

Effects of a sport leadership programme on the perceptions of university students about their leadership competencies (Efectos de un programa de liderazgo deportivo sobre las percepciones de alumnado universitario)

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Effects of a sport leadership programme on the perceptions of university students about their leadership competencies*

Efectos de un programa de liderazgo deportivo sobre las percepciones de alumnado universitario acerca de sus competencias como líderes

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Abstract

The main purpose of this study was to evaluate the effects of a sport leadership programme (ESLP) on variables related to the leaders' perception regarding instrumental, personal, and systemic skills in university students. In doing so, the second purpose was to analyse the transcultural validity of the *Cuestionario de Evaluación de Competencias Transversales de Grado* (CECTGRA). Participated 61 students as leaders, 25 mentors and 25 employers, from five European countries. The design was pre-test-post-test, following a longitudinal approach of 24 months to evaluate the effects of the ESLP on variables related to the leader's perception. An adaptation of the CECTGRA was administered. The questionnaire was valid and reliable to know the effects of the ESLP on the students' perceptions. However, the sports leaders did not improve their perceptions of competence regarding development, mastery and relevance after the application of the programme. From the finding of this study it is recommended to improve the programme based on the leadership competencies to develop, the teaching-learning methodologies to follow, the activities to implement, and the roles to determine.

Key words: Leadership development, graduate skills, sport pedagogy, higher education.

Resumen

El objetivo principal fue evaluar el efecto de un programa de liderazgo deportivo (ESLP) sobre variables relacionadas con la percepción de los líderes acerca de sus habilidades instrumentales, personales y sistémicas con alumnado universitario. Para ello, fue necesario analizar la validez transcultural del *Cuestionario de Evaluación de Competencias Transversales de Grado* (CECTGRA). Participaron 61 alumnos como líderes, 25 mentores y 25 empleadores de cinco países europeos. El diseño fue pre-test-post-test, siguiendo un enfoque longitudinal de 24 meses para evaluar los efectos del ESLP sobre variables relacionadas con las percepciones de los líderes. Una adaptación del CECTGRA fue contestado en las evaluaciones pre-test-post-test. El cuestionario fue válido y fiable para saber los efectos del ESLP sobre las percepciones de los estudiantes. Sin embargo, los líderes deportivos no mejoraron sus percepciones de competencia respecto a desarrollo, dominio y relevancia tras la aplicación del programa. A partir de estos resultados, se recomienda mejorar el programa a partir de las competencias de liderazgo a desarrollar, las metodologías de enseñanza-aprendizaje a seguir, las actividades a implementar y los roles a determinar.

Palabras clave: Desarrollo de liderazgo, habilidades de grado, pedagogía deportiva, educación superior.

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Introduction

The European Union Competency Framework identified the leadership as one of the competencies that high education students should possess for their professional performance (European Commission, 2016). According to the literature, “leadership is one of the most observed phenomena on earth” (Burns, 1978, p. 3). Gould and Voelker (2010) described leadership as the competence to demonstrate the ability to energize and inspire individuals to strive towards the vision of the future, as well as to present clearly, goals and objectives in order to create a sense of direction and purpose for employees and act as a catalyst for action. Connaughton, Lawrence, and Ruben (2003) defined leadership through nine principles: complex process, other-oriented, interactive and dynamic, contextual, emergent, a science and an art, enacted through communication, increasingly mediated and virtual in nature, and can be learned and taught. The acquisition of the leadership competence requires a complex process that involves the effort of an individual (i.e., a leader) to help groups identify and achieve personal and group goals (Smith & Wolverton, 2010). Therefore, preparing future leaders is a long-standing priority in higher education, but doubts have been raised about whether this goal is being achieved as a leader (Caza & Rosch, 2013). Developing leadership in students is part of the remit of higher education institutions (Skalicky et al., 2020). Given the gap between educational intent and student attitudes, it is not surprising that there have been many calls for institutions to re-think how they educate future leaders (DeRue, Sitkin, & Podolny, 2011). The contested understanding of the term leadership has resulted in lack of clarity regarding how this may be developed in higher education (Skalicky et al., 2020). Demands on academic leadership are increasing, which raises the need for leadership training promote “lifelong learning” (e.g., McCauley-SmithWilliams, Gillon, & Braganza, 2015; Söderhjelm, Björklund, Sandahl, & Bolander-Laksov, 2018). In recent years, some theoretical models and leadership education programme have appeared to improve the leadership. However, it has been noted that the perceptions that people have regarding themselves play a crucial role in their development, in this case, as leaders (Caza & Rosch, 2013; Meroño, Calderón, Rieckmann, Méndez-Giménez, & Arias-Estero, 2018). Despite many researchers are trying to implement programmes to promote leadership, few of them have been created for university students from a European perspective in order to improve the perceptions about their leadership competencies.

According to Skalicky et al. (2020), student leadership development can be incorporated into the curriculum, “bolted on”, or exist outside of the curriculum entirely. In order to facilitate their inclusion, theoretical frameworks on leadership have been created in recent years. The Social Change Model of Leadership Development (SCMLD) was created by a group of leadership educators to teach students the competencies they would need to lead in contemporary society and was specifically intended to be appropriate for undergraduate students (Higher Education Research Institute, 1996). Moreover, the Developing and Supporting Student Leadership Framework (DaSSL) was created to assist programme developers and coordinators to more intentionally plan for and support student leadership development based on four components (Skalicky et al., 2020): (a) a reflection tool and action plan, (b) good practice principles and guidelines, (c) case studies, and (d) supporting resources. In apparent response to the need to develop better leaders, many universities offer leadership education and more universities begin to do so each year (DeRue et al., 2011). For instance, McDaniel (2002) created a Higher Education Leadership Competencies model (HELC) classified into four categories: (a) context (leader’s ability to navigate a highly politicized environment), (b) content (leader’s ability to understand of strategic planning and how it relates to the mission and goals of the institution), (c) process (leader’s ability to make decisions, have good senses of humour, are unselfish, integrate and core values, and support the leadership of others), and (d) communication (leader’s ability to use verbal, nonverbal, and written skills). This model was improved by Smith and Wolverton (2010), adding analytical, communication, student affairs, behavioural and external relations competencies. In this sense, McCauley-Smith et al. (2015) described Weick’s (1995) sense-making theory to identify how student-leaders undertaking a leadership programme developed within the context of a postgraduate programme based on seven characteristics: (a) identity, (b) retrospect, (c) enactment, (d) social cues, (e) ongoing cues, (f) extracted cues and (g) plausibility.

