
TEACHING STRATEGIES ADOPTED IN COACH EDUCATION PROGRAMS: ANALYSIS OF PUBLICATIONS FROM 2009 TO 2015

ESTRATÉGIAS DE ENSINO ADOTADAS EM PROGRAMAS DE FORMAÇÃO DE TREINADORES: ANÁLISE DAS PUBLICAÇÕES ENTRE 2009 E 2015

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RESUMO

De modo a superar as limitações e percepções negativas atribuídas por treinadores esportivos aos programas de formação, estudos recentes têm contribuído com importantes direcionamentos para seu aprimoramento. Assim, por meio da análise de artigos científicos publicados entre 2009 e 2015, este estudo buscou identificar as estratégias de ensino adotadas em programas de formação de treinadores de pequena escala, larga escala e universitários. A busca automática por artigos foi realizada nas bases de dados PUBMED, SCOPUS, Web of Science, PsycNET e SPORTDiscus, e a busca manual realizou-se em dois periódicos não indexados. Na busca inicial foram encontrados 731 estudos e, por meio da aplicação dos critérios de exclusão estabelecidos, 16 foram selecionados. Os resultados indicam que a maior parte dos estudos concentra-se nos programas universitários. Com relação às estratégias de ensino utilizadas, percebeu-se, de maneira geral, a utilização de estratégias que priorizam o engajamento dos treinadores esportivos em atividades que envolvem discussões em grupo e a reflexão. Com base nos artigos analisados verificou-se que as estratégias de ensino adotadas nos programas de formação de treinadores apontam pela tendência da adoção de abordagens centradas no aprendiz (treinadores), indo ao encontro das orientações internacionais para o aperfeiçoamento e a efetividade destas iniciativas.

Palavras-chave: Coaching esportivo. Educação. Desenvolvimento profissional. Ensino.

ABSTRACT

In order to overcome the limitations and negative perceptions often addressed to coach education programs, the sports coaching literature has offered important contributions for its improvement. Thus, through analyzing scientific articles published between 2009 and 2015, this study aimed to identify the teaching strategies adopted in small-scale, large-scale, and university-based programs. An automatic search for articles was conducted in the following databases: PUBMED, SCOPUS, Web of Science, PsycNET, and SPORTDiscus. Manual search was conducted in two non-indexed peer-reviewed journals. Afterwards, 731 articles were found and 16 were selected by applying the established criteria. The results indicated that most of the studies selected took place in a university-based context. In relation to the teaching strategies adopted, we verified a common intent to engage coaches in group discussions and reflection activities. Based on the articles analyzed, we suggest that the teaching strategies adopted in coach education programs indicate a trend towards learner-centered approaches (coach-centered), meeting the international guidelines for the improvement and effectiveness of these endeavors.

Keywords: Sports coaching. Education. Professional development. Teaching.

Introduction

With the constant expansion of sport in the 21st century, the need for a high quality orientation for sports practice has increased the importance of the sports coach. In this sense, coach education programs (CEPs) have helped supported the development and certification of sports coaches, and the search for improvements in these endeavors has been prevalent in the scientific literature consulted^{1,2}.

CEPs offered worldwide have been classified into three categories: small-scale, large-scale, and university-based³. Small-scale programs are defined as an education endeavor that takes place in localized interventions, with focus on specific topics and groups⁴. CEPs identified as large-scale are usually characterized by being developed by a National Government Body (NGB) and offering different levels of certification with pre-established contents for each level⁵. University-based programs differ from the aforementioned in that

they are offered at an undergraduate or postgraduate level, as well as being linked to a broader educational system. In addition, these programs normally last longer and focus primarily on developing general content and skills for the coaching practice^{3,6}.

