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Research article

Coaches' perceptions of competence and acknowledgement of training needs related to professional competences

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Abstract
The purpose of the present study was to examine coaches' perceptions of competence and acknowledgement of training needs related to professional competences according to the professional experience and academic education. The participants were 343 coaches from several sports, who answered to a questionnaire that includes a scale focused on perceptions of competence and another scale on acknowledgment of training needs. An exploratory factor analysis with Maximum Likelihood Factoring was used with *Oblimin* rotation for the identification of emergent factors. Comparison on coaches' perceptions in function of coaching experience and coaches' academic background were made applying One-way ANOVA and Tukey's post hoc multiple comparisons. Factor analysis on coaches' perceptions of competence and acknowledgement of training needs made apparent three main areas of competences, i.e. competences related to annual and multi-annual planning; competences related to orientation towards practice and competition; and personal and coaching education competences. Coaches' perceptions were influenced by their experience, as low experienced coaches rated themselves at lower levels of competence and with more training needs; also coaches with high education, in Physical Education or others, perceived themselves as more competent than coaches with no higher education. Finally, the majority of the coaches perceived themselves to be competent but, nevertheless, they indicated to have training needs, which brings an important feedback to coach education. This suggests that coaches are interested in increasing their knowledge and competence in a broad range of areas which should be considered in future coach education programs.

Key words: Coaching education, perceptions of competence, professional competences, science of coaching, training needs.

Introduction

The issue of the professional competences necessary to the coaching process has claimed the attention of coaching researchers (Abraham et al., 2006; Demers et al., 2006; Jones et al., 2004; Kirschner et al., 1997; Westera, 2001). The earlier research agenda restricted to coaches' overt performance was criticized for missing the underpinning mental premises that could explain coaches' behaviors. Consequently, the research turned its attention to examining the coaches' thoughts and knowledge (Jones and Wallace, 2005). Though, in so far as professional competence reflects the coaches' capacity to apply their knowledge and beliefs, while seeking for a more effective practice, the research on coaching education has been expanding the interest from what coaches need to know to what they need to be able to do with what they know (Cushion et al., 2003; Demers et al., 2006).

Traditionally there is some confusion between knowledge and competence concepts although they have different meanings. Despite the diverse interpretations and forms that knowledge may assume, which compound the difficulty to define knowledge, traditionally, it does not comprise the ability to apply it (Kirschner et al., 1997; Pearson, 1984; Perrenoud, 1999). According to Kirschner et al. (1997) and Westera (2001) knowledge refers to a theory, a conceptual framework or a set of principles in a given domain which is remembered, learnt, or reproduced. However, the need to meet the requirements of a changing society will be fulfilled by considering competence as the application of knowledge in a specific setting (Kirschner et al., 1997; Westera, 2001). Therefore, competence is interpreted as a function of knowledge, skill, situation, self-confidence and values (Kirschner et al., 1997; Stephenson and Weil, 1992).

As professional competences allow coaches to apply theory in their practice, competences become an important part of coaching process, and must be thoroughly understood in order to enhance coaching effectiveness. Job-task analysis and qualitative approaches made apparent that coaches' behaviors and competences extended mainly to the domains of training, competition and managing (Côté and Salmela, 1996; Côté et al., 1993; Côté and Sedgwick, 2003; Demers et al., 2006; Duffy, 2008). Concerning these major domains, coach education programs as the National Coaching Certification Program (NCCP), proposed by the Coaching Association of Canada (CAC), the thematic network project AEHESIS (Aligning a European Higher Educational Structure in Sport Science) (Duffy, 2008), and the high academic educational program *Baccalaureate in Sport Intervention* (Demers et al., 2006), among others, put on view that coaches' main tasks include: to organize, implement and evaluate plans for the long and short term; to conduct and support players during practices and competitions; and to co-ordinate assistant coaches and other staff members, for instance, being responsible for managing human resources. Moreover, coaches' personal and social competences, representing the ability to communicate, learn and be responsible (Duffy, 2008), form the basis for their interaction with participants, assistant coaches and other sportspersons as to lead coach education programs (Jones et al., 2002; Salmela, 1996).

