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## ORIGINAL ARTICLE

# Student-coaches perceptions about their learning activities in the university context



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### PALAVRAS-CHAVE

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**Abstract** The aim of this study was to analyze the student-coaches' perceptions of their learning activities experienced during their formation on the bachelor program of Physical Education. Eight students with intentions to become sports coaches participated. Data were collected through semi-structured interviews. For analyzing data, we followed the six steps of inductive thematic analysis. The variety of perceptions about the different activities experienced emphasizes learning as an individual process based on prior knowledge and experience. Although student-coaches appreciated the theoretical-practical courses, experiential learning situations seem to be more significant because they have the chance to face real-world experiences, problems, and dilemmas.

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### Percepções de estudantes-treinadores acerca das atividades de aprendizagem no contexto universitário

**Resumo** O objetivo do presente estudo foi analisar a percepção de estudantes-treinadores a respeito da contribuição das atividades de aprendizagem durante sua formação em um curso de bacharelado em educação física. Participaram do estudo oito estudantes. A coleta de dados ocorreu por meio de entrevistas semiestruturadas e, na análise dos dados, seguiram-se as seis etapas da análise temática indutiva. A variedade de percepções sobre as atividades

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experienciadas enfatiza a aprendizagem como um processo individual baseado no conhecimento e na experiência prévia. Apesar de os estudantes apreciarem as situações de aprendizagem proporcionadas pelas disciplinas teórico-práticas, situações de aprendizagem experiencial parecem ser mais significativas devido à possibilidade de enfrentar problemas reais.

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## PALABRAS CLAVE

Entrenador deportivo;  
Formación de  
entrenadores;  
Currículo;  
Educación física

## Percepciones de los estudiantes para ser entrenadores sobre las actividades de aprendizaje en el contexto universitario

**Resumen** El objetivo de este estudio fue analizar las percepciones de estudiantes-entrenadores sobre la contribución de las actividades de aprendizaje durante la carrera de educación física. Ocho estudiantes que se formaban para ser entrenadores participaron en el estudio. Se recopilaron datos en entrevistas semiestructuradas y el análisis de los datos siguió las seis etapas del análisis temático inductivo. La variedad de percepciones sobre las actividades experimentadas hace hincapié en el aprendizaje como un proceso individual basado en el conocimiento y la experiencia previos. Aunque los estudiantes apreciaron las clases teórico-práticas, al parecer las situaciones de aprendizaje basadas en la experiencia son más relevantes debido a la posibilidad de enfrentarse a problemas reales.

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## Introduction

Research in sports coaching has shown coach learning as an idiosyncratic process that occurs in a variety of contexts and it is developed along the coaches' career (Stodter and Cushion, 2017). If on the one hand, learning in informal contexts (e.g. coaching experiences, observation, and interaction with other coaches) has been perceived as the main source of coaches' knowledge (Mallett et al., 2016; Rynne and Mallett, 2014), on the other hand, experiences in formal contexts (e.g. certification courses offered by an institution) seem not to reach the same impact on their development (Cushion and Nelson, 2013; Trudel et al., 2010).

Although coach education programs play a critical role in developing and certifying coaches to work legally, the negative perceptions often addressed are normally based on the following aspects: (a) The format of the programs provide a standardized curriculum based on a technocratic rationality, limiting the development of coaching competences, such as decision making, communication, and leadership (Nash and Sproule, 2012); (b) the teaching strategies used during the program are highly prescriptive, trying to cover too much information in a short period of time (Mesquita et al., 2014); (c) the programs do not adopt effective strategies to help coaches to develop learning skills, which would promote their ongoing learning (Trudel et al., 2013).

Traditionally, National Government Bodies (NGBs) and sports federations are responsible for offering coach education programs in different countries (Trudel et al., 2010). Recently, these programs have been also offered in the university context (Araya et al., 2015; Cronin and Lowes, 2016; Reddan et al., 2016) in an attempt to promote coaching as

a profession recognized worldwide. In fact, the results of studies investigating university-based coach education programs demonstrate coaches' positive perceptions, mainly due to the teaching strategies involving group discussions and reflections (Araya et al., 2015; Cronin and Lowes, 2016; Jones et al., 2012) on situations covering real-world coaching and situated problems (Reddan et al., 2016; Morgan et al., 2013).