Considering the increased interest on the development of CEPs, Trudel et al.³ carried out the first literature review on scientific publications regarding this topic. In reviewing the research published between 1998 and 2007, Trudel et al.³ selected and analyzed 14 studies, which were classified into small-scale, large-scale, and university-based programs. Although most studies took place in large-scale programs, the findings highlighted the scarcity of studies about the long-term effectiveness of CEPs, as well as the important role of sports organizations in promoting activities for coaches through non-formal and informal learning situations³. Afterwards, other literature reviews were conducted in CEPs regarding: the kind of materials published in this topic⁷; its effectiveness in developing coaches' interpersonal knowledge⁸; and a system for classifying these endeavors⁹.

Even though research studies have tried to create a broader understanding of CEPs and to provide support for its improvement, sports coaches still perceive their informal learning experiences (i.e. outside the educational context) with more meaning in their development¹⁰. The preferred learning situations normally mentioned are: interaction with peers^{10,11}, observing other coaches¹², and "on the job" experiences^{11,13}. Instead of adapting these situations to CEPs, the highly prescriptive teaching strategies often adopted have led coaches to a passive role in the learning process; therefore, only making them responsible for memorizing the content selected and delivered by the instructor^{14,15}.

In an effort to overcome the limitations aforementioned, studies have indicated the importance of moving beyond an instructor-centered environment and adopting more coach centeredness approaches^{2,15}. Considering the complexity of sports coaching¹⁶ and the evolution of access to information on the XXI century, competencies as decision making, creativity, and innovation have been claimed to be developed on CEPs². For example, in Europe, the European Network of Sport Science, Education & Employment¹⁷ published a document in 2007 reviewing the qualification principles for the whole continent, which led to changes on the design and epistemological principles of CEPs in countries as UK¹⁸ and Portugal¹⁹. Likewise in North America, the National Coaching Certification Program (NCCP) of Canada was a large-scale CEP pioneer in reorganizing their curriculum from a content to a competency-based approach in 2005¹. However, it is still unknown which teaching strategies have been used in such programs whether in small-scale, large-scale or university-based contexts. Therefore, considering the new trends for CEPs around the world in the last years, and in order to contribute to the previous reviews of Trudel et al.³, Rynne et al.⁷, Langan et al.⁸, and Lefebvre et al.⁹, this study reviewed the research published between 2009 and 2015 in order to identify the teaching strategies adopted in small-scale, large-scale, and university-based CEPs.

Methods

Although this study only followed some of the procedures indicated by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines²⁰, from a methodological perspective we conducted it with further rigor and transparency throughout the identification and selection of articles process when compared to regular research reviews. Thus, the search for articles took place in July 2016, in which three phases took place: Phase I: Defining the search strategies; Phase II: Screening articles; Phase III: Data extraction and analysis.

Phase I: Defining the search strategies

The automatic search for articles was performed using the following databases: PUBMED, SCOPUS, Web of Science, PyscNET, and SPORTDiscus. The searching equations used were: Coach Education AND Certification, Coach Education AND Program, Coach Education AND Formal Training, Coach Education AND Curriculum, Coach Education AND Learning, Coach Development AND Certification, Coach Development AND Program, Coach Development AND Formal Training, Coach Development AND Curriculum, and Coach Development AND Learning.

The manual search in peer-reviewed journals not indexed in databases included those whose scope is the publication of original articles on CEPs. Based on this criterion, two journals were selected to be screened: International Sports Coaching Journal and Sports Coaching Review. We highlight that for both automatic and manual search we only considered original articles published from 2009 to 2015 in the English language in peer-reviewed journals. In this phase, 731 studies were found.

Phase II: Screening articles

After removing duplicates, the 391 studies left were screened through a two-step process. Firstly, two researchers individually examined the studies by reading the titles and abstracts based on the following exclusion criteria: (1) Theoretical essay/Position paper; (2) Article out of the research topic; (3) Books, book chapters, conference abstracts or other types of studies that are not an original article. When the researchers indicated discordance regarding the articles' selection, a third researcher was asked to contribute to the final decision. Through applying the exclusion criteria, 318 studies were excluded and 73 were selected for the next step.