In light of the need to study the results of intervention programmes, many authors have contributed to leadership research from multiple contexts and frameworks (e.g., Fahimira et al., 2019; Smith & Wolverton, 2010). The literature emphasized that higher education should develop university students’ work-related skills and prepare them for being an effective members of society (Young & Chapman, 2010). The findings highlight the soft skills such as

team working, communication, and entrepreneurial were considered significant for the purpose of training employees and offering them keys to develop the leadership (Yassin, Abu Hassan, Wan Mohd Amin, & Amiruddin, 2008). Finn and Powers (2002) also described that the instrumental skills help people to manage the communication between partners and, in turn the leadership. However, leadership development is a complex process that must be oriented and adapted to the needs of each context. That is, each leader must learn to apply available theory and research findings in a way that is compatible with his or her own personality, skills, experience, values, capabilities, goals, and context (Connaughton et al., 2003). Despite the identified importance of the process for educators, the challenge continues around how to develop the skills and abilities to prepare the leaders of tomorrow society (Astin & Astin, 2000). One of the demands posed by society to the university is to facilitate the processes of socio-labour integration of future graduates (Allen & Van der Velden, 2009). Recently, Cánovas-Alvarez et al. (2020) analyzed the involvement of university students after a leadership programme focused on developing their leadership. The results showed the greater involvement regarding their organization and planning, management of knowledge and information, emotional control, autonomous work, and adaptation to new situations skills.

Pedagogical research suggests that leadership development can be improved taking into account of students' pre-existing beliefs about leadership; however, little is currently known about those beliefs (Caza & Rosch, 2013). There are few, valid and reliable instruments that allow evaluating from this broad and up-to-date approach the generic or transversal training that is taught in the universities (e.g., Clemente & Escribá, 2013). In this line, Martínez and González (2018) designed a questionnaire and analyzed its psychometric characteristics in order to analyze the connection between university education and labour market demands through the study of transversal competencies in university. However, one of the limitations of such study was that the validity analysis was carried out with participants from a single university. Nevertheless, the instrument seems to be a good scale to explore the students' perception regarding their competencies related to their leadership.

In summary, although leadership development is being an issue of interest in Physical Education and Sport, there is a lack of studies that have explored it from the point of view of university students who are trained in competencies related to leadership. The purposes of this study were: (a) to analyze the trans-

cultural validity of the instrument (Alonso-Tapia & Villasana, 2014), and (b) to evaluate the effects of a sport leadership intervention programme on variables related to the leaders' perception regarding three general competencies: instrumental skills, personal skills, and systemic skills in university students. Based on previous studies, we determined two hypotheses. First, the questionnaire would be valid and reliable to know the effects of a sport leadership programme on the perceptions of university students about their competencies. Second, the sports leaders would improve their perceptions after the application of the programme in all the competencies and consequently in their perception of development, mastery and relevance, without differences because of the country.

Method

Participants

Between May and June 2018, participants were recruited to participate in a sport leadership programme as some leaders, mentors and employers. The first author screened all interested participants for eligibility using a standardised script and email message.

The leaders were intentionally selected because they pledged to meet the following inclusion criteria to ensure their voluntary participation: (a) be registered undergraduate students, (b) be in their second year, (c) commit to follow the 24 months of intervention, (d) be empathetic people, with initiative, entrepreneurs and enthusiasts, (e) be trained to develop and promote recreational activities for the university community. They were informed that they would not receive payment but they would be trained in a leadership programme in which they could acquire highly requested competencies and skills on the labour market today, such as group dynamics or teamwork. They did not have prior knowledge of leadership. Of the 132 interested participants, 61 were selected (29 females and 32 males, $M_{age} = 23.20$ years, $SD_{age} = 9.79$, Table 1). They were studying various degree programs from Spain (Universidad Católica San Antonio de Murcia), Malta (University of Malta), Greece (University of Thessaly), Italy (Università degli Studi di Roma "Foro Italico") and Turkey (Pamukkale University). Specifically, the leaders of Spain were studying degrees in Physical Activity and Sports Sciences ($n = 7$) and Dance ($n = 3$). In the case of Malta, the leaders were students of Sport Science ($n = 17$). Participants from the University of Thessaly were students from Medical labs ($n = 3$), Tourism Studies ($n = 2$), Accounting ($n = 1$), Computer

Table 1. Leaders' characteristics at the beginning of the intervention.

Data	Malta	Greece	Turkey	Italy	Spain
<i>n</i>	17	10	17	7	10
Gender, M/F	8/9	6/4	11/6	1/6	6/4
Age, <i>M(SD)</i>	23.37(5.31)	20.1(1.22)	23.93(5.68)	23.6(65.44)	25.9(5.44)

Table 2. Training and evaluation activities in the sport leadership programme.

Workshops	Description	Date
Workshop 1 (5hrs): Training the Sport Leaders	Induction to the programme, aims and objectives, working as a sports volunteer, enablers and inhibitors to university student sport and active recreation, targets, monitoring and evaluation, skills and personal attributes needed to work as a Sport Leader.	February - April 2018
Workshop 2 (5hrs): Careers Action Planning Session with the Sport Leaders	The job market in sport, finding a job, CV, covering letter. Personal reflection on skills, knowledge, abilities, personal factors and wider graduate attributes to develop an action plan to develop personal and professional factors. Discussion about the employer mentor scheme used with all Sport Leaders.	May - September 2018
1st Recreational activity for the university students	Recreational or sport activities designed and directed by the leaders to be carried out for the university community.	September 2018
2nd Recreational activity for the university students	Recreational or sport activities designed and directed by the leaders to be carried out for the university community.	February 2019
Workshop 3 (5hrs): Mid-way reflection and action planning	All employers, careers staff, sport development staff and Sport Leaders at the workshop. Leaders presented their reflections on their personal and professional development since taking on the role of the Sport Leader and what they intend to work on for the remainder of the scheme. Main areas of improvement to their personal, skills and graduate attributes covered.	March 2019
3rd Recreational activity for the university students	Recreational or sport activities designed and directed by the leaders to be carried out for the university community.	April 2019
4th Recreational activity for the university students	Recreational or sport activities designed and directed by the leaders to be carried out for the university community.	May 2019
Workshop 4: (5hrs) Review and final action planning and interview technique	Workshop with employers, careers staff, sports development staff and Sport Leaders. Employers had a 1:1 debrief with the students as part of the workshop, giving the students the opportunity to lead discussion whilst also gaining feedback from the employer about their personal and professional development. Students discussed in groups where they feel they have improved mostly and summaries reported back to the group.	May 2019
5th Recreational activity for the university students	Recreational or sport activities designed and directed by the leaders to be carried out for the university community.	October 2019
Workshop 5: (5hrs) Final Reflection on Work skills, Abilities and Competencies and Future Action	All employers, careers staff, sport development staff and Sport Leaders at the workshop. Students would present their reflections on their personal and professional development since taking on the role of the Sport Leader and what they intend to work on for the remainder of the scheme. Main areas of improvement to their personal, skills and graduate attributes covered.	November 2019
6th & 7th Recreational activities for the university students	Recreational or sport activities designed and directed by the leaders to be carried out for the university community.	December 2019

Engineer ($n = 1$), Digital Systems ($n = 1$), Nursing ($n = 1$) and Physical Education ($n = 1$). In the case of Turkey, the students who were involved in the study were from Sport Management ($n = 11$), Recreation ($n = 4$) and Biomedical Engineering ($n = 2$). The leaders from Italy studied Sport Science ($n = 6$), Sport Management ($n = 1$) and Health and Wellness ($n = 1$). All these degrees lasted four years. All the universities involved were organized in academic years of two semesters.

