerning the development of coaching skills could be deliberate reflection. This has been well documented in various literatures (Trudel et al., 2016) since Schön (1984) published his classic book called *The Reflective Practitioner: How Professionals Think in Action*. Practitioners like S&C coaches have been reported to develop their skills by reflecting on their practice. This is one part of intrapersonal knowledge proposed by Côté and Gilbert (2009). Developing professional and interpersonal knowledge are thought to be underpinned by intrapersonal knowledge, because without the motivation to improve one's own coaching skills and knowledge of how to improve those skills, coaches' learning could not be accelerated.

The beginner coaches in the present study could be recommended to develop their intrapersonal knowledge before or at least in parallel with getting professional and interpersonal knowledge. Trudel and his colleagues (Trudel & Gilbert, 2013; Trudel et al., 2016) showed coach identity evolution from Newcomer, through Competent and Super Competent, to Innovator. They argue that the main factor influencing the progression of coaches on the continuum from Newcomer to Innovator is the ability to use "deliberate reflection," no matter what coaching contexts he/she is in. The beginner coaches can situate themselves in mediated learning environments where learning context is controlled by other people. At the same time, they need to access unmediated learning situations where they can decide by themselves what information they need and the different sources to be consulted. During the Newcomer stage, coaches are recommended to engage in mediated learning because they may not know what they should know. In these cases, coaches can benefit greatly from being taught by other experts. The beginner coaches, however, should try to engage in internal learning in order to proceed to the upper stages of the continuum, i.e., towards Innovator. In internal learning situations, there is no new material of learning coming from either a mediated or unmediated learning situation. Instead the individual reorganizes what he/she already knows, sometimes referred to as "cognitive housekeeping" (Trudel & Gilbert, 2013). Since the skills the beginner coaches in the present study needed to develop were active engagement and interactions with their athletes, they should train themselves in actual sessions by using deliberate reflection. As many literatures (e.g., Cushion, 2007; LeUnes, 2007) stated, coaching is muddy. Coaching is complex and dynamic in nature so that coaches need to play improvisations every time they are on duty. Coaches need to have the ability to apply what they learnt in mediated and unmediated learning situations into their actual coaching. Moreover, in this study, the expert coaches spent more time on verbal instructions but it does not mean every beginner coaches should spend as much time as experts. Because coaching is complex and dynamic and what is effective depends on a context, beginner coaches are encouraged to learn what and how the current expert coaches are coaching and keep seeking for a better coaching everyday with innovative mind.

From the coach education point of view, program providers should be aware of how coaches learn best. The programs should be able to provide sound professional knowledge. There are currently many opportunities to learn professional knowledge in Japan. Organizations such as NSCA Japan, JATI or even small private businesses provide many formal and non-formal learning opportunities. On the other hand, it is doubtful if S&C coaches engage in effective informal learning or internal learning, and if existing coach education programs are successful to develop S&C coaches' intrapersonal knowledge, which underpins acquisition of other two knowledge. Effective self-awareness and reflection skills should be included in formal and non-formal educations.

Limitation and Scope of the Present Study

Considering effective coaching is context-dependent, cultural considerations should be taken into account when comparing the data obtained in this study and those of the previous literatures. Nisbett (2004) described the differences in the thoughts between Westerners and East Asians. In this study, Hustle recorded by both the expert and the beginner coaches were less than 1%, while that of US S&C coaches was 11.12% (Massey et al., 2002). This difference could be due to the cultural differences. According to Benedict (2006), Japanese have shame-driven way of thinking which means that Japanese tend to avoid doing something embarrassing. In this study, none of the expert and the beginner coaches knew the athletes before. This might have made the coaches subconsciously think that it was embarrassing to hustle and avoid those behaviors. Cultural diversity could bring complexity into the understanding of how effective coaching look like in a certain country or region. Cultural diversity in coaching could be an interesting area of further research.

The controlled coaching environment could be another issue to be mentioned. The authors provided the same athletes and the gym to all the coaches so that they could coach the same athletes in the same environment as much as possible for the sake of controlling variables. As the data collection was conducted over 18 weeks with the same athletes, their training effects might affect the results of this study albeit this effect on coaching behavior could be small. Furthermore, this given coaching context would have made the coaches modify their typical coaching behavior. This could be always a dilemma for researchers in coaching since if researchers extract an issue from an actual coaching context which is dynamic and complex in nature, that issue may lose its liveness and be misunderstood. The above mentioned cultural consideration could be applied especially in this case. Japanese may have some reserve in dealing with somebody who is not within one's family or close associates until one gets to know them better (Yamakuse, 2016, p. 67). However, as long as taking some degrees of cultural considerations into account, the results of this study could give us great insights about development of coaching skills for Japanese S&C coaches.

Conclusion

The purpose of this study was to examine the differences in behavior of expert coach and beginner coach in Japanese S&C coaches. As a result of analyzing the behavioral characteristics of each coach using the systematic observation method, (1) the expert coaches spend a lot of time on interacting with athletes than the

beginner coaches, (2) the beginner coaches spent a lot of time on monitoring athletes and other activities not related to training. In order for a beginner S&C coach to step up to expert, it will be required to acquire expert knowledge and interpersonal knowledge by effectively incorporating formal, non-formal, and informal learning.

References

Bartholomew, K. J., Ntoumanis, N., & Thøgersen-Ntoumani, C. (2009). A review of controlling motivational strategies from a self-determination theory perspective: Implications for sports coaches. *International Review of Sport and Exercise Psychology*, *2*, 215-233.

Benedict, R. (2006). The chrysanthemum and the sword: Patterns of Japanese culture. New York, NY: Mariner Books.