In the second step, the following exclusion criteria were adopted for the studies selected for full-text screening: (1) Article out of the research topic; (2) Article focusing on the coaches' perception and not the intervention performed; (3) Article with teaching strategies developed with no link to a CEP. Thus, 57 studies were excluded and 16 were selected to take part in this research. The flowchart in Figure 1 represents the process of selecting studies.

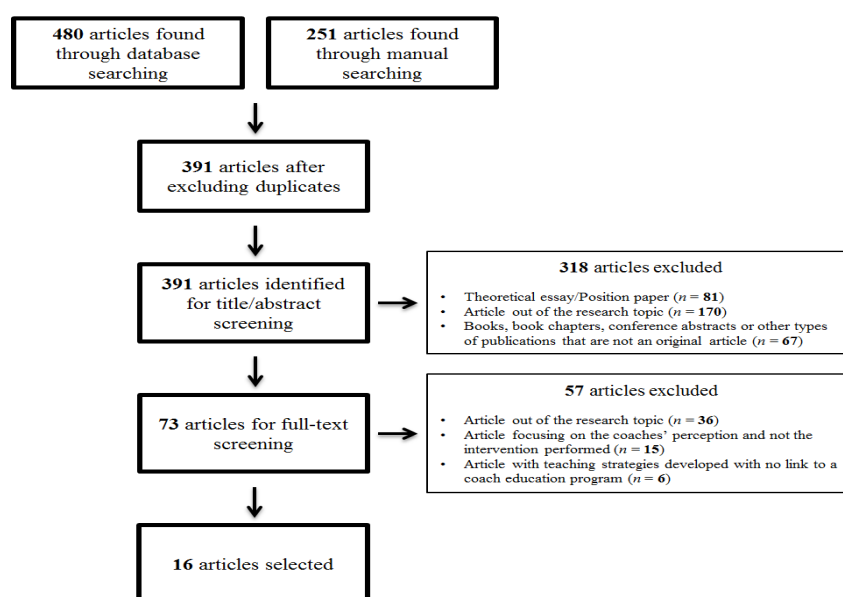


Figure 1. Flowchart of the selection process to the present review

Source: The authors

Phase III: Data extraction and analysis

In this phase, two researchers separately identified and extracted the following information in the articles selected: (I) context of the CEP investigated in the study (small-scale, large-scale, or university-based); (II) teaching strategies adopted during the programs; (III) procedures for implementing the teaching strategies; (IV) data collection methods; (V) general findings of the study, either through the perceptions of the coaches, researchers, or coach developers involved.

Specifically for pointing out the teaching strategies adopted in each program, we highlight that besides identifying them throughout the studies, we also interpreted them according to the activities used by the coach developers. The information gathered by the two researchers was cross-checked afterwards and a third researcher assisted in the process of checking the data. The organization of the selected articles in the databases was performed through Endnote (version 6.0), while the systematization of the information obtained from the articles was done through a Microsoft Office Excel spreadsheet (Version 2010).

Results and Discussion

Primary findings

Through reviewing the sports coaching literature published between 2009 and 2015, this study aimed to identify the teaching strategies adopted in small-scale, large-scale, and university-based CEPs, as well as the main findings obtained. After organizing the studies selected into the context they were performed, four were classified as small-scale²¹⁻²⁴, another four were classified as large-scale^{5,25-27}, and eight were classified as university-based²⁸⁻³⁵. Contrary to the study of Trudel et al.³ and Rynne et al.⁷, the large inclusion of CEPs in the university context suggests a pursuit of developing coaches through a broader educational system, which is already consolidated and recognized as a method of formal training for other traditional professions³⁶. This may be an indication of a professionalization process for the sports coaching, in which the university can be one of the means to contribute to this recognition.