In Brazil, initial training in Physical Education is recognized as the main route to prepare coaches. However, the specialized body of knowledge in this area does not seem to guarantee a desired preparation for sports coaches (Milistetd et al., 2014). Recent studies have shown that coaches perceived the initial training in Physical Education as important moment to acquiring general knowledge related to human movement (Rodrigues et al., 2017) or didactical and methodological approaches to teach sports (Rodrigues et al., 2016). Conversely, the programs do not focus in specific coaching competencies (Nunomura et al., 2012).

Nevertheless, understanding coach learning in formal contexts is a complex process. Even though coaches are exposed to the same learning opportunities, these experiences are interpreted uniquely by each of them according to ones' cognitive structure and learning orientations (Paquette et al., 2014; Winchester et al., 2013). According to Cushion and Nelson (2013), to understand the process in which coaches learn, the complexities, intricacies, and nuances that are inherent part of the learning process should be considered. Likewise, Trudel et al. (2013) argue that in order to understand coaches' learning, the motivations, context, and the situation must be understood previously. Therefore, although a group of learners may be exposed

to the same learning context and material, the information will be internalized individually to each one of them (Moon, 2004).

Based in the complexity to understand learning in formal context and the recent growth of evidence about the improvement of coaches' preparation in university-based programs, the purpose of this study is to analyze the perception of student-coaches enrolled in a 4-year undergraduate program in Physical Education with regards to the contribution of the learning activities experienced in this environment to become a coach.

## Methods

Considering the objective presented, this study contemplates the criteria for an exploratory research (Gil, 2008). With regards to the methods of collecting and analyzing data, we adopted qualitative procedures for better interpreting the phenomenon in case (Yin, 2011).

Respecting the national guidelines (Brazil, 2004; Brazil, 2009), participants were enrolled in a bachelor degree designed in 3200 h from a public university located in the southern of Brazil. The regular curriculum concerning to coaches' preparation are developed in 12 specific sport courses (e.g. swimming; soccer; etc.); 4 coaching courses (sports training methodology; sports pedagogy; etc.) and 1 internship (sports training). The experimental learning is ensured on Curricular Pedagogical Practices – CPP (opportunities to develop professional competencies in different learning activities), Internship (possibilities to consolidate professional competencies on field under supervision), and Scientific-Cultural-Academic Activities – SCAA (opportunities selected by the students to extend their knowledge in tutoring, voluntary internships, research laboratory experiences).

## Participants

Participants were undergraduate Physical Education students who had deliberate intention to become coaches. In order to explore their perceptions on different learning experiences, students enrolled in the final year of the program were personally invited or contacted by email by the main researcher. From a total of 45 students invited to participate, 8 of them accepted to participate voluntarily in this study (Table 1).

## Data collection

The research project was approved by The National Committee for Ethics in Human Research (n. 169.330/2012) and all participants freely offered their informed consent. Data were collected in the second semester of 2013 through individual semi-structured interviews with open-ended questions. The interviews lasted between 55 and 70 min and was recorded through a digital recorder. Afterwards, the interviews were transcribed verbatim (141 single-spaced pages of transcripts). To ensure validity of the information collected, transcripts were forwarded via email to the participants in order to confirm its content. The transcription process respected the oral speech and grammaticality to ensure the preservation of the semantic content of responses.

## Data analysis

The transcript interviews were organized and analyzed through a qualitative analysis software (QSR NVivo 9). In order to identify the emerging content from the student-coaches' experiences on their learning activities during the program, an inductive thematic data analysis was performed based on the 4 main themes: (a) Theoretical-Practical Classes; (b) CPP; (c) Internship; (d) SCAA. Thus, we adopted the 6 consecutive steps suggested by Braun and Clarke (2006), namely: familiarization with data; initial coding; search for themes; review of themes; definition and appointment of themes; production of reports. Thereafter, data were organized into categories (sub-themes) according to the order of themes that generated from the interviews. The confirmation of the representativeness of themes and categories that emerged in the study were established by the confrontation and discussion of two qualitative research and professional training experts (Patton, 1990). To ensure the privacy of participants, pseudonyms were created to represent the respondents.