During the participation in the present investigation they did not participate in any other training activity, other than that of their undergraduate training. All of them finished their studies without failing a subject.

The mentors were selected to serve as a mediator between the leaders and the sports service of the respective universities. Five mentors from each university were selected (total $n = 25$), with a specific profile: (a) these mentors had to commit to supporting

the leaders during the 24-month duration of the intervention, (b) they were proactive people, and (c) they had experience in the design and development of sports and recreational activities.

Five employers per university were selected ($n = 25$). They had to meet the requirements set by the research: (a) to support and train the leaders during the 24 months of intervention, (b) that currently were employers in the physical activity, sports or recreation sector, and (c) were accessible to leaders for the duration of the intervention.

All participants were the same throughout the entire intervention. All leaders were informed of the protocol, they agreed to participate in the study and they signed an informed consent document before the investigation. They were necessarily informed about the study aim. The main author's University Research Ethics Committee approved the study, which was performed in accordance with the Helsinki Declaration.

Design

The design was pre-test-post-test, following a longitudinal approach of 24 months to evaluate the effects of a sport leadership intervention programme on variables related to the leader's perception regarding three general competencies: instrumental skills, personal skills, and systemic skills. The instrumental skills include six specific competencies: (1) organization and planning competence, (2) oral and written communication in the own language, (3) use of information, communication and technology, (4) communication in a foreign language, (5) development of planning and decision making, and (6) management of knowledge and information. The personal skills consist of four specific competencies: (1) team work, (2) social interaction, (3) ethical and social commitment, and (4) emotional control. The systemic skills include five transversal competencies: (1) autonomous work, (2) entrepreneurial attitude, (3) adaptation to new situations, (4) motivation, and (5) research. Each of these competencies was evaluated related to leaders' perception of development, mastery and relevance for their professional development. All these variables were assessed quantitatively (first and last days, respectively, January 2018 and January 2020, Table 2).

Intervention

Sport leadership programme. The European sport leadership programme was implemented during 24 months (from January 2018 to January 2020, Cánovas-Alvarez et al., 2020). Participants were

randomly assigned to five groups per country, made up of 1-4 leaders, a mentor and an employer. This distribution was maintained throughout the intervention programme. The aim was to help enhance both personal and professional development opportunities for students to increase graduate employability; and to improve the participation/recreational sporting opportunities for all students at each university. Three were the procedures of the programme implemented in the five universities. First, the leaders had to develop five work groups in each university in order to promote five non-sport but new recreational activities for their own university students based on student demands (Table 2). Second, they had to attend to five workshops about leadership and the related competencies assessed in the present study (Table 2). Finally, each group of leaders was supported by a mentor and an employer.

Workshops. The leaders participated in five workshops to develop their competencies regarding to skills and personal attributes needed to work as a sport leader, their abilities to find a job in the actual job market, planning and management, and skills to face an interview with employers, respectively. These workshops were enacted by experts in the subject under the supervision of the research team.

Recreational activities. The second kind of formative activities were the organization of recreational sport activities. Each group of participants designed and managed seven different activities in order to both: (a) develop their own competencies related to those analyzed in the present study, and (b) to increase students' engagement in sport at university, focusing on those who are currently inactive or semi-active in sport (non-elite student athletes). For this purpose, the leaders had to develop an action plan with the activities, dates, target people and equipment. Such action plan was later improved under the mentors and employers support.

Mentors. They were lecturers in the Physical Activity and Sports Science degree of each one of participating university. They supported the leaders by means of additional training in order to help them find work and / or run their own company. They were the responsible for communication between the students and the employers and the people who the leaders learnt from in a face to face relationship. Mentors provided a non-threatening and supportive process whereby each individual could learn about their actual levels of ability and competence, and explored ways of improving. Mentors were able to identify behaviours they may wish to look at, analyze and discuss. They identified and then selected target behaviour to focus on. They were

in contact with leaders by means of e-mail, telephone, on-line (Skype, Meet...), and face to face.

Employers. Each group of leaders was also supported by an expert employer. The employers met in person with leaders on face to face for certain aspects of the programme. Where generic aspects were discussed, such as the support the employers would offer and how they communicated with the students, the employers met as a small group with 2-4 students. The students maintained communication with the employer monthly as a minimum to update them on their progress of their action plan. Students visited the employers on-site to gain an induction into their workplace. Employers carried out a mock interview with students on a 1:1 during this visit. On-going support provided by employers was via e-mail, Skype and face to face visits.

Verifying the leadership programme intervention. We used three procedures to verify that the programme was applied in the same way in the five universities. First, an expert researcher attended all the formative activities organised and checked that the activities fulfilled the aims of each activity. Second, the responsible of each university had to send a report of each one of the activities to the main researcher in order to check that they were developed according to the programme description. Third, each sport leader took a register at each session and recorded student demographics such as name, age, course, year of study. Finally, the results of each country was analyzed looking for possible inter-country pre-post test differences. As a result, both the expert and the reports confirmed that the activities fulfilled the aims of each activity according to the programme description. All the recordings showed the increase in the university student involvement, from the first new recreational sport activity to the last. Therefore, there were no statistical pre-post differences between countries ($p > .05$).

Data collection and procedures

An adaptation of the *Cuestionario de Evaluación de Competencias Transversales de Grado* (CECTGRA, Martínez & González, 2018) was administered. This scale has 57 items and three dimensions based on students' perception on their professional development regarding to instrumental skills, personal skills, and systemic skills. Agreement with the items was rated on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), related to the leader's perception of development, mastery and relevance of transversal competencies. The leaders completed the questionnaire on-line using

the Google Forms® tool the same day at the same time with the on-line presence of the main researcher to answer any questions. The students completed the questionnaire individually and anonymously. The main author explained that it was not a test and that the students should complete it in the mentor's absence. The participants responded for 20 min.