Although Trudel et al.³ claimed for CEPs to be suitable to a voluntary aspect of the coaching activity, it seems that the current research has pointed to another direction. Therefore, instead of finding an expansion of the small-scale programs, which would be more convenient for voluntary coaches, we suggest that this search for professional recognition of coaches has led to new perspectives in the design of certification programs. As an example, we point out the use of complex theories throughout the programs^{28,29,33,35}, a longer time in the educational process^{22,26,31,32} and the importance of internal learning situations, present in the three contexts investigated^{5,23,29}. However, we also mention that only searching for articles on peer-reviewed journals might have limited our access to other types of published materials, which could have added some valuable information, especially regarding to small-scale CEPs.

In relation to the teaching strategies adopted in the studies selected for this review, we verified a common intention to engage coaches in reflection activities through small group discussions^{22-24,29,33,35}, large group discussions^{22,24,25,27,28,33}, online reflective journals^{27,31,32}, and problem-based learning^{28,29,33}. In sum, regardless of the context, it seems that the teaching strategies implemented are mainly grounded either in a social or an individual nature, which means that coaches have been exposed to opportunities of interaction with others and reflection. Therefore, it appears that coaches' preferred learning situations aforementioned¹⁰⁻¹³, have been adapted and included in CEPs as teaching strategies. In addition, coaches have become the protagonist of their learning, assuming an active role in the education process. These aspects suggest a shift of tendency, from directives (where the instructor is the center of

the process), to learner-centered approaches; as suggested previously by other research in the sports coaching field^{2,14,15,37}.

For presenting the results obtained from phase III of the studies' selection, we adopted the same criteria used by Trudel et al.³; therefore, the studies were grouped according to the context where the study took place, namely small-scale, large-scale, and university-based CEPs.

Small-Scale CEPs

The organization of the information found on the four studies classified in this context is detailed in Table 1.

Table 1. Small-scale CEPs studies published from 2009 to 2015

Small-scale coach education				
Citation	Teaching Strategy	Implementation Procedures	Data Collection Method	General Findings
<i>Diment</i> ²²	Large Group Discussion	Three phases over 18 months. 1 st : Introductory meeting to develop an individualized program specific to each of the nine clubs.	<i>Not clear</i>	- Coaches' and clubs' willingness to learn were significant factors in the success of the program. - Delivering the course at the clubs' regular training facilities helped coaches to see it as important.
	Group Presentation	2 nd : Three four-hour workshops with each club for developing soccer training sessions. - Open discussion about how to design a training session that could be used to train psychological skills.		
	Small Group-Work	- Coaches worked together in pairs and presented the drill to the big group. - The group discussed the drills considering their previous experience with similar training sessions, possible challenges in implementing the training, as well as expected responses from the players.		
	Micro-Coaching	3 rd : Apply the soccer training sessions developed before and discuss about possible changes.		
<i>Hughes et al.</i> ²³	Reflective Cards	Coaches used the r-cards over a six-week period. - Introductory day to enhance participants' understanding of the reflective process. - After three weeks, participants formed a small reflective focus group to discuss their engagement and experience of the process to date.	Audio Recording	- Participants were able to reflect on the successful aspects of their practice, ensuring a more appreciative aspect during, immediately after, and in the following days of the event. - Two coaches highlighted that the r-learning record sheets questioned their practice, which otherwise may have gone unnoticed;
	Small Group Discussion	- A reflective learning record sheet (reflection-on-action) was completed for every r-card (reflection-in-action) filled prior to the meeting. The questions encouraged the discussion on the utility of the r-cards and highlighted any difficulties that may have arisen. - After six weeks, the same focus group procedure was repeated to gauge any changes in participant's views as they developed familiarity and experience of using the r-cards as a reflective tool.	Interview	

continuing Table 1...

