

## Student-athletes' perceptions of four dual career competencies

Koen De Brandt\*, Paul Wylleman\*\*\*, Miquel Torregrossa\*\*\*, Simon Defruyt\*\* and Nicky Van Rossem\*

PERCEPCIÓN DE CUATRO COMPETENCIAS PARA LA CARRERA DUAL EN ESTUDIANTES-DEPORTISTAS

KEYWORDS: Competencies, dual career competency questionnaire, student-athletes, gender, elite sport, Erasmus+

ABSTRACT: In order to assess athletes' competencies required for a successful combination of elite sport and education, the perceptions of 107 Flemish elite student-athletes of the importance, possession, and need to develop four dual career competencies (DC management, DCM; Career Planning, CPL; Mental Toughness, MTO; Social Intelligence and Adaptability, SIA) were investigated using the Dual Career Competency Questionnaire for Athletes (DCCQ-A; De Brandt et al., 2017). Participants perceived all four competencies as important for a successful DC, reported average to good possession of DC competencies, and perceived a general need to develop their DC competencies. Female student-athletes rated the importance of three of four DC competencies (DCM, CPL, SIA) as well as their perceived possession of the competency DCM higher than their male counterparts, and evaluated a stronger need to develop the competencies MTO and SIA. The study confirmed the relevance (high importance) of the four DC competencies in a sample of Flemish student-athletes, and recommends that gender differences be considered in the development of student-athletes' DC competencies.

Athletes engaging in a dual career (DC) 'education and sport' pathway are concurrently faced with challenges at academic, athletic, psychological, psychosocial and financial level (Wylleman, Rosier, De Brandt and De Knop, 2016). While research identified a range of attitudes, knowledge, skills and experiences (i.e., competencies; Hunter, 2004) athletes require to succeed in their DC (e.g., time management, career planning, self-regulation, communication skills; Brown et al., 2015; Debois, Ledon and Wylleman, 2015; Lally and Kerr, 2005; MacNamara and Collins, 2010; Miró, Pérez-Rivasès, Ramis and Torregrossa, 2017; Stambulova, Engström, Franck, Linnér and Lindahl, 2015), there was however no valid and reliable measure of the importance of these competencies or of their latent factors. In response to this lack in methodology, De Brandt et al. (2017) introduced the *Dual Career Competency Questionnaire for Athletes* (DCCQ-A). Using the DCCQ-A, athletes assess

through 29 items their perceptions of the importance, possession and need to develop the competencies *DC management, Career Planning, Mental Toughness, and Social Intelligence and Adaptability* shown to be related to a successful DC (GEES Consortium, 2017).

Considering the availability of this relatively new questionnaire and recognising the need for more measurement data on the DC competencies of specific target audiences, the objective of the current paper was to use the DCCQ-A to explore Flemish student-athletes' perceptions of importance, possession and need to develop competencies for a successful DC. In light of the literature putting forward that female athletes may have the better chances to develop their DC competencies (Brewer, Van Raalte and Linder, 1993; López de Subijana, Barriopedro and Sanz, 2015) and consequently progress more successfully in their DC (De Brandt, Wylleman and De Knop, 2015; Tekavc,

28 Correspondence: Koen De Brandt. Faculty of Physical Education and Physiotherapy. Vrije Universiteit Brussel. Pleinlaan 2, 1050 Brussel, Belgium. E-mail: koen.de.brandt@vub.be

\*Faculty of Physical Education and Physiotherapy. Vrije Universiteit Brussel

\*\*Faculty of Psychology and Educational Sciences. Vrije Universiteit Brussel.

\*\*\*Departament de Psicologia Bàsica, Evolutiva i de l'Educació. Universitat Autònoma de Barcelona.

Acknowledgements: This work was supported by the Erasmus+ Programme of the European Union under Grant 2014-3140/025-001. The authors would like to express their gratitude to all Flemish student-athletes who participated in the study. We also thank all members of the "Gold in Education and Elite Sport" (GEES) consortium for their cooperation during and beyond the project's lifetime. In particular, we thank Ms. Kristel Taelman and Sport Vlaanderen for the productive collaboration in Flanders.

Reception date: 20-05-2017. Acceptance date: 17-06-2017

Wylleman and Cecić Erpič, 2015), this study also examined the possible gender differences in student-athletes' perceptions of DC competencies.

