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Career Education Questionnaire: psychometric properties of the Portuguese version

Questionário de Educação para a Carreira: propriedades psicométricas da versão Portuguesa

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Abstract

This study aimed to evaluate the psychometric properties of the Career Education Questionnaire, through the analysis of reliability, dimensionality and possible correlations with the SENNA 1.0 socioemotional measure. The participants were 282 Portuguese high school students of both genders, with a mean age of 15.93 years, from public schools in northern Portugal. The analysis of the internal consistency of the dimensions showed satisfactory Cronbach's alpha coefficients. The intercorrelations showed a positive and significant pattern for the subscales of the Career Education Questionnaire. The discriminant validity between the Career Education Questionnaire and the SENNA showed a positive and significant relationship of weak magnitude. The confirmatory factor analysis indicated that a model with three factors showed satisfactory goodness of fit to the data and better than the alternative models. The Portuguese version of this instrument presents metric qualities, making it a useful measure for research in this field.

Keywords: High school students; Professional development; Vocational guidance.

Resumo

Este estudo objetivou avaliar as propriedades psicométricas do Questionário de Educação para a Carreira, por meio da análise da fiabilidade, dimensionalidade e possíveis relações com a medida socioemocional SENNA 1.0. Participaram

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deste estudo 282 estudantes portugueses do ensino secundário, de ambos os sexos, com idade média de 15,93 anos, provenientes de escolas públicas do norte de Portugal. A análise da consistência interna das dimensões apresentou coeficientes alfa de cronbach satisfatórios. As intercorrelações evidenciaram um padrão positivo e significativo para as subescalas do Questionário de Educação para a Carreira. A validade discriminante entre o Questionário de Educação para a Carreira e o SENNA apresentou uma relação positiva e significativa de fraca magnitude. A análise fatorial confirmatória indicou que um modelo com três fatores, apresentou valores de bondade de ajustamento aos dados satisfatórios e melhores do que os modelos alternativos. A versão portuguesa desse instrumento apresenta qualidades métricas, tornando-o uma medida útil à investigação nesse domínio.

Palavras-chave: *Estudantes de ensino médio; Desenvolvimento profissional; Orientação vocacional.*

Career Education is a career intervention modality that emerged in the 1960s in the United States, due to the need for reforms in the education system that would bring education and work closer together (Herr, 2001). This intervention modality aims to implement strategies in a systematic way at all levels of education, with the goal of promoting students' career development through activities that favor greater knowledge of self, of educational and work opportunities, of decision-making processes, and of transitions (Munhoz et al., 2016). As such, Career Education aims to promote self-career management attitudes and planning and decision-making skills. The acquisition of these attitudes and skills reflects the development of career maturity. This concept, coined by Super (1990) to define the ability of individuals to fulfill the career tasks with which they are confronted, depending on their biological and social development, is fundamental for decision making and for the development of adaptability within the career framework (Balbinotti & Tétreau, 2006).

Effectively, the 21st century has brought new challenges to employers and workers. In a world marked by technological advances and changes in social relations, the professional world is characterized by unpredictability and instability (Guan et al., 2019). Transitions from educational to occupational contexts are increasingly complex (Hooley et al., 2015). Although the current generation is more skilled and educated than previous ones, young people continue to demonstrate difficulties in competing for job openings in the labor market (Mann & Huddleston, 2015). To cope with the rapid transformations in the world of work, workers are expected to be flexible and to seek continuous learning throughout the life cycle (Zacher et al., 2015). In this sense, work institutions have been looking for people who are adaptable to change (Hirschi et al., 2015), with self-knowledge and career self-confidence, engagement skills, and commitment to institutions, under low assurance of stability (Negru-Subtirica et al., 2015).

In this context, Career Education emerges as a key mechanism to prepare young people for informed decision making and successful transitions in the face of the instability, complexity, and volatility of the occupational world (Moote & Archer, 2018). More recent studies have shown that participation in Career Education programs has resulted in benefits related to school development, decreased dropout, engagement with learning (Plasman, 2018), and expanded career expectations and aspirations (Welde et al., 2016). These behaviors are related to increased career maturity, one of the goals of Career Education programs.