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Therefore, a broad range of coaches' competences is required for coaches to perform their role effectively. The study of coaches' perceptions of competence and acknowledgement of training needs allows an understanding of the aspects coaches believe they are competent and those in which they perceive to need more training, which in turn provides valuable information to improve coach education. Perception of competence has been studied as an important aspect of teaching and coaching effectiveness (Coladarci, 1992; Feltz et al., 1999). Bandura's social-cognitive theory (1977) describes perception of competence as a cognitive process in which individuals make a subjective judgment about their ability to cope with certain environmental demands. Several studies about coaches' perceived competence to improve learning and performance of their athletes (Lirgg et al., 1994; Taylor and Betz, 1983) have been developed. In particular, Feltz et al. (1999) measured coaching self-efficacy and found that past winning years in coaching, perceived ability of team and parental support were significant predictors of coaching self-efficacy.

Coaches' perception of competence and acknowledgement of training needs could vary according to the coaches' characteristics namely professional experience and academic education. Indeed coaches' professional experience is taken into account in research as an important source of knowledge and competence (Gilbert and Trudel, 2001; Irwin et al., 2004; Jones et al., 2002; 2003; 2004; Wright et al., 2007). Additionally, to look into coaches' academic training, particularly in physical education and sport, gains pertinence when considering that the academic ground offers a support to coaches' behaviors by providing knowledge on sport science, for instance about coach education and didactics (Bloom, 1997; Demers et al., 2006).

The main purpose of this study was to examine coaches' perception of competence and acknowledgement of training needs related to professional competences. Specific research questions aimed to grasp the competences related to the coaching role in which coaches perceive themselves more confident; the areas of professional competence in which coaches perceive to have training needs; and how coaches' perception of competence and training needs are associated with different personal characteristics such as experience and academic education.

Methods

Participants

This study included 343 coaches (289 men and 54 women), whose ages ranged from 16 to 65 years (M = 32.37, SD = 9.84). Coaches' professional experience ranged from 1 to 25 years (M = 5.94, SD = 6.47). Considering that professionals attain the stabilization period of their development after 5 years of experience (Burden, 1990) and taking into account the 10-year-rule for the attainment of expertise (Abraham et al. 2006), coach experience was classified into three categories, *low experienced* coaches (up to 5 years of experience; n = 129; 38.6%); medium *experienced* coaches (5 to 10 years of experience; n = 152; 45.5%), and *high experienced* coaches (10 and above years of experience; n=53; 15.9%). The influence of academic background on coach's appraisals was also inspected. Higher education in Physical Education and Sport (P.E.) develops specialized contents regarding sport sciences (Bloom, 1997; Demers et al., 2006), so coaches were also classified whether they had a P.E. degree, a degree below higher education, or other higher education degree. In this last group, it was verified that coaches had degrees from a broad range: economics, psychology, management, agrarian sciences, biology and military studies not related in the most part with education. Thus, 42.1% (n=142) of coaches have elementary to secondary school levels education; 45.7% (n = 154) a P.E. degree; and 12.2% (n = 41) other higher education degree.

Coaches under study cover twenty-two sports: handball, volleyball, soccer, athletics, swimming, basketball, gymnastics, rugby, tennis, table tennis, kempo, badminton, cycling, karate, judo, hockey, canoe, fencing, indoor football, figure skating, rowing and shooting, in a total of 274 (79,9%) from team sports, and 69 (20,1%) from individual sports.

Procedures

Three strategies were used to develop the questionnaire, while fulfilling the requirements for construct and content validity**.** First, the process of item generation and design for the first version of the questionnaire was based on the underlying theoretical framework and a review of the relevant literature (Abraham et al., 2006; Côté and Salmela, 1996; Côté et al., 1995; Duffy, 2008; Kirschner et al., 1997). Second, a panel of three experts with PhD degree in Sport Pedagogy and experience in coach education evaluated if the initial pool of questionnaire items represented the competences profile related to the specific thematic. Some items were removed and other items were modified upon their advice. Third, the revised version of the questionnaire was then subjected to a pilot study with a sub-sample of 30 coaches of a range of sports and coaching experience, in order to test items clarity and accuracy, and the feasibility of the questionnaire.

The final version of the questionnaire is composed of a section addressing coach's demographic characteristics, and two scales with 23 items each. One scale is focused on coach's self-perception of competence and the other on the acknowledgment of training needs. The items were answered on a 5 point Likert type scale from 1 to 5: non-competent; slightly competent; competent; very competent; extremely competent for perceptions of self-efficacy and no needed; slightly needed; needed; much needed and extremely needed for training needs.