## Results

### Theoretical-practical classes

The undergraduate program analyzed offers 12 compulsory sport-specific courses and other 4 compulsory courses related to the coaching activity. The student-coaches

**Table 1** Characteristics of participants.

Participants	Age	Sex	Athletic experience (sport)	Coaching expectation (sport)
Peter	29	Male	Soccer	Soccer
Anna	26	Female	Martial Arts	Martial Arts
John	24	Male	Volleyball	Volleyball
Roger	22	Male	Volleyball	Volleyball
Chris	23	Male	Basketball	Basketball
Sophie	22	Female	Handball	Handball
Michael	22	Male	Soccer	Many Sports
Diane	21	Female	Basketball	Basketball

perceived positively the technical and tactical content given in the classes:

*"...While I was an athlete, I never worried about understanding, for example, which tactical system we used [...] I just knew that I had to be in that position in the rotation, and play. Here I got the knowledge of why to do it..." (Roger).*

The 'methods of coaching' lectures were also highlighted by most of the students:

*"The [course name] helped me a lot, especially in methodological approaches; I had no idea about that, you know? Then, the professor taught me that we could structure training in different ways..." (Diane).*

### Relation between theory and practice

Students pointed out some issues in the development of theoretical and practical classes. In the coaching-related courses, the lack of theoretical and practical relationship was identified as a barrier to understand the information given:

*"We even had Sport Pedagogy, Sport Psychology, and Sports Training courses, but as I think, there are too much content mostly seen in theory, and as it was not experienced in practice, it makes no link to practice and it is easily forgotten..." (Peter).*

In addition, Michael criticized the excess of the practical sessions playing the athlete role:

*"Many times the instructor was teaching us technical and tactical situations. Most of the time I felt more as a player rather than a coach..." (Michael).*

Although participants highlighted the importance of the content given in theoretical-practical classes, the few moments they were able to relate the content with the coach's practice and the superficiality in the way the themes were addressed in seemed to determine reduced meanings to students in their development as sports coaches.

### Curricular pedagogical practices

#### Observation of contexts

Students recognized that CPP were opportunities to play the role of coaches during sports-specific and coaching courses. However, most of the students indicated some disappointments for not intervening as coaches and just observing on the majority of time:

*"In most of the sport-specific courses, CPP were restricted to observe out of college what was a basketball or soccer training session, to see what they were doing, and write a report about it, so it had little impact on me" (Roger).*

However, for students with lower levels of athletic experience, the observation strategy was valuable. For them, this activity was an opportunity to make links between theoretical concepts and concrete practical problems, and also to understand different coaching contexts.

*"When I went to watch an adult soccer practice, I could understand what our instructor meant when he was talking about integrative training methods..." (Diane).*

#### Coaching colleagues

Regarding to the coaching sessions given to their colleagues, all participants reported applying theoretical knowledge. However, for the majority of participants, this strategy is still far from practical reality, given that it does not offer real-life problems or difficulties while coaching, which could provide their improvement as coaches.

*"When we would coach them, they would not say nothing if it was wrong because people would be angry with each other" (John)*

However, CPP seem to be appreciated by the student-coaches when they had the opportunity to coach children and youth players in a real-world context. Anna reported the particular challenges posed by children, including the difficulty of concentration on the task:

*"We are used to coach adolescents and adults, and then we start coaching children. It is something totally new; we have to come up with a whole teaching and learning strategy, because to keep the child's attention is not an easy task" (Anna).*

Roger highlighted the role of working with different age groups as crucial:

*"Practice will lead us to calm down and learn to relate... today I know how to relate to people of all ages and for each one I will have to teach the same activity differently".*

### Internships

#### Experiencing real contexts

Participants reported they had the option to choose between sports coaching or sports management for their internship. All of interviewees that did the internship in sport coaching assigned relevant importance for the activities experienced. The students recognized internship as a key activity for their development, especially for experiencing situations as coaches in a real context. Among students' main perceptions, the experiences of working routines were very important to them:

*"It was very important to understand coaching day by day. To put into practice the planning, adjusting the activities, giving feedback to the athletes during the sessions..." (Diane).*

#### The complexity of coaching

The self-perception of knowing the team as a whole, and being the teams' 'head coach' for a moment was perceived as highly valuable for their development:

*"It was nice being there on the court giving practices... it was not the coach who was there and I was only helping them, I was giving the training, explaining the exercises to players, correcting them..." (Roger).*

The problems arising from other agents, such as parents, were highlighted as important to acquire relationship and problem solving skills:

*"I even went through some troubling situations [hearing athletes' parents] and I learned much to deal with them; then, it is very important for a coach to deal with people and learn to behave in front of them ..."* (Diane).

### Supervisor's support on learning

Facing the numerous experiences that the students found in the internship routine, they needed to reflect and make decisions in their activities. Consequently, the role of the more experienced coaches was recognized as fundamental in order to enhance the students' learning, to promote their reflective practice, and to increase their intervention capacity.

*"Since I was an athlete I always talked a lot to my coaches. Then, from their actions, I was always interested and questioned on why they had done this or that in order to seek knowledge ... and during my internship, this helped me to think about the activities I had planned, the goal I wanted to achieve..."* (John).

Peter and Michael reported not receiving adequate support from their supervisors to develop their activities. For them, that was a limiting factor to improve their knowledge:

*Well... I did not much in my internship... I was just taking the balls for the coach...* (Peter).

*The coach gave me the opportunity to coach his athletes sometimes, but you know, I wasn't confident to lead the activities because I'm still learning about that, I would like if the coach could help me...* (Michael).

### Cultural scientific academic activities

The CSAA represent the moment in which students can choose what they want to study and participate during the program. They indicated to participate in: intramural sports projects, undergraduate teaching assistant (UTA) experiences, research laboratories, and activities from sports federations.

### Motivation to learn

The perception of all students was positive about their experiences in CSAA. All of them reported being motivated to participate in activities they have chosen to and sought to deepen their knowledge in sports through these opportunities.

*"I've never been a high-performance athlete, so I knew I had to give my best at the university to gain knowledge ... For three semesters I was an UTA in the basketball course and I had a really great experience in teaching activities"* (Chris).

Sophie exemplifies the importance of the varsity team experiences as a learning route:

*"My learning was based on the relationship with players, and it was the first time I had this experience to*

*lead a team, to train a group, to face the problems, the difficulties..."*

### Learning by doing

The importance of developing specific coaching tasks and conducting activities were experiences highlighted by students who worked in varsity teams:

*"... I was responsible for doing specific work with athletes who were not in the game [...] But over time, I started being responsible for giving, for example, a training session, to control their physical evolution, apply tests; I did all of this and realized how important it was for me..."* (Peter).

### Discussion

When discussing on their experiences, participants attributed different meanings to the activities experienced during the program. The internship and the CSAA were the activities most valued by the students investigated. Although participants considered the contents given in sport-specific courses as the basis of their professional knowledge (Gilbert and Côté, 2013), they highlighted an excess of theoretical lectures, lack of relationship between theory and practice, and superficiality of contents addressed. Student-coaches' dissatisfaction due to excessive theoretical workload in the classes revealed similar results to studies that investigated the preparation of coaches in formal education programs in other countries (Nash and Sproule, 2012; Mesquita et al., 2014). Therefore, instead of aiming to cover a large amount of material during the course, instructors should use the content covered to develop a knowledge base and learning skills; that way, they would support student-coaches for an ongoing learning and development throughout their lives (Weimer, 2013).

Another factor that might have reduced student-coaches' learning perception on the Theoretical-Practical Classes is the requirement for all students to take at least 12 of specific sport courses. If on the one hand, this propose provides learning opportunities of technical and methodological content, as well as pedagogical principles for many sports; on the other hand, for those who have previous experience in the respective sports, these courses offer little new information to their training as future coaches. In addition, the large number of sports impairs maintaining a suitable level of interest for all subjects. Moon (2004) points out that if the information does not make sense to the students, their attention will be reduced and will only promote the assimilation process in their cognitive structure. In order to allow the interpretation of information to provide a better meaning (i.e. which would lead to the reorganization of the cognitive structure of coaches), Trudel et al. (2013) recommend the reorganization of the structure of coach education programs, in order to regroup participants with similar experiences, decrease the amount of contents, and use experienced instructors (facilitators).