Recently, evaluations of these programs have also, pointed out results related to the development of socioemotional skills, such as increased responsibility, self-confidence, sense of leadership, social justice, and civic awareness, in addition to increased social skills, such as greater collaboration and teamwork, and also greater interest in other cultures (Clerkin, 2018). In this study socioemotional competencies are defined as "individual characteristics that originate in the reciprocal interaction between predispositions and environmental factors; are manifested in consistent patterns of thoughts, feelings, and behaviors; continue to develop through informal learning experiences, and have important influence on socioeconomic outcomes throughout the individual's life" (De Fruyt et al., 2015, p. 279). In the publications of these authors, these competencies have been organized according to the big five model (Santos & Primi, 2014). This conception

was adopted in this study due to the understanding of social and emotional competencies as a basis for the development of career maturity and the possible articulation with the goals of Careers Education programs, such as, to atribute meaning to learning and work in order to construct life projects, and understanding the individual as somenone with needs established with the others, which requires such competencies, in a productive mode.

The literature shows a significant association between career maturity and socioemotional characteristics, although in a scarce explored way. Extroversion, agreeableness, openness to new experiences, and conscientiousness show a positive correlation with career maturity (r = 0.19 to 0.21), and a negative correlation with neuroticism (r = -0.23) (Atli, 2017). Therefore, this study pairs socioemotional competencies with career competencies, aiming to measure the psychometric qualities of the Career Education Questionnaire, an instrument that can be used as a pre- and post-test measure, and as a roadmap, based on its scales and subscales, for career interventions.

The benefits highlighted by the literature regarding the implementation of Career Education programs have led several countries to invest in the development of this type of intervention, which can be offered by the school, by external entities, or even be carried out by a partnership between school and external agencies (Organization for Economic Co-Operation and Development, 2004). Career Education programs can be carried out based on different theoretical perspectives. Cinamon et al. (2019) point out that interventions based on the Career Education model have the potential to reduce social and economic gaps, as verified in Kashefpakdel and Percy's (2017) longitudinal study, in which British youth who attended more career talks when they were between 14 and 16 years old, showed a salary bonus ten years later. Successfully implemented Career Education practices are found in countries such as Germany, Australia, Denmark, United States, Finland, Norway (Yuen et al., 2019) and Canada (Gaylor & Nicol, 2016). In Portugal, however, this intervention modality is still little widespread and applied (Carvalho, 2015). It is worth noting, that Career Education models reflect the local conditions of where they are carried out and that, therefore, the transfer from one culture to another, requires careful adaptation to the context (Andrews & Hooley, 2019). Need highlighted by Nassar and Al-Quimlass (2017) regarding the key components for implementing comprehensive programs for youth workforce development. These authors identified, among the good practices, the Positive Youth Development with a focus on the development of social skills and the integration of career guidance throughout the student's academic period, highlighting the importance of self-exploration, careers exploration, and career planning and management. In the Brazilian context, the concept of Career Education is still not widespread, but the proposal of the implementation of na holistic guidance carried out throughout the school cycle, which integrates social and emotional skills development, with classic components of guidance such as self-exploration, careers exploration and career planning and management has been implemented since 2015 with the studies by Leal (2019) and Leal et al. (2020). The implementation of Career Education programs in educational systems constitutes an effective contribution of the field of Career Psychology to Education with the purpose of giving meaning to studies and work, whether paid or unpaid. This value is recognized by educators (Munhoz, 2010). However, the implementation of this type of intervention presents challenges and limitations, especially regarding the infusion proposal (Rodrígues-Moreno, 2008), in which the assumptions of Career Education must be disseminated in the curriculum throughout the educational cycle, which for Königstedt (2008), represents a difficulty in terms of reorganization of the school system and involvement of all its actors. Moreover, it is known that the development of good practices depends on the quality of the diagnosis of intervention needs (Álvarez-González et al., 1998) and the use of accompanying measures, which is still a lack in the area of careers, especially when considering the importance of the meanings given to learning and work. It is known that the development of good practices depends on the quality of the diagnosis of the intervention needs (Álvarez-González et al., 1998). The Career Education

Questionnaire (CEQ), focus of this study, is a Canadian-made instrument designed for the measurement of Career Education needs and career maturity in secondary school students (Dupont & Gingras, 1990).