The CECTGRA questionnaire was adapted from Spanish to English. The adaptation process and validation of CECTGRA questionnaire were carried out following Carretero-Dios and Pérez (2005) guidelines and according to the quality control techniques proposed by Hambleton and Zenisky (2011). Initially, it was carried out the adaptation and content validation by experts to consider the suitability of the wording to the construct, dimensions and items. Participated 10 experts of each one of the countries in which the study was developed. The comprehension validity allowed to know the correlation coefficient between the items and the dimensions (both for the components of theoretical relevance as well as those without theoretical relevance). The construct validity was analyzed in order to explore the internal structure of the questionnaire through an exploratory factorial analysis of the main components and a confirmatory factorial analysis. Finally, it was analyzed the internal consistency to know the reliability of the instrument. The valid and reliable version of the CECTGRA scale can be seen in Appendix 1.

Data analysis

For the content validity, two different validation rounds were carried out with experts. The experts carried two assessments to consider the construct, the dimensions and the items in English language taking into account previous recommendations. For the comprehension validity, the descriptive statistics and level of discrimination of each item was calculated using the corrected correlation coefficient between the scores of the items and the dimensions (both for the components of theoretical relevance as well as those without). The items selected were those with a high discriminatory power, a standard deviation higher than one, mean answer scores located around the mean point of the scale (skewness and kurtosis in the range: -1, +1) and positive correlation coefficients in favour of the corresponding dimension (at least two decimal points difference). Internal consistency was examined using the Cronbach alpha coefficient, the h index, the Omega McDonald coefficient and the greatest lower bound. In addition, the composite reliability and the average variance extracted of the instrument were calculated. For the construct validity, the dimensionality of the

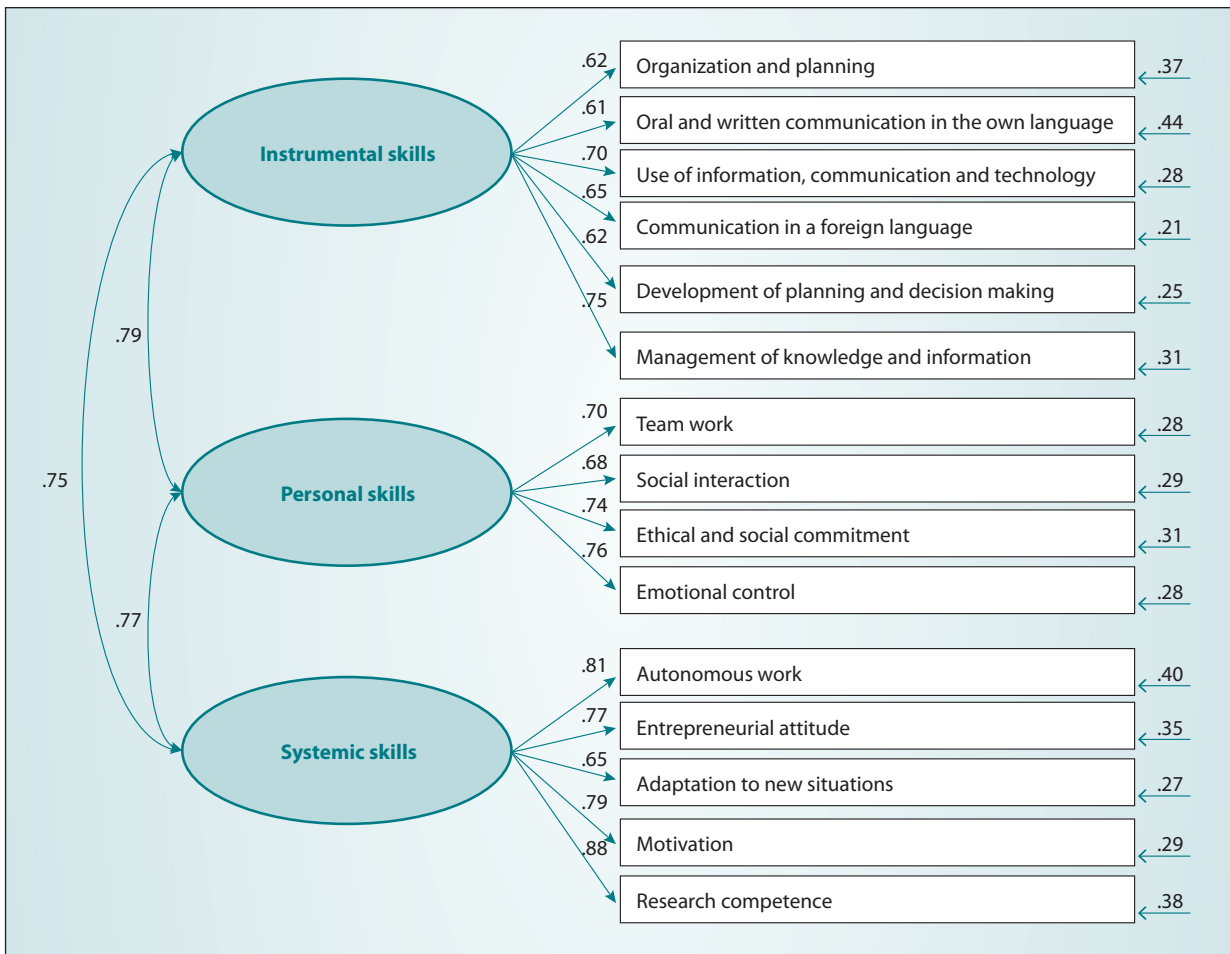


Figure 1. Model of structural equations and factorial saturations.

instrument was analyzed calculating the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's sphericity test. Effect sizes (*ES*) for significant differences of each variable was also determined using Cohen's *d*. The internal structure was studied through an exploratory factorial analysis of the main components and a confirmatory factorial analysis, using the maximum likelihood estimate. The following indicators of the fit of the structural equation model were calculated: the chi-square ratio of the degree of freedom (χ^2/df), the Tucker-Lewis index (TLI), the comparative fit index (CFI), the good fit index (GFI), the Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Square Residual (SRMR, Bentler, 2006; Schermelleh-Engel, Moosbrugger, & Müller, 2003). Finally, as the data followed a normal distribution (Kolmogorov-Smirnov test: $p > .05$), *t*-tests were conducted to explore the efficacy of the intervention on pre-test-post-test differences. The level of statistical significance was established at $p < .05$. Data analysis was performed with the IBM SPSS v22 (IBM, 2013) and AMOS v18 (Arbuckle, 2003).

Results

Validity and reliability

The results of the discrimination indexes of the items and the dimensions using the corrected correlation coefficient were suitable because they were higher than .40 (Table 3). As a result, no items were eliminated from the questionnaire (Carretero-Dios & Pérez, 2005). The original items were grouped in the original sub-dimensions and dimensions, respectively. In other words, the analysis identified three discrete dimensions (instrumental, personal and systemic). The instrumental skills included six specific competencies: (1) organization and planning competence, (2) oral and written communication in the own language, (3) use of information, communication and technology, (4) communication in a foreign language, (5) development of planning and decision making, and (6) management of knowledge and information. The personal skills consisted of fourth specific competencies: (1) team work, (2) social

Table 3. Analysis of the discrimination index of the scale.