In the analysis of the CPP, two main activity formats were evidenced during the program. Although the observation assignments are intended to be recognized as experiential practices, which aim to develop professional knowledge and skills (Mesquita, 2013), coaching colleagues'

experiences were the most valuable learning opportunities for the respondents. Indeed, the organization of contextualized pedagogical activities favors the development of professional skills, interpersonal skills, and also the reflective ability of future coaches (Jones et al., 2012). According to Moon (2004), experiential learning should not be seen just as a strategy for the implementation of a number of techniques, but as an activity of creation and recreation of personal and cultural meanings. In experiential learning, one is confronted with practical dilemmas and unexpected situations, which trigger the need to reflect before, during, and after the action itself, seeking solutions to problems (Schon, 1983). The accommodation process of information in the learner's cognitive structure occur in these moments, establishing links to their previous knowledge and actions, as well as balancing personal experiences and demands of the task (Moon, 2004).

In this context, Marcon (2013) proposes a reorganization of CPP in Brazilian Physical Education programs, in which students should develop coaching skills since entering in the undergraduate course. Thus, the practical experiences should gradually increase their complexity and should be organized for the students to master the fundamental knowledge that composes the basis of the coaching practice. Therefore, organized experiential practice should offer students the opportunity to reflect and to understand their contextual actions, which would lead them to achieve deeper levels of learning (Jones et al., 2012; Morgan et al., 2013; Paquette et al., 2014).

It was evident during the internship activities the students' responsibility to plan, conduct, and evaluate activities, as well as to share ideas with other coaches and to understand the needs of athletes. These experiences promote learning at deeper stages, which allows students to reorganize their knowledge and previous experiences regarding the new information received in their practical contexts (Schon, 1983). Thus, the interaction with athletes, athletes' parents, and other professionals showed student-coaches the need to improve communication skills, leadership, and reflection, which are characteristics of coaches (Gilbert and Côté, 2013).

The participants experienced throughout the internship their first experiences as a sports coach in a real-world context. Therefore, the internship supervisor is a fundamental piece in serving as a role-model and supporter for the learning of future coaches (Dieffenbach et al., 2011). However, due to the student coaches' negative perceptions on the supervisors' support during the training activities, we highlight that this is a weakness to overcome in the training of future coaches. The supervisor can support the development of the student-coach by providing new ways of interpreting problems, concepts, and discussions raised in the coaching field, as well as to make them reach a level of reflection that they would not reach by themselves (Barney and Anderson, 2014).

The CSAA were well reported by the participants. As the activities are selected by students, motivation and commitment to practice were highlighted, regardless of the chosen context; this confirms that the predisposition to activity (learning orientations) comprises a pivotal role to achieve meaningful learning (Moon, 2004). According to Moon (2004) meaningful activity is used to assign relevance

and significance of an activity to the learner. Thus, the choice of participants for certain sport activities where they once were athletes favors the development of deeper levels of learning, given that the experiences are confronted to their prior knowledge, as well as demonstrate a possible choice of a career path, meeting their expectations as future coaches. This option supports studies with experienced coaches, showing that the knowledge of coaches is supported by different learning situations throughout their careers and the experience as athletes is a major experience in their development as a sports coach (Mallett et al., 2016; Rodrigues et al., 2016; Nunomura et al., 2012).

In addition to the motivation of acting as coaches, experiential learning in contextualized environment was also highly valued by students participating in this study. Some of them appreciated the experiential learning opportunity due to feeling they became a part of the team. The feeling of belonging to a certain group of coaches and athletes favors the discussion, exchange of ideas, and the reevaluation of concepts and practices (Culver and Trudel, 2008). The results found, in general, corroborate most studies about the perception of coaches on their professional learning, which recognize experiential learning situations as the main routes in the construction of knowledge by these professionals (Rynne and Mallett, 2014; Nash and Sproule, 2012; Rodrigues et al., 2017; Winchester et al., 2013). In the perception of students, the reorganization of experiential strategies guided by greater interaction of future coaches in the sport environment would serve to catalyze their professional learning.