<i>Jacobs et al.</i> ²⁴	Large Group Discussion	1 st : Roundtable discussions to gain insight into the difficulties coaches encountered in their relationship and interactions with athletes and parents. 2 nd : Development of a course situated in theory and practice, based on the desired emphasis on dealing with problematic behavior and conflicts, and on the preferences and needs of coaches.	Audio Recording	- Coaches were involved in the process of course development in order to “own” the course content more easily. - Coaches feel more motivated to engage in the activities considering the significant relation to their needs and daily experiences.
	Small Group Discussion	3 rd : Course consisted of five three-hour sessions.		
	Video-Based Discussion	- Didactical methods included: instruction (presentations), conversations with peers, discussions based on video examples of football practices, role-playing, assignments, and practice exercises.		
	Role-Play			
<i>McMahon</i> ²¹	Athletes' Narratives	1 st : Three swimmers' narratives were created and presented to coaches picturing three distinct key themes: (1) swimmers' experiences of coaching practices related to performance; (2) bodily perfection; and (3) discipline. 2 nd : Coaches were asked about their perceptions and feelings regarding the narratives. 3 rd : After six months, coaches were interviewed again to check if the narratives had a sustained impact on their pedagogy.	Interview	- The tool was effective in providing coaches with space to cast a “beam of consciousness” over their own practice. - As a consequence, self-reflection was initiated, in conjunction with increased empathy, and a more holistic and athlete-centered approach to coaching.

Source: The authors

The articles classified in this context seemed to reveal a trend in designing programs to meet the specific needs of clubs or sports organizations, as well as offering it to a small and specific group of coaches²¹⁻²⁴. In terms of the teaching strategies adopted in these programs, small or large group discussions²²⁻²⁴ were the activities most identified in the studies, followed by the reflection opportunities offered through reflective cards²³ and from athletes' narratives²¹.

In general, the studies on small-scale CEPs displayed positive results in the implementation of these strategies, expressed in the coaches' interest in continuing to work with the content covered in the course²², by questioning their own coaching practice^{21,23}, and the reported motivation to discuss and learn about topics that are related to the common issues often experienced by coaches²⁴. However, considering the attention claimed by Trudel et al.³, the studies published from 2009 to 2015 have not yet shown empirical evidence to support the impact of small-scale CEPs on the coaching practice. Therefore, it is necessary to carry out studies investigating coaches before and after participating in those courses in order to identify a behavioral change to their daily routine after an intervention period.

Large-Scale CEPs

See in Table 2 the information regarding the four studies identified in the large-scale context.

Table 2. Large-scale CEPs studies published from 2009 to 2015

Large-scale coach education				
Authors / Year	Teaching Strategy	Implementation Procedures	Data Collection	General Findings
<i>Montelpare et al.</i> ²⁵	Large Group Discussion Peer Interaction	- Eight-week course using a facilitated online approach. A web-based platform incorporated video, text, animation, and lesson plans. - Weekly posting of a web-based log by the facilitator, topic specific discussion boards, and coach assessment tools were also included to enhance the interactivity of the website. - After completing the online course, twenty-four coaches were invited to a regional workshop that included a locker-room debriefing session and discussion of the program, and an informal conversation for chatting with other coaches.	Survey	- Coaches found the discussion board useful, they enjoyed sharing information, and felt that the approach was more conducive to engagement and less intimidating than using a traditional classroom setting. - Limited access to high-speed internet may compromise this method.
<i>Paquette et al.</i> ⁵	Portfolio Submission Micro-coaching	1st: Coaches submitted a coaching portfolio containing some information and reflections about themselves. 2nd: Coaches completed an online self-evaluation and met with a member of the program's support staff to engage in a learning conversation for further reflections on their coaching strengths and learning needs. - Coaches' training sessions were observed and evaluated by two staffs, followed by a feedback conversation to promote reflection and improvement.	Interview	- The portfolio task provided coaches' an opportunity to reflect and to develop a greater understanding of their respective coaching beliefs and behaviors. - Having the portfolio information in the beginning helped the facilitators in providing adequate information to help coaches seek out relevant information for their ongoing learning. - Coaches viewed the learning conversation following the observation component as an opportunity to receive valuable formative feedback from the program's support staff regarding the content and delivery of their coaching practices.
<i>Partington et al.</i> ²⁶	Video Feedback Instructor-Guided Discussion	Season 1: - Coaches' practice sessions were filmed. - At the end of the season, individual interviews took place for the coaches to watch their coaching video. Afterwards, they were given the videos and the observational data to review in their own time. Season 2: - Sporadic discussions on their practice with a coach educator. Season 3: - Again, coaches' practice sessions were filmed and at the end of the season individual interviews took place for the coaches to watch their coaching video.	Systematic Observation Interview	- After observing their own behaviors on the videos, coaches indicated they wanted to change in some aspects and improve their coaching. Also, coaches moved beyond their reliance on self-perceptions and increased self-awareness by recognizing their actual coaching practice. - Coaches increased the time spent in questioning athletes, in silence and silence 'on-task'. - Other sources of learning were seen as meaningful by the coaches, such as: conversations to other coaches at the club, research evidence and experiences from formal coach education.