## Method

### Participants

Participants included 107 18-to-26-year-old Flemish elite student-athletes ( $M_{\text{age}} = 20.5$ ,  $SD = 2.0$ ; 51% female) competing at least at national level (65% individual - 35% team sports; 92% Olympic - 8% non-Olympic disciplines), recognised as elite by *Sport Vlaanderen* (the sport administration of the Flemish government), and enrolled in an institute of higher education (61% university - 39% university college).

### Instruments

The study used the DCCQ-A29 (De Brandt et al., 2017). Developed as part of the Erasmus+ Sport project *Gold in Education and Elite Sport* (GEES; a consortium of 40 internationally renowned DC researchers and expert practitioners from 17 educational and elite sport institutions), the DCCQ-A is a research- (e.g., MacNamara and Collins, 2010) and expert-based (with the input of the GEES consortium) online questionnaire enabling the assessment of athletes' DC competencies. Participants used the Dutch version of the DCCQ-A to evaluate 29 potentially important items (i.e., DC attitudes, skills, knowledge and experiences) of DC competency on a 5-point Likert-type scale by answering two main questions: (a) How *important* are each of these items for you in order to successfully combine sport and study? (*1-unimportant to 5-very important*), and (b) To what extent do you *possess* each of these items? (*1-very poor to 5-very good*).

Recently, (2017) identified four latent factors in the 29-item DCCQ-A using exploratory structural equation modelling: *DC management*, *Career Planning*, *Mental Toughness*, and *Social Intelligence and Adaptability*. The competency *DC management* (10 items) comprised athletes' abilities to organize, balance, and to stay committed to their highly demanding (daily) combination of elite sport and education (e.g., self-discipline, efficient use of time, dedication to succeed, planning and prioritizing); *Career Planning* (5 items) comprised athletes' (dual) career planning skills and the flexibility to cope with deviations in their DC and post-DC pathway (e.g., having back up plans, flexibility, career exploration); *Mental Toughness* (7 items) comprised athletes' competency to control and cope effectively with adversity, developmental pressures, and emotions of their DC (e.g., self-

belief, stress management, emotion regulation, resilience, focus); *Social Intelligence and Adaptability* (7 items) comprised athletes' interpersonal and support seeking abilities required to establish and preserve a facilitative DC environment and to adapt to a (new) social environment while maintaining an elite athletes' lifestyle (e.g., asking advice, maintaining relationships, making social contacts, understanding the importance of rest and recuperation). The four-factor DCCQ-A29 has sound psychometric properties for a sample of 3,350 European pupil- and student-athletes (De Brandt et al., 2017).

### Procedure

The study was approved by the ethics commission of the Vrije Universiteit Brussel. Via *Sport Vlaanderen*, 220 elite student-athletes received an email with an access link to the DCCQ-A and an informed consent, explaining the purpose of the study and highlighting the ethical principles. Completing the DCCQ-A took on average 20 minutes.

### Data analysis

Average scores and standard deviations for student-athletes' perceptions of importance, possession, and need to develop DC competencies were computed using descriptive statistics. Athletes' perceived need to develop DC competencies for successful coping was inferred from the magnitude of the difference between athletes' perceived importance (reflective of athletes' desired level of possession for effective coping) and perceived current possession of DC competencies. Paired *t*-tests were performed and Hedges  $g_{av}$  was selected to estimate the magnitude of the effect (Lakens, 2013). A larger  $g_{av}$  effect size reflected an athletes' stronger perceived need to develop a DC competency. Next, MANOVA and ANOVA were performed to examine gender differences. Effect sizes of Eta Squared ( $\eta^2$ ) were reported.

## Results

Of 220 student-athletes who received an access link to the DCCQ-A, 116 answered the survey (response rate = 53%), and 107 completed it (completion rate = 92%). Internal consistency of the four competencies of the DCCQ-A were acceptable (DCM = .84, CPL = .72, MTO = .78, SIA = .74), exceeding the recommended criterion of  $\alpha = .70$  (Nunnally and Bernstein, 1994).

Table 1 shows that student-athletes not only perceived all four competencies of the DCCQ-A as important for a successful DC ( $M_{\text{range}} = 3.93 - 4.29$ ), but that they also reported average to

good possession of these DC competencies ( $M_{range} = 3.36 - 3.68$ ). Significant differences and large effect sizes ( $g_{av} \geq .80$ ) were found for the discrepancy between perceived importance and possession, indicating athletes' general need to develop all DC competencies. While female student-athletes reported the strongest need to develop the competency MTO;  $t(54) = 11.47$ ,  $p < .001$ ,  $g_{av} = 2.08$ , male athletes perceived the strongest need to develop the competency DCM;  $t(51) = 11.69$ ,  $p < .001$ ,  $g_{av} = 1.91$ .