## Conclusion

The variety of perceptions about the value assigned to the different learning activities provided in the Physical Education bachelor program analyzed, emphasizes learning as an individual process based on prior knowledge and experience, which influence students' engagement and motivation for participating in learning activities in the formal preparation context. While this study was carried out in the university context, the students' perceptions corroborate the idea of coaches who work in other levels and sport contexts. In addition, despite theoretical practical classes were considered important by students, experiential learning situations seem to be more significant because they faced the real-world of coaching, problems, and dilemmas of practice.

Although there is a support from the field supervisor and from other coaches in experiential activities, reflective practice in training programs seemed to be little explored. In order to develop independent learners in the university-based context, constructivist approaches should be prioritized in coach education programs, which would support learners' autonomy and commitment to the activities offered. This suggestion would move the programs beyond the behavioral approaches often adopted, which are oriented to reproduction and dependence of the learner. Therefore, a curricular review of the coach education programs, especially in the university-based context, can be considered as the first step to restructure and improve coaches' preparation in Brazil.

Suggestions for practice:

- Theoretical-Practical Classes: consider students' cognitive structure; use active teaching strategies based on problem-solving activities; decrease the amount of content considering timeframe; facilitate students' involvement in the selection and development of contents; assign students more responsibility and autonomy in building knowledge.
- CPP: provide students the opportunity to get involved in group works in order to run training sessions to their colleagues; consider students' autonomy in a progressive level of demand; challenge students to run training sessions to children, youth, or other players in a real-world context.
- Internship: develop learning environments in sports clubs; considering coaches as potential supervisors and mentors; lead discussions with students about their experiences; provide support for experimentation and reflection on the professional intervention.
- CSAA: recognize CSAA as an environment for the development of additional skills of future coaches in order to provide them a holistic educational experience; involve students since their entering in the program to participate as assistant coaches and head coaches of intramural sports teams.

## Conflicts of interest

The authors declare no conflicts of interest.