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<i>Vohle</i> ²⁷	Video Analysis	Participants and moderators used an online platform.	Questionnaire	- Nearly all items referring to learning effects and motivation were answered positively by participants and almost all of them were intensively involved in cognitive activity.
	Large Group Discussion	- Coaches could watch videos and write comments on the side of the video for the others to see it and discuss together.		
	Online Reflective Journal	- Coaches had to do online diaries in which every participant could post written contributions through an editor field.		
	Concept Mapping	- Participants had to do a text assignment with the concept mapping tool for submitting for evaluation.		
			Interview	- Although most of the participants spoke against the use of the online diaries as an educational tool, all of them showed interest in reading other coaches' writing reflections.

Source: The authors

The studies classified in the large-scale context seem to demonstrate a trend towards the use of technology resources in designing the courses^{5,25-27}. Included was an online platform that enabled communication between coach developers and coaches^{5,25,27}, the use of online reflective journaling²⁷, as well as video observation of the coaches in practice²⁶. Particularly in the study of Paquette et al.⁵, the technological resources were used as specific strategies during the program, such as a submission of an initial portfolio and an online self-evaluation report.

It is important to highlight that integrating technology in CEPs is a necessary direction, considering the constant improvement of those resources in the 21st century. In this sense, the main findings of the studies selected point to the relevance of integrating technology in CEPs to facilitate coaches' learning in terms of: (1) providing a positive environment for interaction among participants by using online platforms^{25,27}; (2) understanding their needs by having their reflective portfolio before the start of the program⁵; (3) making them reflect and move beyond self-perceptions by recognizing their actual coaching practice through watching video-recordings of themselves²⁶. In addition, we suggest that integrating online technologies in CEPs may permit coaches from different cities and regions to participate; provide flexibility to engage in the activities during their time off from work; allow coach developer-to-coach or coach-to-coach communication even after finishing the course; encourage a sharing of information among individuals of different realities; and offer a continuation in their learning. However, Montelpare et al.²⁵ highlighted that limited access to high-speed internet may be a limiting factor to teaching strategies involving online technology.

University-Based CEPs

The information extracted from the eight studies classified in the university-based context can be found in table 3. Considering that two studies adopted similar interventions^{31,32}, both were compiled for a joint analysis.