Dimension / Sub-dimension / Item	Mean if we eliminate the element	Variance if we eliminate the element	Corrected item-total correlation	Cronbach Alpha if we eliminate the element
Instrumental skills				
Organization and planning				
1. To order and structure ideas adequately	208.95	160.69	.779	.971
2. Having good time management	208.96	169.67	.544	.972
3. Taking the initiative	209.12	163.21	.570	.962
4. Discern what is important and what is a priority	208.91	175.68	.405	.972
Oral and written communication in the own language				
5. Developing organised and coherent speeches or oral presentations	209.04	165.35	.588	.972
6. Expressing complex ideas in writing	209.16	168.95	.510	.972
7. Speaking in front of an audience	208.93	168.63	.517	.972
Use of information, communication and technology				
8. Having basic knowledge of ict	209.14	166.30	.500	.972
9. Understand and use different software for the handling of information (text processors, statistical packages ...)	209.25	161.26	.580	.972
10. Managing ict information (search, selection and integration of information)	209.30	163.53	.516	.972
Communication in a foreign language				
11. Delivering oral speeches in another language	210.14	150.40	.531	.972
12. Reading and understanding text in another language	209.93	149.78	.507	.972
13. Communicating in writing in another language	209.96	155.74	.484	.972
14. Communicating and interacting with people in another language	209.89	143.23	.586	.972
Development of planning and decision making				
15. Being able to define a personal and professional project and set a goal	208.84	156.31	.707	.971
16. Knowing how to make decisions (evaluate different alternatives before making a decision)	208.72	157.84	.706	.972
17. Being able to learn and plan (learn from the past and present your actions for the future)	208.68	146.157	.767	.971
18. Being aware of strengths weaknesses, opportunities and threats of the environment	208.98	150.62	.698	.971
Management of knowledge and information				
19. Being able to search and process different sources of information	208.77	164.75	.556	.972
20. Being able to analyze and synthesize information	208.75	166.11	.610	.972
21. Knowing how to critically present information in writing	208.79	163.52	.675	.972
Personal skills				
Team work				
22. Being able to work collaboratively and cooperatively in an interdisciplinary team	208.65	154.69	.618	.972
23. Willing to compromise and identify with other points of view	208.75	146.83	.818	.971
24. Being able to respect and tolerate the ideas of others	208.65	155.19	.725	.971
25. Being able to solve problems through dialogue and negotiation	208.65	160.55	.587	.972
26. Being able to inspire and motivate groups	208.82	150.43	.652	.972
Social interaction				
27. Being able to establish relationships and contacts (networking)	208.86	146.55	.633	.972
28. Being able to interact actively with experts and non. experts (using active listening)	208.36	160.70	.558	.972
29. Empathising with others	208.79	147.11	.631	.972
30. Being able to express own ideas with confidence	209.04	163.35	.568	.972
Ethical and social commitment				
31. Being a responsible, professional and ethical citizen	208.68	150.07	.728	.971
32. Valuing and respecting diversity and a multi. cultural society	208.44	150.96	.705	.971

Dimension / Sub-dimension / Item	Mean if we eliminate the element	Variance if we eliminate the element	Corrected item-total correlation	Cronbach Alpha if we eliminate the element
33. Being committed to the preservation of the environment	209.05	140.94	.763	.971
34. Demonstrating social responsibility and citizenship	208.60	144.49	.774	.971
Emotional control				
35. Being able to work under pressure	209.11	162.02	.519	.972
36. Being able to manage stress	209.09	153.90	.678	.972
37. Being able to tolerate frustration and adversity	209.18	155.89	.693	.972
Systemic skills				
Autonomous work				
38. Being able to learn autonomously	208.21	177.63	.493	.972
39. Being self. critical	208.28	183.45	.408	.972
40. Knowing how to access available and necessary resources	208.44	189.32	.405	.973
41. Being actively involved in continuous learning and improvement	208.12	188.64	.405	.972
Entrepreneurial attitude				
42. Being able to detect new opportunities	208.88	134.18	.844	.971
43. Being creative and innovative	208.82	147.96	.743	.971
44. Taking the initiative to generate new projects	209.00	145.85	.790	.971
45. Being committed to your own identity and Professional development (personal brand)	208.88	147.82	.754	.971
46. Trusting yourself (self. confidence)	208.84	166.45	.567	.972
Adaptation to new situations				
47. Tolerating change and uncertainty	209.23	154.39	.699	.972
48. Being able to transfer information and apply knowledge to practice	208.82	159.04	.669	.972
49. Being able to work and study in another national or international context (being geographically mobile)	209.28	132.20	.745	.971
Motivation				
50. Having a desire to overcome difficult situations (motivation for individual development and achievement)	208.75	163.22	.629	.972
51. Having a positive attitude towards work	208.60	164.74	.663	.972
52. Being involved at work	208.53	160.71	.680	.972
53. Being committed to achieving quality (by doing things well, with accuracy)	208.84	135.20	.640	.971
Research competence				
54. Being able to detect needs and limit problems	208.84	152.24	.699	.972
55. Being able to design and manage data collection techniques	208.96	160.74	.611	.972
56. Being able to examine and interpret information	208.72	158.70	.676	.972
57. Being able to develop a research report	208.84	160.52	.678	.972

interaction, (3) ethical and social commitment, and (4) emotional control. The systemic skills included five transversal competencies: (1) autonomous work, (2) entrepreneurial attitude, (3) adaptation to new situations, (4) motivation, and (5) research. Each of these competencies was evaluated related to leaders' perception of development, mastery and relevance for their professional development. The results of the principal components exploratory factor analysis corroborated that all dimensions of CECTGRA questionnaire achieved appropriate percentages of variance and loading values (Table 4).

Confirmatory factor analysis indexes reached adequate goodness of fit (Figure 1): $\chi^2/df = 1.89$, TLI = .85, CFI = .86, GFI = .85, RMSEA = .03, SRMR = .03. No items were removed from the original questionnaire, as their factor loadings were higher than .30 (Alonso-Tapia & Villasana, 2014; Bentler, 2006). As in the original questionnaire, the reliability analysis was adequate (Cronbach alpha > .70 in all eight dimensions, h index = .86, McDonald Omega coefficient = .90, glb index = .91, composite reliability indices > .70, and VME > .50 in all eight dimensions). We also confirmed the instrument reliability (FC = .90 and VME = .51, dimensionality,

Table 4. Exploratory factorial analysis of the eight dimensions of the scale.