The data collection was obtained from coaches that attended coaching education seminars throughout the 2008/2009 season. After assuring confidentiality and anonymity, coaches who volunteered were conducted to a quiet room where the proceeding to answer the questionnaire was explained, and informed consent obtained. The participants had time to ask questions and the time to complete the questionnaire was not limited. The time to fill in the questionnaires ranged from twenty-five to thirty-five minutes.

Exploratory factorial analysis was applied with the

purposes of assessing the questionnaire's psychometric properties and factorial structure. Aiming to reduce the number of variables, factor analysis used the Maximum Likelihood Method which minimizes the discrepancy between the population and sample covariance matrix maximizing the fitting function. In order to analyze the relations between factors, the analysis was applied with *Oblimin* rotation, since it allows the factors to be correlated (Tabachnick and Fidell, 2007).

The number of participants satisfied Comrey and Lee's (1992) recommendation of having at least a subject to item ratio of 5:1. In addition, the criteria of a minimum *eigenvalue* of 1.0 (Pedhazur, 1971) and at least three loads above 0.40 were necessary to retain a factor. The factorial solution is also confirmed in the *scree* plot approach, validating the number of selected factors.

As the KMO tests pointed out a very good correlation between the variables (KMO = 0.939 and 0.946) and the Bartlett's Test resulted in significant differences ($p<0.01$), the factorial analysis' requirements were verified. The fidelity of the instrument was also tested through the assessment of its internal consistency. The Cronbach alpha was fixed on 0.70 (Nunnally and Bernstein, 1994). Factor scores were calculated considering a *weighted* arithmetic mean of the items for each factor.

Finally, descriptive statistics were used to calculate frequencies, percentages, means and standard deviations. In order to explore coaches' perceptions in function of their professional experience and academic education, One-way ANOVA was applied using Tukey's post hoc multiple comparisons.

Results

The exploratory factorial analysis produced solutions with 3 factors for both scales under analysis - perceptions of self-efficacy and training needs (Table 1). The respective subscales showed good internal consistency, with Cronbach's alpha of .90 to .96. As each factor presented *eigenvalues* higher than 1.0 and was composed by 6 to 9 items, none were excluded from the study. Also, the factors include all the 23 items that composed the questionnaire.

Together, the three factors of the self-efficacy scale explain 69.35% of the total variance. As presented in table 1, the first factor explains the greatest amount of variance (59.27%). Coaches' perception of competence related to annual and multi-annual planning (factor 1) presented an average of 3.96; perceived competences related to practice and competition orientation (factor 2) presented an average of 3.90; and, finally, those related to personal and coaching education competences (factor 3) presented an average of 3.29. In average, coaches'

Table 1. Factorial matrix resultant from the factorial analysis with *Oblimin* rotation, analyzing coaches' self perceptions related to professional competences.

Self-perceptions' factors and items			Loadings	Alpha	*Eigen* values	% of Variance
1 Competences related to Annual and Multi-annual Planning	6	To organize and implement the multi-annual plan.	.842	.942	12.496	54.329
	3	To carry out the multi-annual preparation planning, considering the team and the individual needs.	.835			
	12	To establish the competition multi-annual plan.	.831			
	9	To evaluate the multi-annual preparation planning.	.817			
	15	To relate the competition with the multi-annual plan.	.794			
	5	To organize and implement the annual plan	.624			
	8	To evaluate and modify the annual planning, adapting it to unexpected situations.	.589			
	14	To coordinate the competition with the annual plan.	.589			
	2	To carry out the annual plan, considering the team and the individual needs.	.428			
2 Competences related to Practice and Competition Orientation	13	To guide an athlete during the competition, considering technical and discipline aspects.	.792	.915	2.01	8.737
	10	To prepare an athlete and a team to the competition.	.77			
	7	To evaluate and modify the practice session, adapting it to unexpected situations.	.758			
	4	To organize and direct the practice session.	.729			
	1	To plan the practice session considering the team and the individual needs.	.718			
	11	To prepare a season's competition, establishing goals adjusted to the team's level.	.698			
3 Personal and Coaching Education Competences	20	To be responsible about the world vision (social aspects and norms), trying to modify behaviors	.757	.909	1.444	6.28
	22	To solve problems within new situations.	.727			
	21	To communicate ideas, problems and solutions.	.71			
	17	To lead an organization, managing the athletes, coaches and sport specialist's activities.	.663			
	18	To guide the education of beginner coaches.	.655			
	19	To manage other coaches education.	.633			
	16	To assume the head coach's role, managing other coaches and sport specialist's activities.	.596			
	23	To be self-sufficient in learning, by a reflexive practice.	.533			

Table 2. Factorial matrix resultant from the factorial analysis with *Oblimin* rotation, analysing coaches' training needs related to professional competences.