Table 3. University-based CEPs studies published from 2009 to 2015

University-based coach education				
Authors / Year	Teaching Strategy	Implementation Procedures	Data Collection	General Findings
<i>Driska et al.</i> ³³	Small Group Discussion	- Four problem-solving group assignments were given to the students throughout the course (this study focused exclusively on one of them). - Students had to work in small groups to diagnose the problems presented in the assignment's scenario, discuss how these problems could be solved by applying the theories learned during the course, and then craft a solution to the problem through a brief paper (approximately six pages).	E-mails	- Having a stronger understanding of theories enabled the group to apply it and devise a feasible and proper solution. - Group chat discussions can promote flexibility and convenience. It also allows ideas to be processed more slowly and deliberately when compared with a "rapid-fire conversation".
	Problem-Based Learning	- For communication, students used a "chat room" to share ideas, respond to the ideas and critiques of others, and work towards a shared solution in real-time.	Informal Conversations	
	Online Large Group Discussion		<i>Student Instructor Rating System</i>	
<i>Jones et al.</i> ³⁵	Reflective Journal	1 st : Reflection: purpose, limitations and value. 2 nd : Lecture about an explicit theory. Students were asked to apply the theory in their following weeks' practice and to produce a written log in relation to their experiences.	Observation	- Better insight into students' own coaching style. - Students started to use theories during group discussions. - Students agreed that they became better at reflecting after the course. - Interactive student-centered focus was seen as a vital part of the module by the students. - Students felt motivated not to miss classes because they would miss learning experiences shared by other students.
	Small Group Discussion	3 rd : Students were split into two small groups for a discussion about the implementation of the theory given previously. - Eight theoretical perspectives were given to the students form small-groups and discuss.	Group Interview	
<i>Jones et al.</i> ³⁴	Video Diaries	- Participants were asked to keep a video diary to report stories, experiences and thoughts about their lives as undergraduate students. - After each recording, the students uploaded and sent the video to the principal researchers using an online cloud storage service.	Reflective Logs Group Interview	- Students started to develop confidence in talking to the camera throughout the intervention, making it a more informal talk. - Contact made and developed by the researchers seemed key for the participants' continual engagement with the project.

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<i>Kuklick et al.³¹, Kuklick et al.³²</i>	Online Reflective Journals	1st: Introductory orientation meeting. 2nd: Students were asked to submit responses to a set of ORJ prompts. 3rd: Throughout 12 weeks of the semester reflective structured prompts were presented on the students' online platform to facilitate their reflections. - Each week, students were required to submit their online reflection responses to the prompts on the online platform. - Instructors gave points to the students' ORJ response and analyzed its depth.	Kuklick et al.³¹ Questionnaire Kuklick et al.³² Reflective Journals	- ORJ prompts used in conjunction with a higher education coach preparation practicum course can have a positive influence on students' intrapersonal knowledge. - Journaling enhances students' reflective abilities by facilitating the organization of their experiences in their writing beyond simply describing events.
<i>Mesquita et al.³⁰</i>	Not defined	- Questioning (individual, small group, and big group). - Pacing and giving autonomy to the students in problem solving activities. - Changes in verbal language (manipulating of volume, intonation, rhythm, paraphrasing, modeling intervention, and silence or pauses). - Body language (gestures and facial expressions) - Touch to promote confidence and support. - Use of humor.	Observation Field Notes Video/Audio Recording Group Interview	- Students started to critically analyze the information they were presented with. - Student proved to be increasingly more enthusiastic and active, by questioning and answering their colleagues and coach educator alike.
<i>Morgan et al.²⁹</i>	Problem-Based Learning Role-Play Small Group Discussion	1st: Creating the scenes: 1) Coach-athlete and athlete-athlete relationship (selection of players and its problematic legacy); 2) Coach relationship with an assistant (contrasting philosophies and methods); 3) Coach's interactions with the other stakeholders, in this case, the club chairman (power, negotiation and compliance coming to the fore). * Every scene included a second version with a series of soliloquies (extender passages of text or inner thoughts spoken by a character to the audience). 2nd: Presenting the scenes and reflecting: - Live performance and filming of the scenarios (three hour session including the two performances of each scene, being one with the soliloquies and one without). - Afterwards, students participated in small group discussions with facilitated questions. - Students were also asked to identify areas for private research for the upcoming week in order to develop preferred 'solutions'.	Group Interview	- Students indicate that through ethno-drama they could see the emotion and feel involved with the situation, which led to considerable interaction in the post-performance discussions. - Students indicated that scenes lead to a deep reflection and understanding of the context when compared to reading. - Students valued the soliloquies and altered their perceptions and perspectives as the scenes unfolded.