Instrumental skills	
Organization and planning	
1. To order and structure ideas adequately	.766
2. Having good time management	.501
3. Taking the initiative	.612
4. Discern what is important and what is a priority	.435
Oral and written communication in the own language	
5. Developing organised and coherent speeches or oral presentations	.567
6. Expressing complex ideas in writing	.493
7. Speaking in front of an audience	.539
Use of information, communication and technology	
8. Having basic knowledge of ict	.408
9. Understand and use different software for the handling of information (text processors, statistical packages ...)	.512
10. Managing ict information (search, selection and integration of information)	.462
Communication in a foreign language	
11. Delivering oral speeches in another language	.770
12. Reading and understanding text in another language	.772
13. Communicating in writing in another language	.749
14. Communicating and interacting with people in another language	.692
Development of planning and decision making	
15. Being able to define a personal and professional project and set a goal	.713
16. Knowing how to make decisions (evaluate different alternatives before making a decision)	.767
17. Being able to learn and plan (learn from the past and present your actions for the future)	.799
18. Being aware of strengths weaknesses, opportunities and threats of the environment	.729
Management of knowledge and information	
19. Being able to search and process different sources of information	.556
20. Being able to analyze and synthesize information	.624
21. Knowing how to critically present information in writing	.697
Personal skills	
Team work	
22. Being able to work collaboratively and cooperatively in an interdisciplinary team	.656
23. Willing to compromise and identify with other points of view	.810
24. Being able to respect and tolerate the ideas of others	.697
25. Being able to solve problems through dialogue and negotiation	.557
26. Being able to inspire and motivate groups	.656
Social interaction	
27. Being able to establish relationships and contacts (networking)	.617
28. Being able to interact actively with experts and non. experts (using active listening)	.715
29. Empathising with others	.610
30. Being able to express own ideas with confidence	.644
Ethical and social commitment	
31. Being a responsible, professional and ethical citizen	.758
32. Valuing and respecting diversity and a multi-cultural society	.710
33. Being committed to the preservation of the environment	.769
34. Demonstrating social responsibility and citizenship	.775

Dimension / Sub-dimension / Item	Factor
Emotional control	
35. Being able to work under pressure	.586
36. Being able to manage stress	.628
37. Being able to tolerate frustration and adversity	.685
Systemic skills	
Autonomous work	
38. Being able to learn autonomously	.619
39. Being self. critical	.728
40. Knowing how to access available and necessary resources	.683
41. Being actively involved in continuous learning and improvement	.628
Entrepreneurial attitude	
42. Being able to detect new opportunities	.859
43. Being creative and innovative	.750
44. Taking the initiative to generate new projects	.824
45. Being committed to your own identity and Professional development (personal brand)	.770
46. Trusting yourself (self. confidence)	.649
Adaptation to new situations	
47. Tolerating change and uncertainty	.697
48. Being able to transfer information and apply knowledge to practice	.746
49. Being able to work and study in another national or international context (being geographically mobile)	.793
Motivation	
50. Having a desire to overcome difficult situations (motivation for individual development and achievement)	.644
51. Having a positive attitude towards work	.621
52. Being involved at work	.647
53. Being committed to achieving quality (by doing things well, with accuracy)	.694
Research competence	
54. Being able to detect needs and limit problems	.738
55. Being able to design and manage data collection techniques	.575
56. Being able to examine and interpret information	.667
57. Being able to develop a research report	.659

KMO = .90, and Bartlett's sphericity < .01). Finally, we confirmed that the translated items met the criteria for quality control (Hambleton & Zenisky, 2011).

Participants' perception

There were no statistically significant differences related to the leaders' perception of development, mastery and relevance after the intervention (Table 5). However, they showed higher perceptions in development and mastery after the intervention in all the competencies except for relevance. The effect size was low in all the subscales suggesting the low practical effect of the intervention regarding the leaders' perception of development, mastery and relevance (Table 5).

Despite the previous results, the Spanish leaders reported higher perception of development in instrumental skills in the post-test in comparison to the pre-test ($t = -4.337$; $p = .007$; $d = 1.32$; Table 6). On the other hand, the Greek leaders rated their perception on mastery lower in both, instrumental ($t = 4.666$; $p = .001$; $d = 2.08$) and systemic skills ($t = 2.844$; $p = .019$; $d = 1.27$; Table 6).

Similarly, they showed a low perception of relevance in personal skills ($t = 2.345$; $p = .044$; $d = 1.30$) and systemic skills ($t = 2.737$; $p = .023$; $d = 1.33$; Table 6) in post-test. The effect size supported the significant differences highlighted, meaning the practical improvements in the case of Spanish participants and the practical deterioration for the Greek leaders (Table 6).

Table 5. Descriptive statistics and comparison of means by factors in the pre-test - post-test.

General Competencies	Subscales	Pre test M(SD)	Post test M(SD)	t	p	d
Instrumental skills	Development	3.65(.63)	3.70(.62)	-.534	.596	.07
	Mastery	3.65(.56)	3.69(.56)	-.395	.694	.07
	Relevance	4.37(.64)	4.34(.49)	.304	.762	.05
Personal skills	Development	3.94(.75)	4.09(.55)	-1.391	.170	.22
	Mastery	4.09(.55)	4.23(.46)	-1.318	.193	.27
	Relevance	4.62(.59)	4.62(.42)	-.030	.976	.02
Systemic skills	Development	3.75(.68)	3.85(.56)	-1.020	.312	.16
	Mastery	3.97(.56)	4.03(.49)	-.531	.598	.11
	Relevance	4.68(.83)	4.54(.48)	.999	.322	.10

Table 6. Descriptive statistics of student perception according to the country.