Multivariate effects were found on the combined dependent factors of the DCCQ-A (DCM, CPL, MTO, SIA) for gender, respectively  $F(4,102) = 3.36$ ,  $p = .013$  for importance;  $F(4,102) = 5.24$ ,  $p = .001$  for possession;  $F(4,102) = 3.89$ ,  $p = .006$  for need to develop. Analyses at univariate level showed that female athletes awarded a significantly higher importance to all DC competencies than male athletes except for the competency MTO;  $F(1,106) = 6.74$ ,  $p = .011$  for DCM;  $F(1,106) = 11.18$ ,  $p = .001$  for CPL;  $F(1,106) = 2.52$ ,  $p = .115$  for MTO;  $F(1,106) = 5.61$ ,  $p = .020$  for SIA. Moreover, female athletes reported higher perceived possession of the competency DCM;  $F(1,106) = 7.70$ ,  $p = .007$ , and a stronger need to develop the competency MTO;  $F(1,106) = 6.36$ ,  $p = .013$ . Medium effect sizes ( $.06 > \eta^2 > .14$ ) were observed for all statistically significant differences between male and female athletes, except for athletes' perceived importance of the competency SIA ( $\eta^2 = .05$ ; small effect).

## Discussion

The current study examined student-athletes' perceptions of importance, possession and need to develop DC competencies to successfully combine sport and study. First, the study supported the relevance (high perceived importance) of the four predefined DC competencies (De Brandt et al., 2017) for a sample of Flemish student-athletes. Moreover, our study contributed to an increased understanding of student-athletes' perceived need to develop all four competencies for engaging successfully in a DC. This finding directly relates to recommendations made in previous research (Debois et al., 2015; López de Subijana, Barriopedro and Conde, 2015; MacNamara and Collins, 2010; Stambulova et al., 2015) that DC support services should focus not only on providing facilitating measures but also (and perhaps even more) on assisting athletes in developing the competencies required to cope with the

challenges and barriers of their DC (Wylleman and Rosier, 2016).

Second, our study revealed gender differences in athletes' perceptions of DC competencies. Female athletes were found to award a higher importance to three of four competencies required for a successful combination of sport and education. This may reflect that female athletes prioritize their academic endeavours more often (i.e., greater affinity with their student role, lower athletic identity, and stronger will and efforts to attain an academic degree) as demonstrated in previous research (Brewer et al., 1993; López de Subijana et al., 2015; Miró et al., 2017; Tekavc et al., 2015). Male athletes' lower perceived possession of *DC Management* also supports the findings of Tekavc et al. (2015), showing that male athletes were less mature in organizing their DC (i.e., worse planning and time management) than their female counterparts. Ultimately, the aforementioned findings may explain why previous research reported female student-athletes performing better academically (De Brandt, Wylleman and De Knop, 2015). In addition, female athletes in our study perceived a stronger need to develop *Mental Toughness* than male athletes. This may be attributed to the higher levels of stress female athletes perceive during their DC, their lower self-confidence (Heller, 2008; Tekavc et al., 2015), their lower peak performances under stress, and the fact that they employ less problem-focused coping behaviour to manage pressure and adversity in their DC (Mouratidis and Michou, 2011) in comparison with male athletes.

The current study recommends an individual approach to assisting athletes in their DC competency development. In order to maximize athletes' chances to successfully prepare for, go through and finalize their DC, practitioners should not only assist athletes in developing the competency relevant to organizing their DC in an effective manner (*DC Management*) but also give the required attention to developing other DC competencies (*Career Planning, Mental Toughness, Social Intelligence and Adaptability*). Future research should consider to complement the individual approach to DC competencies with a developmental (e.g., secondary vs. higher education), a holistic (i.e., different domains of development), a situational (e.g., in relation to different challenging DC scenarios) and contextual perspective in order to further enable DC practitioners to develop tailor made and context specific interventions in working with student-athletes.