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<i>Roberts et al.</i> ²⁸	Problem-Based Learning	(1) Use of a 'generative learning' format that enabled students to devise solutions to open-ended or guided problems; (2) Use of a 'discussion based format' that provided a sense of legitimacy for the student;	Course Instructor Reflections	- Students had a negative perspective of the case-method teaching (CMT), but throughout the course they started to enjoy the dynamics and group discussions. - CMT strategies were seen as positive by students due to the real world of coaching situations.
	Large Group Discussion	(3) Inclusion of specifically designed 'problem complexity' that called for integrated responses to problems; (4) Present students with the opportunity to work with 'real-life' coaching scenarios, and to devise creative, authentic but credible solutions.	Group Interview	- Students made connections with different academic classes, previously completed modules and commented on the transfer of the problem from their case into the real world of coaching.
	Micro-Coaching	- Students were presented to practice cases that enabled them to analyze data, critical review texts, search for literature and engage in discussion-based lectures.	Observation	

Source: The authors

After analyzing the studies classified in university-based context, we identified a tendency towards the use of teaching strategies regarding problem-based learning^{28,29,33} and small or large group discussions^{28,29,33,35}. Therefore, in general, the studies carried out in the university context presented the use of strategies that promote coaches' engagement in reflection activities^{28,29,31-35}, which is a tendency that had been observed previously in this context³.

The interactive nature of the programs was reported positively by the coaches in terms of allowing experience sharing with peers, becoming increasingly more enthusiastic and involved with the program, and having a better understanding of the content^{28-30,35}. Likewise, the reflective strategies adopted in university-based CEPs also provided positive findings, such as: coaches perceived and increase in their reflective skills^{29,31,32,35}, coaches had a better insight into their own coaching style³⁵, and coaches started to critically analyze the information they were presented with³⁰. Therefore, the positive results obtained in the studies of this context contribute to better understand the possible findings achieved when using some principles mentioned in previous research^{2,14,15,37}, such as: adopting active teaching strategies and putting the coach as the center of the learning process.

The authors also highlight the potential of having coach developers in universities who are in constant contact with the scientific literature, which can facilitate the relationship between the teaching strategies adopted in this context and the common trends discussed in the sports coaching scientific community. The potential of coach developers was expressed in the studies identified through the inclusion of theories in the contents covered by the courses, giving support to discussions and reflections about sports coaching^{28,29,33,35}.

Conclusion

The findings of this study identified the tendency of each context to point out certain teaching strategies to be adopted. In small-scale programs, for example, there is a search for meeting the specific needs of sports club coaches through reflection and discussions among the participants. Due to the need to reach a higher number of coaches, large-scale programs presented a trend toward the use of technological resources and online platforms, together with the promotion of discussion among participants. On the other hand, university-based

programs have often adopted problem-based teaching strategies and a frequent reflection of the coaches.

The evidences suggest some signs of a continuum into a paradigm shift in all contexts, which is characterized by the constant use of teaching strategies that promote the engagement of coaches through group discussions and group or individual reflection. These new directions in teaching strategies adopted by CEPs may be justified by the increased professional recognition of the sports coach, as well as the recurrent technological advances of the 21st century, given the wide access to information, mainly through the internet. Therefore, this reinforces the need for CEPs to adopt teaching strategies that promote not only specific knowledge, but also the development of learning skills that contribute to a continuous and independent learning process.

However, the literature on sports coaching is still searching for methods of investigation and evaluation to prove through longitudinal empirical data the development of different types of knowledge, as well as the impact of CEPs on the coaching practice. Identifying such aspects will help support researchers, coach developers, and sports organizations to adopt appropriate teaching strategies according to the context in which the program takes place. In addition, in order to improve and have in-depth knowledge about the positive and negative aspects of the teaching strategies adopted in CEPs, we suggest the conduction of literature review studies to investigate coaches' perception of their participation in coach education programs.

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