General Competencies	Country	Subscales														
		Development					Mastery					Relevance				
		Pre test M(SD)	Post test M(SD)	t	p	d	Pre test M(SD)	Post test M(SD)	t	p	d	Pre test M(SD)	Post test M(SD)	t	p	d
Instrumental skills	Malta	3.60(.66)	3.64(.68)	-.329	.747	.05	3.50(.63)	3.69(.55)	-.957	.353	.32	4.03(.76)	3.95(.43)	.409	.688	.12
	Greece	3.75(.57)	3.87(.42)	-.656	.528	.23	4.00(.26)	3.21(.47)	4.666	.001*	2.08	4.73(.38)	4.60(.21)	.896	.393	.42
	Turkey	3.95(.53)	3.93(.68)	.117	.909	.03	3.77(.60)	3.09(.51)	-.865	.400	1.22	4.52(.50)	4.44(.60)	.447	.661	.14
	Italy	3.58(.48)	3.21(.29)	2.350	.057	.93	3.50(.44)	3.70(.59)	-1.213	.271	.38	4.50(.29)	4.50(.17)	.055	.958	.06
	Spain	2.84(.40)	3.47(.54)	-4.337	.007*	1.32	3.32(.46)	3.75(.21)	-2.071	.093	1.20	4.13(.87)	4.54(.29)	-1.139	.306	.63
Personal skills	Malta	3.90(.83)	4.22(.58)	-1.432	.171	.44	3.94(.72)	4.22(.97)	-1.176	.257	.32	4.39(.96)	4.64(.30)	-1.041	.313	.35
	Greece	3.88(.79)	3.88(.35)	-.014	.989	.02	4.36(.32)	4.15(.42)	1.452	.180	.56	4.87(.23)	4.49(.34)	2.345	.044*	1.30
	Turkey	4.32(.51)	4.23(.61)	.410	.687	.16	4.18(.51)	4.39(.53)	-1.068	.301	.40	4.72(.26)	4.60(.63)	.664	.516	.24
	Italy	3.81(.64)	4.08(.30)	-.939	.384	.54	4.08(.27)	4.06(.42)	.075	.943	.05	4.63(.33)	4.75(.20)	-.944	.382	.43
	Spain	3.22(.71)	3.70(.66)	-2.150	.084	.70	3.88(.57)	4.14(.36)	-1.310	.247	.54	4.52(.40)	4.68(.27)	-.832	.443	.46
Systemic skills	Malta	3.71(.79)	3.92(.60)	-1.053	.308	.29	3.76(.60)	4.02(.50)	-1.406	.179	.47	4.63(1.47)	4.47(.39)	.382	.708	.14
	Greece	3.75(.55)	3.90(.26)	-.690	.507	.34	4.29(.13)	3.84(.48)	2.844	.019*	1.27	4.94(.12)	4.49(.46)	2.737	.023*	1.33
	Turkey	4.03(.48)	3.88(.62)	.678	.507	.27	4.14(.59)	4.13(.60)	.045	.965	.01	4.72(.31)	4.50(.65)	1.171	.259	.43
	Italy	3.76(.42)	3.86(.48)	-.524	.619	.22	3.82(.52)	3.99(.13)	-.789	.460	.44	4.48(.31)	4.74(.31)	-1.530	.177	.83
	Spain	3.01(.84)	3.47(.73)	-2.028	.098	.58	3.72(.52)	4.09(.47)	-1.812	.130	.74	4.51(.34)	4.70(.37)	-.957	.383	.53

Discussion

The purposes of this study were: (a) to analyze the trans-cultural validity of the instrument and (b) to evaluate the effects of a sport leadership intervention programme on variables related to the leaders' perception regarding three general competencies: instrumental skills, personal skills, and systemic skills in university students. The results ratified the first hypothesis because the questionnaire was valid and reliable to know the effects of a sport leadership programme on the perceptions of university students about their competencies. This means that the scale had external validity according to the fact that it

was used in five different countries (Hambleton & Zenisky, 2011). However, the second hypothesis was not confirmed given the sports leaders did not improve their perceptions of competence regarding development, mastery and relevance after the application of the programme. In addition, there were differences due to country, as only Spanish leaders improved their perception of the development of instrumental skills, while Greek leaders decreased their perception of the mastery of instrumental and systemic skills and the relevance of personal and systemic skills. These results were opposite to those reported by Cánovas-Alvarez et al. (2020), who highlighted a higher involvement and non-

differences between countries. The outcomes related to the second hypothesis suggest that the programme should be improved following the leaders' answers. Consequently, new measures ought to be included to make possible that the leaders increase their positive feelings concerning their leadership competencies in terms of development, mastery and relevance (Martínez & González, 2018).

Regarding the external validity of the scale, the findings could confirm the trans-cultural validity and reliability of the results as the linguistic, cultural, conceptual, and metric values were highly equivalent (Meroño et al., 2018; Villasana & Alonso-Tapia, 2015). This outcome was result of an exhaustive validation procedure following the reference literature (Carretero-Dios & Pérez, 2005; Hambleton & Zenisky, 2011). According to them, first, the instrument was back-translated in order to obtain content validity (Hambleton & Zenisky, 2011). The experts were 10 researchers from the countries in which the study was developed. Two rounds were necessary to determine the first version of the instrument. Five experts did the first translation of the instrument (from Spanish to English) and another five did the second translation (from English to Spanish). We observed a total coincidence when comparing both Spanish versions. The same experts assessed the content validity. Specially, they analyzed the comprehension and adequacy of each item. They were also asked to make suggestions or proposals to improve the instrument. Following Bulger and Housner (2007) proposal, we did not delete any item because they were rated with values above of seven, but we revised the rest of items with comments. Subsequently, using the pre-test data, the normality results allowed accepting that data followed a normal distribution (Byrne, 2010). The items showed corrected element-total correlation values above of .40, what meant that any of them was deleted (Ebel & Frisbie, 1986). The exploratory factorial analysis revealed that the items were grouped in three factors. The items values were high, what according to Hair, Anderson, Tatham, and Black (1998) means that they identified very well the factors and they were of practical relevance. Similar results were obtained by Martínez and González (2018). The confirmatory analysis results were adequate (Hu & Bentler, 1995), as also was reported in the original version of this scale (Martínez & González, 2018). The Cronbach alpha coefficient, as well as the rest of coefficients analyzed, reported high values in the three factors. This pointed out the high internal consistency of the instrument and its reliability (Carretero-Dios & Pérez, 2005; Hair et al., 1998).

Despite the good properties of the scale used, overall, the programme did not allow to improve the participants' perceptions about their competencies of leadership. As in Dugan, Turman and Torrez (2015), sports and recreational activities developed on university campuses show great power to shape the achievements and experiences of university students. The incorporation of this type of programmes would create an increase in effectiveness and mastery in future professional practice and, in addition, as in our intervention, the importance of creating intentional and beneficial positional roles for the programme, such as those of leaders, mentors and employers, is highlighted. These mentorships between leaders and mentors or employers are an opportunity to enhance leadership development and these soft skills (Dugan et al., 2015). This type of research situates sports and recreational activities on university campuses, not only as sports practice, but also as an opportunity to develop meaningful and deep learning. In relation, recent studies have shown that student employment, on and off campus, helped the students to improve their competencies (Peck & Callahan, 2019; Perozzi, 2019). The differences between studies were that students were working in a non-volunteer activity, as in the present work. In addition, the developed programmes were not similar because Peck and Callahan (2019) and Perozzi (2019), focused on other competencies as the ability to influence others, make decisions and solve problems, plan complex projects and verbally communicate. Notwithstanding the differences between studies, the leaders of the present study reported lower punctuations in the post-test in comparison to the pre-test. This could mean that the feelings of leadership competencies decrease because they found difficulties when they deal with tasks related to planning and managing recreational activities. This is a normal sense when people face new situation about what they have vicarious experiences (Bandura, 1997).