		Training needs' factors and items	Loadings	Alpha	*Eigen* values	% of Variance
1 Competences related to Practice and Competition Orientation.	10	To prepare an athlete and a team to the competition.	.836	.961	13.631	59.266
	13	To guide an athlete during the competition, considering the technical and discipline aspects.	.818			
	7	To evaluate and modify the practice session, adapting it to unexpected situations.	.808			
	1	To plan the practice session considering the team and the individual needs.	.771			
	23	To be self-sufficient in learning, by a reflexive practice.	.767			
	11	To prepare a season's competition, establishing goals adjusted to team's level.	.733			
	4	To organize and direct the practice session.	.636			
2 Competences related to Annual and Multi-annual Planning	6	To organize and implement the multi-annual plan.	.815	.938	2.177	9.467
	9	To evaluate the multi-annual preparation planning.	.81			
	12	To establish the competition multi-annual plan.	.743			
	15	To relate the competition with the multi-annual plan	.719			
	2	To carry out the annual plan, considering the team and the individual needs.	.577			
	8	To evaluate and modify the annual planning, adapting it to unexpected situations.	.557			
	5	To organize and implement the annual plan	.551			
	14	To coordinate the competition with the annual plan	.499			
3 Personal and Coaching Education Competences	19	To manage other coaches education.	.803	.905	1.539	6.689
	17	To lead an organization, managing the athletes, coaches and sport specialist's activities.	.779			
	18	To guide the education of beginner coaches.	.737			
	16	To assume the head coach's role, managing other coaches and sport specialist's activities.	.722			
	22	To solve problems within new situations.	.501			
	20	To be responsible about the world vision (social aspects and norms), trying to modify behaviors	.467			
	21	To communicate ideas, problems and solutions.	.459			

perception of competence ranged from "competent" to "very competent".

Considering the training needs scale (Table 2), the three factors explain 75.42% of the total variance. The results show that coaches highlighted training needs related to practice and competition orientation (factor 1), with an average of 3.48; competences related to annual and multi-annual planning (factor 2), with an average of 3.02 and personal and coaching education competences (factor 3), with an average of 3.04. Regarding the training needs, in average, coaches rated competences represented by factors 1, 2 and 3 as "needed" to "much needed".

Based on the factors that characterize coaches' perceptions of competence and training needs related to professional competences, it was completed a comparative analysis of coaches groups formed by professional experience and academic education.

Considering professional experience (Table 3), we found significant differences in coaches' perceptions in all factors. The results revealed that higher experienced coaches perceived themselves more competent in annual and multi-annual planning ($F_{2.321} = 6.778$; $p = 0.001$), in practice and competition orientation ($F_{2.325} = 4.208$; $p = 0.016$) and, also, in personal and coaching education competences ($F_{2.316} = 5.991$; $p = 0.004$) than the low experienced coaches.

Significant differences were, also, found in coaches' perception of their training needs (Table 3). The low experienced coaches believed they need more training than the higher experienced coaches regarding competences related to practice and competition orientation ($F_{2,310} = 4.685$; $p = 0.012$), and to annual and multi-annual planning ($F_{2, 324} = 4.489$; $p = 0.013$). Again, no differences were observed with the group of medium experienced coaches.

Considering coaches academic education (Table 4), several significant differences were identified in coaches' perceptions of competence. In fact, regarding the three factors - competences related to annual and multi-annual planning ($F_{2, 324} = 11.086$; $p < 0.001$), practice and competition orientation ($F_{2, 326} = 15.702$; $p < 0.001$) and personal and coaching education competences ($F_{2, 318} = 12.958$; $p < 0.001$) - both coaches with P.E. degree and coaches with other higher education degree perceived themselves more competent than coaches with degree bellow higher education. In contrast to these results, a unique difference was shown respecting to the training needs (Table 4) and between the two higher education groups: P.E. group acknowledged lower values of training needs regarding the competences related to practice and competition orientation than coaches with other higher education degrees ($F_{2, 312} = 3.710$; $p = 0.26$).

Discussion

The analysis of coaches' perceptions of competence and

Table 3. Comparative analysis of coaches' perceptions of competence and educational needs related to professional competences considering the professional experience.