	Total (N=107)			Female (n=55)			Male (n=52)			$\eta^2$
	M	SD	$g_{av}$	M	SD	$g_{av}$	M	SD	$g_{av}$	
<b>Importance</b>										
DCM *	4.29	0.35	–	4.37	0.35	–	4.20	0.34	–	.06
CPL **	3.93	0.54	–	4.09	0.46	–	3.76	0.56	–	.10
MTO	4.24	0.39	–	4.30	0.39	–	4.18	0.39	–	.02
SIA *	4.18	0.44	–	4.28	0.46	–	4.08	0.39	–	.05
<b>Possession</b>										
DCM **	3.53	0.52	–	3.66	0.50	–	3.39	0.51	–	.07
CPL	3.37	0.61	–	3.41	0.55	–	3.32	0.66	–	.01
MTO	3.36	0.60	–	3.26	0.61	–	3.47	0.57	–	.03
SIA	3.68	0.47	–	3.69	0.49	–	3.68	0.45	–	.00
<b>Need to develop</b>										
DCM	0.76	0.50	1.74	0.71	0.51	1.67	0.81	0.50	1.91	.01
CPL	0.56	0.73	0.97	0.68	0.71	1.35	0.44	0.73	0.72	.03
MTO *	0.88	0.69	1.77	1.04	0.67	2.08	0.71	0.67	1.48	.06
SIA	0.50	0.51	0.97	0.58	0.50	1.24	0.40	0.50	0.95	.03

Note: Response range for all importance and possession variables was 1-5. DCM = Dual Career Management; CPL = Career Planning; MTO = Mental Toughness; SIA = Social Intelligence and Adaptability.

\* \*\* significant difference between gender, respectively  $p < .05$  and  $p < .01$ ; with Eta Squared  $\eta^2$  effect size.

All differences between perceived importance and possession were significant at  $p < .001$  with large Hedges  $g_{av}$  effect sizes.

Table 1. Student-athletes' perceptions of importance, possession, and need to develop four DC competencies.

#### PERCEPCIÓN DE CUATRO COMPETENCIAS PARA LA CARRERA DUAL EN ESTUDIANTES-DEPORTISTAS

PALABRAS CLAVE: Competencias, cuestionario de competencias de carrera dual, estudiantes-deportistas, género, deporte de elite, Erasmus+

RESUMEN: Con el objetivo de evaluar las competencias necesarias para combinar con éxito el deporte de élite y la educación, se han investigado las percepciones de importancia, posesión y necesidad de desarrollo de competencias para la Carrera Dual (CD; Gestión de CD, DCM; Planificación de Carrera, CPL; Fortaleza Mental MTO; Inteligencia social y Adaptabilidad, SIA respectivamente por sus siglas en inglés) en 107 estudiantes-deportistas Flamencos mediante el *Cuestionario de Competencias para la Carrera Dual de Deportistas* (DCCQ-A, por sus siglas en inglés; De Brandt et al., 2017). Los participantes perciben las cuatro dimensiones de competencias como importantes para una CD exitosa, reportan una posesión entre media y buena de competencias y, aun así perciben una necesidad general de mejorar sus competencias para la CD. Las estudiantes-deportistas femeninas puntúan la importancia de tres de las cuatro competencias (DCM, CPL, SIA) así como la posesión percibida de DCM más alta que los deportistas masculinos, y evalúan una necesidad más fuerte de desarrollar las competencias MTO y SIA. El estudio ha confirmado la relevancia (alta importancia) de las cuatro competencias de CD en una muestra de estudiantes-deportistas Flamencos y sugiere que debe tenerse en cuenta las diferencias de género, en el desarrollo de las competencias para seguir una CD estudios-deporte.