According to the findings of the present work and in comparison to the mentioned studies it is suggested the following. First, it seems necessary to improve the programme. In this regard, preparing future leaders require long interventions because it demands the change of behaviours that are not easy to modify in a short period of time (Caza & Rosch, 2013). Second, the programme should be mainly focused in skills related to make decisions and solve problems when planning complex projects, secondly in communication (verbal and throughout social networks, advertisements, in other languages), and finally in the ability to influence others (Peck &

Callahan, 2019; Perozzi, 2019). However, it is crucial that students are aware of their competencies when they are learning new relevant skills (Vygotsky, 1978). In this sense, this could have influenced their feelings, because the analysis by country revealed that they rated their perception with lower values in the post-test in comparison to the pre-test. Even though, this behaviour was more stable regarding their perception of relevance. This relative absence of comprehension and feelings of relevance could reinforce the importance that leaders training require that leaders are aware of their knowledge and how to implement it operatively using their new skills. Third, both, mentors and employers played a key role for the leaders. They helped students to connect the university and the working contexts by means of experiences, ideas, identifying areas of improvements, desired behaviours, planning activities, and making decisions in complex situations. However, their roles and interventions must be exactly determined and extended in time (Komives, Lucas, & McMahan, 2013; Markowitz, 2017). Furthermore, mentors as well as employers need to determine schedules in which they can impact the leaders because teaching-learning procedures ask for the initial influence of the teacher-trainer who will transfer gradually the responsibility of the process to the learner (Vygotsky, 1978).

Nevertheless, the Spanish leaders improved in their perception of development in instrumental skills, the Greek leaders worsen in their perception of mastery in instrumental and systemic skills and relevance in personal and systemic skills while no differences were found in the other countries. These differences in favour of the Spanish participants could be because of the relevance of the context and other pedagogical variables, as for instance, student characteristics, familiar context, school context, previous knowledge and skills. In the Spanish case, it could be crucial the experts' mentors' and leaders' background working based on the competence framework. From the experts' mentors' point of view, they accumulated much experience in this kind of formation what it

is essential when facing the competence learning (European Commission, 2014). From the leaders' point of view, they knew their roles in the development of new methodologies to learn meaningfully (Casey, 2014). However, in other teaching-learning contexts it is difficult to reach the same conditions given the different educative systems and the reactions to new educative systems (Kotthoff & Pereyra, 2009). In this sense, Griffin, Peck, and LaCount (2017) evidenced the relevance of the students' primarily career-specific knowledge on their development as leaders. Students from different countries normally have been learning under different models of teaching-learning, what influences in their motivation, interest, learning, and academic performance (Villasana & Alonso-Tapia, 2015).

Conclusion

In general, the present study shows an intervention programme to develop leadership as one of the competencies that university students should possess for their transition to the labour market (European Commission, 2016). However, overall, the programme did not allow improving the students' feelings regarding their instrumental, personal and systemic skills, in terms of development, mastery, and relevance. From the finding of this study it is recommended to improve the programme based on the leadership competencies to develop, the teaching-learning methodologies to follow, the activities to implement, and the roles to determine, thinking in impacting the students' behaviours. The students' own perception about the relevance of their leadership competencies is a cornerstone to know which of their skills should be strengthen as a measure to access to the working context with greater possibility of employability (Dugan, Turman, & Torrez, 2014). Further studies are necessary in order to continue exploring a good model or programme to improve university students' leadership.

Appendix 1. Adaptation of the CECTGRA questionnaire.

1. To order and structure ideas adequately	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
2. Having good time management	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
3. Taking the initiative	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
4. Discern what is important and what is a priority	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
5. Developing organised and coherent speeches or oral presentations	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
6. Expressing complex ideas in writing	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
7. Speaking in front of an audience	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
8. Having basic knowledge of ict	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
9. Understand and use different software for the handling of information (text processors, statistical packages ...)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
10. Managing ict information (search, selection and integration of information)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
11. Delivering oral speeches in another language	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
12. Reading and understanding text in another language	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
13. Communicating in writing in another language	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
14. Communicating and interacting with people in another language	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
15. Being able to define a personal and professional project and set a goal	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
16. Knowing how to make decisions (evaluate different alternatives before making a decision)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
17. Being able to learn and plan (learn from the past and present your actions for the future)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
18. Being aware of strengths weaknesses, opportunities and threats of the environment	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
19. Being able to search and process different sources of information	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
20. Being able to analyze and synthesize information	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
21. Knowing how to critically present information in writing	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
22. Being able to work collaboratively and cooperatively in an interdisciplinary team	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
23. Willing to compromise and identify with other points of view	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
24. Being able to respect and tolerate the ideas of others	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
25. Being able to solve problems through dialogue and negotiation	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
26. Being able to inspire and motivate groups	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
27. Being able to establish relationships and contacts (networking)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
28. Being able to interact actively with experts and non. experts (using active listening)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
29. Empathising with others	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
30. Being able to express own ideas with confidence	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
31. Being a responsible, professional and ethical citizen	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
32. Valuing and respecting diversity and a multi. cultural society	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
33. Being committed to the preservation of the environment	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
34. Demonstrating social responsibility and citizenship	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
35. Being able to work under pressure	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
36. Being able to manage stress	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
37. Being able to tolerate frustration and adversity	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
38. Being able to learn autonomously	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
39. Being self. critical	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
40. Knowing how to access available and necessary resources	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

Competencies	Development	Mastery	Relevance
41. Being actively involved in continuous learning and improvement	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
42. Being able to detect new opportunities	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
43. Being creative and innovative	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
44. Taking the initiative to generate new projects	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
45. Being committed to your own identity and Professional development (personal brand)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
46. Trusting yourself (self-confidence)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
47. Tolerating change and uncertainty	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
48. Being able to transfer information and apply knowledge to practice	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
49. Being able to work and study in another national or international context (being geographically mobile)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
50. Having a desire to overcome difficult situations (motivation for individual development and achievement)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
51. Having a positive attitude towards work	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
52. Being involved at work	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
53. Being committed to achieving quality (by doing things well, with accuracy)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
54. Being able to detect needs and limit problems	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
55. Being able to design and manage data collection techniques	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
56. Being able to examine and interpret information	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
57. Being able to develop a research report	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

Instrumental skills

- Organization and planning: items 1, 2, 3, 4.
- Oral and written communication in the own language: items 5, 6, 7.
- Use of information, communication and technology: items 8, 9, 10.
- Communication in a foreign language: items 11, 12, 13, 14.
- Development of planning and decision making: 15, 16, 17, 18.
- Management of knowledge and information: items 19, 20, 21.

Personal skills

- Team work: items 22, 23, 24, 25, 26.
- Social interaction: items 27, 28, 29, 30.
- Ethical and social commitment: item: 31, 32, 33, 34.
- Emotional control: items 35, 36, 37.

Systemic skills

- Autonomous work: items 38, 39, 40, 41.
- Entrepreneurial attitude: 42, 43, 44, 45, 46.
- Adaptation to new situations: items 47, 48, 49.
- Motivation: items 50, 51, 52, 53.
- Research competence: items 54, 55, 56, 57.

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