Professional Experience		Mean	SD
Perceptions of competence			
Competences related to Annual and Multi-annual Planning (b)	Low experienced	3.446	.727
	Experienced	3.587	.686
	High experienced	3.757	.670
Competences related to Practice and Competition Orientation (b)	Low experienced	3.889	.616
	Experienced	4.073	.594
	High experienced	4.091	.590
Personal and Coaching Education Competences (b)	Low experienced	3.419	.692
	Experienced	3.695	.708
	High experienced	3.688	.661
Training Needs			
Competences related to Practice and Competition Orientation (b)	Low experienced	3.185	.871
	Experienced	2.859	.871
	High experienced	2.856	.992
Competences related to Annual and Multi-annual Planning (b)	Low experienced	3.180	.851
	Experienced	3.141	.972
	High experienced	2.869	.924
Personal and Coaching Education Competences	Low experienced	3.133	.905
	Experienced	3.100	1.024
	High experienced	2.919	.954

Legend: Statistical differences between a) Low experienced and Experienced; b) Low experienced and High experienced; c) Experienced and High experienced.

acknowledgement of training needs resulted in a similar three factors solution, making apparent competences related to annual and multi-annual planning, competences related to practice and competition orientation, and personal and coaching education competences. Hence, coaches, in general, perceived that they need more professional education in a broad range of areas, pointing towards an assorted model of training needs.

However the reason why the item "To be self-sufficient in learning by a reflexive practice" had entered into different factors from one scale to the other is not easy to ascertain. While in the coaches' perceptions of

Table 4. Comparative analysis of coaches' perceptions of competence and educational needs related to professional competences considering their academic education.

Academic Education		Mean	SD
Perceptions of competence			
Competences related to Annual and Multi-annual Planning (a; b)	Bellow higher education	3.403	.638
	P.E. degree	3.735	.730
	Other higher education	3.856	.724
Competences related to Practice and Competition Orientation (a; b)	Bellow higher education	3.799	.583
	P.E. degree	4.163	.599
	Other higher education	4.172	.540
Personal and Coaching Education Competences (a; b)	Bellow higher education	3.375	.673
	P.E. degree	3.764	.693
	Other higher education	3.750	.588
Training Needs			
Competences related to Practice and Competition Orientation (c)	Bellow higher education	3.173	.805
	P.E. degree	2.874	1.026
	Other higher education	2.902	1.042
Competences related to Annual and Multi-annual Planning	Bellow higher education	3.148	.819
	P.E. degree	2.949	.976
	Other higher education	3.026	1.011
Personal and Coaching Education Competences	Bellow higher education	3.085	.896
	P.E. degree	3.020	1.029
	Other higher education	3.069	.951

Legend: Statistical differences between a) Bellow higher education and P.E. degree; b) Bellow higher education and Other higher education; c) P.E. degree and Other higher education.

competence scale the referred item loaded on the "Personal and Coaching Education competences" factor, in the acknowledgement of training needs scale it loaded on the "Competences related to Practice and Competition Orientation" factor. A tentative explanation for this apparent divergence could be that factors are not uncorrelated, and consequently, even if coaches consider that to be self-sufficient in learning by a reflexive practice is a personal and critical competence, they also take it of fundamental importance for the practice and competition orientation. Therefore coaches recognize that becoming a reflexive practioner is a training need related to skilled performance in the practice domain. As Irwin et al. (2006) verified, from a study with six graduates coaches on Coaching Science, reflection exists as an important element of coaching practice; moreover, as there is a 'gap' between the academic experience and the 'real world' reflective practice of sports coaching graduates, the development of reflective practice within sports coaches would appear critical to enhance professional competences.

Competences related to Annual and Multi-annual Planning emerged as the strongest factor for coaches' perceptions of competence scale, which means that those competences may provide an excellent starting-point to examine the development of coaches' competences. Indeed, whatever the coaching experience or academic education, regarding annual and multi-annual planning, coaches indicated that they perceive themselves as *very competent*. Nevertheless, coaches perceived that training in those areas is still *needed*. Demers et al., (2006) ascribed that developing a seasonal or annual plan is a key goal for an undergraduate program of coach education. Coaches from under study emphasized long term plans, considering prospective and strategic plans as a fundamental part of their professional competence. In its turn research have dedicated little attention to the planning aspects, namely to long term plans. Côté and Sedgwick (2003) point out the importance of the conception of initiative plans, instead of simply reacting to various situations in training and competition, and affirmed that coaches *plan proactively by preparing training for the long and short-term and their athletes for unexpected situations that may occur* (p. 67). In fact, the development of the strategic plan greatly helps to clarify the micro and macro plans and ensure that particular action plans are all "on the same script". This emphasis in the strategic planning process itself is considered as a very important step in coaching planning.