Claxton, D. B. (1988). A systematic observation of more and less successful high school tennis coaches. *Journal of Teaching in Physical Education*, *7*, 302-310.

Côté, J., Bruner, M., Erickson, K., Strachan, L., & Fraser-Thomas, J. (2010). Athlete development and coaching. In J. Lyle & C. Cushion (Eds.), *Sports coaching: Professionalisation and practice* (pp. 63-83). Edinburgh, Scotland: Churchill Livingstone.

Côté, J., & Gilbert, W. (2009). An integrative definition of coaching effectiveness and expertise. *International Journal of Sports Science and Coaching*, *4*, 307-323.

Cushion, C. (2007). Modelling the complexity of the coaching process. *International Journal of Sports Science & Coaching*, *2*, 427-433.

Cushion, C. J., Armour, K. M., & Jones, R. L. (2003). Coach education and continuing professional development: Experience and learning to coach. *Quest*, *55*, 215-230.

Cushion, C. J., & Jones, R. L. (2001). A systematic observation of professional top-level youth soccer coaches. *Journal of Sport Behavior*, *24*, 354-376.

Ekstrand, J., Lundqvist, D., Lagerbäck, L., Vouillamoz, M., Papadimitiou, N., & Karlsson, J. (2017). Is there a correlation between coaches' leadership styles and injuries in elite football teams? A study of 36 elite teams in 17 countries. *British Journal of Sports Medicine*. Advance online publication. doi:10.1136/bjsports-2017-098001

Erickson, K., Bruner, M. W., MacDonald, D. J., & Côté, J. (2008). Gaining insight into actual and preferred sources of coaching knowledge. *International Journal of Sports Science & Coaching*, *3*, 527-538.

International Council for Coaching Excellence, Association of Summer Olympic International Federations, & Leeds Beckett University. (2013). *International sport coaching framework version 1.2*. Champaign, IL: Human Kinetics.

Isabel, M., António, S., António, R., Felismina, P., & Michel, M. (2008). A systematic observation of youth amateur volleyball coaches behaviours. *International Journal of Applied Sports Sciences*, *20*(2), 37-58.

Lacy, A. C., & Darst, P. W. (1984). Evolution of a systematic observation system: The ASU coaching observation instrument. *Journal of Teaching in Physical Education*, *3*(3), 59-66.

Lacy, A. C., & Darst, P. D. (1989). The Arizona state university observation instrument

(ASUOI). In P. W. Darst, B. Zakrajseck, & V. H. Mancini (Eds.), *Analyzing physical education and sport instruction* (pp. 369-378). Champaign, IL: Human Kinetics.

Lacy, A. C., & Martin D. L. (1994). Analysis of starter/nonstarter motor-skill engagement and coaching behaviors in collegiate women's volleyball. *Journal of Teaching in Physical Education*, *13*, 95-107.

Lara-Barcial, S., & Mallett, C. (2016). The practices and developmental pathways of professional and Olympic serial winning coaches. *International Sport Coaching Journal*, *3*, 221-239.

LeUnes, A. (2007). Modelling the complexity of the coaching process: A commentary. *International Journal of Sports Science & Coaching*, *2*, 403-426.

Mallett, C. J., Rynne, S. B., & Dickens, S. (2013). Developing high performance coaching craft through work and study. In P. Potrac, W. Gilbert, & J. Denison (Eds.), *Routledge handbook of sports coaching* (pp. 463-475). London, UK: Routledge.

Massey, C. D., Maneval, M. W., Phillips, J., Vincent, J., White, G., & Zeller, B. (2002). An analysis of teaching and coaching behaviors of elite strength and conditioning coaches. *Journal of Strength and Conditioning Research*, *16*, 456-460.

Nisbett, R. (2004). The geography of thought: How Asians and Westerners think differently ... and why. New York, NY: Free Press.

Occhino, J., Mallett, C., & Rynne, S. (2013). Dynamic social networks in high performance football coaching. *Physical Education and Sport Pedagogy*, *18*, 90-102.

Potrac, P., Jones, R., & Cushion, C. (2007). Understanding power and the coach's role in professional English soccer: A preliminary investigation of coach behaviour. *Soccer & Society*, *8*, 33-49.

Schempp, P. G. (2012). The journey toward becoming expert. In P. G. Schempp (Ed.), *5 steps to expert* (pp. 1-10). Athens, GA: Performance Matters.

Schön, D. (1984). *The reflective practitioner: How professionals think in action*. New York, NY: Basic Books.

Siedentop, D. (1983). Instruments for measuring teaching and its outcomes. In D. Siedentop (Ed.), *Developing teaching skills in physical education* (2nd ed., pp. 247-279). Palo Alto, CA: Mayfield Publishing.

Smith, R. E., Smoll, F. L., & Hunt, E. (1977). A system for the behavioral assessment of athletic coaches. *Res Q*, *48*, 401-407.

Tinning, R. I. (1982). Teacher reaction to the trial materials: A Victorian case study. *Australian Journal for Health: Physical Education and Recreation*, *95*, 11-14.

Trudel, P., & Gilbert, W. (2013). The role of deliberate practice in becoming an expert coach: Part 3—Creating optimal settings. *Olympic Coach Magazine*, *24*(2), 15-28.

Trudel, P., Rodrigue, F., & Gilbert, W. (2016). The journey from competent to innovator: Using appreciative inquiry to enhance high performance coaching. *AI Practitioner*, *18*(2), 40-46.

Werthner, P., & Trudel, P. (2009). Investigating the idiosyncratic learning paths of elite Canadian coaches. *International Journal of Sports Science & Coaching*, *4*, 433-449.

Yamakuse, Y. (2016). *Japaneseness: A guide to values and virtues*. Berkeley, CA: Stone Bridge Press.