## References

- Araya J, Bennie A, O'Connor D. Understanding performance coach development: perceptions about a postgraduate coach education program. *Int Sport Coach J* 2015;2:3–14.
- Barney S, Anderson M. Mindful supervision in sport and performance psychology: building the quality of the supervisorsupervisee relationship. In: Knowles Z, Gilbourne D, Cropley B, Dugdill L, editors. *Reflective practice in the sport and exercise sciences: contemporary issues*. Oxon: Routledge; 2014. p. 147–59.
- Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77–101.
- Brazil. Ministério da Educação. Resolution CNE/CES nº 7, April 5th 2004. Brazilian Federal Register, 2004.
- Brazil. Ministério da Educação. Resolution CNE/CES nº 4, April 6th 2009. Brazilian Federal Register, 2009.
- Cronin CJ, Lowes J. Embedding experiential learning in HE sport coaching courses: an action research study. *J Hosp Leisure Sport Tour Educ* 2016;18:1–8.
- Culver D, Trudel P. Clarifying the concept of communities of practice in sport. *Int J Sport Sci Coach* 2008;3:1–10.
- Cushion C, Nelson L. Coach education and learning. In: Potrac P, Gilbert W, Denison J, editors. *Routledge handbook of sports coaching*. New York: Routledge; 2013. p. 359–87.
- Dieffenbach KD, Murray M, Zakrajsek R. The coach education internship experience: an exploratory study. *Int J Coach Sci* 2011;5:3–25.
- Gil AC. *Métodos e técnicas de pesquisa social [Methods and techniques of social research]*. 6 ed São Paulo: Atlas; 2008.
- Gilbert W, Côté J. Defining coaching effectiveness: a focus on coaches' knowledge. In: Potrac P, Denison J, editors. *Routledge handbook of sports coaching*. London: Routledge; 2013. p. 147–59.
- Jones R, Morgan K, Harris K. Developing coaching pedagogy: seeking a better integration of theory and practice. *Sport Educ Soc* 2012;17:313–29.
- Mallett CJ, Rynne SB, Billett S. Valued learning experiences of early career and experienced high-performance coaches. *Phys Educ Sport Pedagog* 2016;21:89–104.
- Marcon D. *Conhecimento Pedagógico do Conteúdo: a integração dos conhecimentos do professor para viabilizar a aprendizagem dos alunos [Pedagogical content knowledge: integration of the professor's knowledge to enable students' learning]*. Caxias do Sul: EDUCS; 2013.
- Mesquita I. O papel das comunidades de prática na formação da identidade profissional do treinador de desporto. In: Nascimento JV, Ramos V, editors. *Jogos desportivos: Formação e investigação. Temas em Movimento*. Florianópolis: Editora Tribo da Ilha; 2013. p. 295–318.
- Mesquita I, Ribeiro J, Santos S, Mogan K. Coach learning and coach education: Portuguese expert coaches' perspective. *Sport Psychol* 2014;28:124–36.
- Milistedt M, Trudel P, Mesquita I, Nascimento JV. Coaching and coach education in Brazil. *Int Sport Coach J* 2014;1:165–72.
- Moon JA. *A handbook of reflective and experiential learning: theory and practice*. London: Routledge; 2004.
- Morgan K, Jones RL, Gilbourne D, Llewellyn D. Changing the face of coach education: using ethno-drama to depict lived realities. *Phys Educ Sport Pedagog* 2013;18:520–33.
- Nash C, Sproule J. Coaches perceptions of their coach education experiences. *Int J Sport Psychol* 2012;43:33.
- Nunomura M, Oliveira MS, Roble OJ, Carbinatto M. Ginástica artística competitiva e a filosofia dos técnicos [Competitive artistic gymnastics and coaches' philosophy]. *Motriz: Rev Educ Fís* 2012;18:678–89.
- Paquette KJ, Hussain A, Trudel P, Camiré M. A sport federation's attempt to restructure a coach education program using constructivist principles. *Int Sport Coach J* 2014;1:75–85.
- Patton MQ. *Qualitative evaluation and research methods*. 2nd ed. Beverly Hills: SAGE; 1990.
- Reddan G, McNally B, Chipperfield J. Flipping the classroom in an undergraduate sports coaching course. *Int J Sport Sci Coach* 2016;11:270–8.
- Rodrigues HA, Paes RR, Neto SS. A socialização profissional do treinador esportivo como um processo formativo de aquisição de saberes [Professional socialization of the sport coach as a formative process of knowledge acquiring]. *Movimento* 2016;22:509–21.
- Rodrigues HA, Costa GDCT, Junior ELS, Milistedt M. As fontes de conhecimento dos treinadores de jovens atletas de basquetebol [Sources of knowledge of youth basketball coaches]. *Motrivivência* 2017;29:100–18.
- Rynne SB, Mallett CJ. Coaches' learning and sustainability in high performance sport. *Reflect Pract* 2014;15:12–26.
- Schon D. *The reflective practitioner*. New York: Basic Books; 1983.
- Stodter A, Cushion CJ. What works in coach learning, how, and for whom? A grounded process of soccer coaches' professional learning. *Qual Res Spor Exerc Health* 2017;9:321–38.
- Trudel P, Gilbert W, Werthner P. Coach education effectiveness. In: Lyle J, Cushion CJ, editors. *Sports coaching: professionalisation and practice*. 1st ed. London: Elsevier; 2010. p. 135–52.
- Trudel P, Culver D, Werthner P. Looking at coach development from the coach-learner's perspective: considerations for coach development administrators. In: Potrac P, Gilbert W, Denison J, editors. *Routledge handbook of sports coaching*. London: Routledge; 2013. p. 375–87.
- Weimer M. *Learner-centered teaching: five key changes to practice*. 2nd ed. San Francisco, CA: Jossey-bass; 2013.
- Winchester G, Culver D, Camire M. Understanding how Ontario high school teacher-coaches learn to coach. *Phys Educ Spor Pedagogy* 2013;18:412–26.
- Yin RK. *Qualitative research from start to finish*. New York: The Guilford Press; 2011.