## References

- Brewer, B., Van Raalte, J. and Linder, D. (1993). Athletic identity: Hercules' muscle or Achilles heel? *International Journal of Sport Psychology*, 24, 237–254.
- Brown, D. J., Fletcher, D., Henry, I., Borrie, A., Emmett, J., Buzza, A. and Wombwell, S. (2015). A British university case study of the transitional experiences of student-athletes. *Psychology of Sport and Exercise*, 21, 78–90. <http://doi.org/10.1016/j.psychsport.2015.04.002>
- De Brandt, K., Wylleman, P. and De Knop, P. (2015). Het belang en de organisatie van de combinatie hoger onderwijs en topsport [The importance and organisation of the combination of higher education and elite sport]. In M. Theeboom, R. Haudenhuyse and J. Vertonghen (Eds.), *Sport en Sociale innovatie: Inspirerende praktijken en inzichten* (pp. 227–237). Brussels: VUB PRESS.
- De Brandt, K., Wylleman, P., Torregrossa, M., Lavalée, D., Schipper-van Veldhoven, N., Defruyt, S. and De Knop, P. (2017). Measuring Athletes' Dual Career Competencies: Development, Exploration and Factorial Validation of the Dual Career Competency Questionnaire for Athletes (DCCQ-A). Manuscript submitted for publication.
- Debois, N., Ledon, A. and Wylleman, P. (2015). A lifespan perspective on the dual career of elite male athletes. *Psychology of Sport and Exercise*, 21, 15–26. <http://doi.org/10.1016/j.psychsport.2014.07.011>
- GEES Consortium. (2017). *GEES Handbook for Dual Career Support Providers*. Brussels, Belgium. Retrieved from <http://www.gees.eu/index.php/handbook>
- Heller, T. L. (2008). *Psychological predictors of career maturity in college student-athletes* (doctoral dissertation). Florida State University, Florida, FL, United States.
- Hunter, W. (2004). *Knowledge, Skills, Attitudes, & Experiences Necessary to Become Globally Competent* (doctoral dissertation). Lehigh University, Bethlehem, PA, United States.
- Lakens, D. (2013). Calculating and reporting effect sizes to facilitate cumulative science: A practical primer for t-tests and ANOVAs. *Frontiers in Psychology*, 4, 1–12. <http://doi.org/10.3389/fpsyg.2013.00863>
- Lally, P. and Kerr, G. (2005). The Career Planning, Athletic Identity & Student Role Identity of Intercollegiate Student Athletes. *Research Quarterly for Exercise and Sport*, 76(3), 275–285. <http://doi.org/10.1080/02701367.2005.10599299>
- López de Subijana, C., Barriopedro, M. and Conde, E. (2015). Supporting dual career in Spain: Elite athletes' barriers to study. *Psychology of Sport and Exercise*, 21. <http://doi.org/10.1016/j.psychsport.2015.04.012>
- López de Subijana, C., Barriopedro, M. I. and Sanz, I. (2015). Dual career motivation and athletic identity on elite athletes. *Revista de Psicología Del Deporte*, 24(3), 55–57.
- MacNamara, Á. and Collins, D. (2010). The role of psychological characteristics in managing the transition to university. *Psychology of Sport and Exercise*, 11(5), 353–362. <http://doi.org/10.1016/j.psychsport.2010.04.003>
- Miró, S., Pérez-Rivasès, A., Ramis, Y. and Torregrossa, M. (2017). ¿Compaginar o elegir?: La transición del bachillerato a la universidad de deportistas de alto rendimiento [Balancing or choosing? The transition from high school to university of high performance athletes]. Manuscript submitted for publication.
- Mouratidis, A. and Michou, A. (2011). Perfectionism, self-determined motivation & coping among adolescent athletes. *Psychology of Sport and Exercise*, 12(4), 355–367. <http://doi.org/10.1016/j.psychsport.2011.03.006>
- Nunnally, J. C. and Bernstein, I. H. (1994). *Psychometric theory* (3<sup>rd</sup> ed.). New York: McGraw-Hill.
- Stambulova, N., Engström, C., Franck, A., Linnér, L. and Lindahl, K. (2015). Searching for an optimal balance: Dual career experiences of Swedish adolescent athletes. *Psychology of Sport and Exercise*, 21, 4–14. <http://doi.org/10.1016/j.psychsport.2014.08.009>
- Tekavc, J., Wylleman, P. and Ceci Erpič, S. (2015). Perceptions of dual career development among elite level swimmers and basketball players. *Psychology of Sport and Exercise*, 21, 27–41. <http://doi.org/10.1016/j.psychsport.2015.03.002>
- Wylleman, P. and Rosier, N. (2016). Holistic Perspective on the Development of Elite Athletes. In M. Raab, P. Wylleman, R. Seiler, A.-M. Elbe and A. Hatzigeorgiadis (Eds.), *Sport and Exercise Psychology Research: From Theory to Practice* (pp. 269–288). London: Elsevier. <http://doi.org/10.1017/CBO9781107415324.004>

Wylleman, P., Rosier, N., De Brandt, K. and De Knop, P. (2016). Coaching Athletes through Career Transitions. In R. Thelwell, C. Harwood and I. Greenlees (Eds.), *The psychology of sports coaching: research and practice* (p. 290). Abingdon: Routledge.