Moreover, in this study, to plan, prepare and guide competitive experience and practice sessions were put together in the same factor, the one that unveils the daily work of coaches and the basic competences of the profession. This factor, named *Competences related to Practice and Competition Orientation* emerged as the one in which they needed more training (*much needed*), even though they perceive themselves as *very competent*. Demers et al. (2006) emphasizes the competences of communicating and implementing training tasks, providing support and managing athletes during competition. Furthermore, the elite coaches interviewed by Abraham et al. (2006) identified the competences of providing feedback and skill acquisition as the key-words of coaches' pedagogy; which they employed to explain how to construct the practice session and to adjust information to the ever changing environments of practice and competition.

A broad range of competences related to social issues, sport management and coaching education, called *Personal and Coaching Education Competences*, emerged as the third factor for perceptions of competence and acknowledgement of training needs. Although coaches' perceptions resulted in being *competent* this factor was also classified as *needed* as the others. Those findings seem to be a sign of coaches' permanent seek for competence and curiosity to learn more in a broad range of areas. Vargas-Tonsing (2007) reported the interest of coaches in learning more about communication with parents and athletes, since the communication is an essential part of coaching (Abraham et al., 2006; Vargas-Tonsing, 2007; Wiersma and Sherman, 2005). Coaches' success and social status depends on their ability to make all sportspersons (athletes, parents, directors, etc.) trust on their skills. Accordingly, in this study, coaches recognize that effective communication skills are essential for success and link this competence with leadership and good teaching practices. Salmela (1996), also, highlights the importance of coach's moral values and social and cultural sensitivity being this fact particularly important considering the large amount of time that coaches spend with the athletes and the power they exert over athletes' minds. Recent studies (e.g. Cushion and Jones, 2006; Jones et al., 2004; Potrac and Jones, 2009) point out that social interactions are in the center of the coaching process, as "coaches are social beings operating in a social environment" (Jones et al., 2002, p. 35). However Cushion and Jones (2006) state that the social dynamics which founds the relationships between all sportspersons is not yet sufficiently understood. Thus, it is argued that coaches' activities ought to be examined and explained as such, for instance using ethnographic research, in order to better inform the coaching training programs.

Also the administrative and managerial tasks inherent to coaching are ascribed by thematic network project AEHESIS (Duffy, 2008) and by the *Baccalaureate in Sport Intervention*'s program (Demers et al., 2006). The elite coaches interviewed by Abraham et al. (2006) referred to themselves as program leaders, and highlighted the importance of being able to manage human resources, for instance, leading a team of support staff. Besides general managing and head coach's skills, the participants of this study also classified as important and needed competences of educating beginner coaches. Research on coaching education has highlighted the importance of learning with more experienced coaches (Bloom et al., 1998; Cushion et al., 2003; Duffy, 2008; Gilbert and Trudel, 2001; Gould et al., 1990; Irwin et al., 2004; Knowles et al., 2005). As a consequence, not only the coaching educational programs should include beginners' coaches supervised field experiences (Cushion et al., 2003) but also prepare coaches to survey less experienced colleagues. The elite coaches interviewed by Bloom et al. (1995) considered essential, to the improvement of coaching education, the development of a training program for

mentors, which are experimented coaches that supervise other coaches' education (Irwin et al. 2004). Also, the AEHESIS's project (Duffy, 2008) considers as one of the main activities associated with the coaching role the teaching, instructing and mentoring of sportspersons.

The results concerning professional experience showed that low experienced coaches perceived themselves less competent than high experienced coaches in all three factors. Also, they pointed out more training needs in issues related to practice and competition orientation, and annual and multi-annual planning. Learning through experience is undoubtedly one of the most referred ways of learning (Fleurence and Cotteaux, 1999; Jones et al., 2003, 2004; Wright et al., 2007), as well as source of knowledge (Gilbert and Trudel, 2001; Jones et al., 2002; Lemyre and Trudel, 2004; Wright et al., 2007). Hence, coaches who have experienced more practical situations describe themselves as more competent. Lemyre and Trudel (2004) studied youth ice hockey and soccer coaches' opinion about the content of the Canadian NCCP and concluded that their prior experience had influenced their judgment. Experience was also pointed out by Jones et al.'s (2004), since when asked about the factors that influenced their professional development, coaches mentioned practical experience in the first place.

Considering academic education, under study demonstrates that coaches with higher education degrees (P.E. or others) perceive themselves as more competent than coaches with no high education. The academic environment, even if not sport specific, promotes the development of basic professional competences, for instance, related to communication, leadership, evaluation or finding solutions to problems, which support coaches' behaviors and, consequently, may enhance the perception of competence as founded.

However some researchers (e.g. Bloom, 1997; Demers et al., 2006) highlighted that sport specific education has the advantage of supporting coaches' behaviors with theoretical knowledge from the sport sciences, no differences in perceptions of competence were found between coaches with a PE degree and other higher education. The lack of more differences between these groups, into certain extent, may be due to the fact that 'other higher education degree' includes a broad range of academic fields, majorly in areas not related to teaching. However, a higher education allows a higher cultural level that could affect in a positive way coaches' perception about their knowledge and competence to coaching. In the future it will be necessary to investigate about the influence of the P.E. course in coaches' perceptions, namely using qualitative methods as interviews, to understand why those differences were not verified. However related to the training needs' findings a difference was found between coaches with a P.E. degree and other higher education. This is related to practice and competition orientation and indicates that coaches without sport specific education recognize more strongly the need for developing the basic competences underpinned the coaches' daily work.

Furthermore further studies, which go beyond these findings, are recommended trying to understand how perceptions of professional competence and training needs are influenced by the interaction of several coach characteristics.

Conclusion

Coaches' perceptions of competence and acknowledgement of training needs resulted in three main areas: competences related to annual and multi-annual planning, competences related to practice and competition orientation and, finally, personal and coaching education competences. Although the competences were grouped in only these three factors, it included an assorted range of coaching competences, about all of which coaches indicated to have training needs, that brings an important feedback to coaching education. Nevertheless, the tasks that coaches had the most need in performing were related to the training with a slight tendency to consider this area as the most necessary.

Whatever were the coaches' years of experience or academic education, it was noticed that even though coaches considered themselves at least competent, they also perceive all kind of competences as needed. Those results suggest that coaches are interested in learning and in increasing their knowledge and competence in a broad range of areas, ascribing the importance of the research about coaches' conceptions and educational needs to coaching improvement. The research is this area also claims, the need to identify, develop, and evaluate coaching competencies at all levels of coaching enabling coaches to access and communicate with the evolving body of coaching knowledge and best practice in a manner that will foster and support continuous learning and development. Regarding the competences that emerged in this study and the subjects that compose each competence, it is advisable to consider them in the practical context, i.e., within the educational programs field. Especially the competences related to coaching education and managing, about which there is still a lot of issues to explore, should be consider in the development of programs curriculum and learning strategies.

More insights to coaching education can be provided through this study's findings. For instance, it was also found that the way coaches perceive their competence and training needs are influenced by their own experience. Indeed, low experienced coaches perceive themselves as less competent and with more training needs. As experience has been stated as a major source of knowledge and learning, we would recommend that training programs began with the evaluation of the training needs of the coaches, in order to move towards a more individualized training and, also, more close to the real training requirements. Moreover coaches' self-perception about competence demonstrated that coaches with high education (in P.E. or others) perceived themselves as more competent than coaches with no high education. Although academic training in Physical Education should be a differentiating factor of coaches' perceptions, little differences between coaches with education in Physical Education and other high courses were found. As 'other higher education fields' are not, in majority, related to teaching, a more contextualized study, that considers the nature and

the quality of the education courses - specially using qualitative methods - is needed in order to better understand these findings.

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Key points

- Coaches' perceptions of competence and acknowledgement of training needs resulted in three main areas: competences related to annual and multi-annual planning, competences related to practice and competition orientation and, finally, personal and coaching education competences.
- The professional tasks that coaches had the most need in performing were related to the training orientation.
- Coaches with higher education degrees (P.E. or others) perceive themselves as more competent than coaches with no higher education.
- Low experienced coaches perceived themselves less competent than high experienced coaches. Also, they pointed out more training needs in issues related to practice and competition orientation, and annual and multi-annual planning.

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