The CEQ is considered an accessible instrument that is easy to use and understandable by different professionals such as psychologists, pedagogues, and educators in general (Aguillera, 2013). The 96 items of the instrument are organized into two scales. The first, unidimensional scale is called Meaning and Importance of Work. The second, designed Career Preparation, includes six subscales: Steps Taken, Factors Considered, Type of Preferred Occupation, Job Search and Maintenance, and the subscales related to career exploration tasks, People and Sources Consulted, and Activities Performed.

The psychometric properties of the original version were verified with two independent samples of secondary school students in the Quebec region of Canada. The first in 1991 with 1022 high school participants (Dupont & Gingras, 1991a), internal consistency coefficients ranged from 0.66 on the People and Sources Consulted subscale to 0.91 on the Meaning and Importance of Work scale. In the second 1995 version with 336 students, the internal consistency coefficients ranged from 0.73 on the People and Sources Consulted subscale to 0.89 on the Job Search and Maintenance subscale (Coallier et al., 1995). The Spanish version (González, 1997) included 2997 students also from high school, as in the original study, with internal consistency coefficients ranging from 0.71 on the Persons and Sources Consulted subscale to 0.90 on the Preferred Occupation subscale.

The Brazilian version has three studies that verified its psychometric properties, Aguillera (2013), Balbinotti and Tétreau (2006), and Fracalozzi (2014). The first study, from 2006, was developed with 890 high school students in the state of Rio Grande do Sul, Brazil, in which the internal consistency coefficients ranged from 0.73 in the People and Sources Consulted subscale to 0.89 in Job Search and Maintenance. The second study, from 2013, was conducted in the State of São Paulo, Brazil, with 470 adolescents and youth, aged 14 to 20 years old, mostly from elementary and secondary schools in the interior of the state (Aguillera, 2013). The lowest internal consistency coefficient verified was in the Steps Taken subscale (0.81) and the highest in the Preferred Occupation subscale (0.90). In the third study, by Fracalozzi (2014), in another medium-sized city in the interior of the state of São Paulo, was developed with 220 third-year high school students, with the coefficients ranging from 0.77 in the People and Sources Consulted subscale to 0.89 in Job Search and Maintenance.

The results of the interscale correlation studies showed a median correlation of .33 in Gingras' (1990) study, 0.35 in Gonzalez' (1992), 0.32 in Balbinotti and Tétreau's (2006) Brazilian version, and 0.40 in Aguillera's (2013) version. Regarding the exploratory factor analyses, the study of Gingras (1990) and Gonzalez (1992) showed that the two-factor solution, formed by the unidimensional scale Meaning and Importance of Work and the subscales that make up the scale Preparation for Career, was satisfactory, while the seven-factor solution, despite not being totally stable, was adopted in the Canadian (Gingras, 1991) and the Spanish (Gonzalez, 1992) versions. The aforementioned authors verified that some subscales such as Factors Considered and Preferred Occupation, as well as People and Sources Consulted and Activities Performed, came together pointing to a five-factor solution. The study of Balbinotti and Tétreau (2006) by replicating the factor analyses performed from previous studies (Coallier et al., 1995; Dupont & Gingras, 1991a, 1991b; Gonzalez, 1992), found a five-factor solution as the best solution, however, it adopted the seven-factor solution. The research of Aguillera (2013), also adopted the seven-factor solution, although the results of the factor analysis pointed to a three-factor model, formed by the three main scales, Meaning and Importance of Work, Career Preparation – Planning and Career Preparation – Exploration, as the most satisfactory solution. Among the justifications adopted by those authors regarding the adoption of the seven-factor model are the decision to maintain the original model, given the advantages of interpreting the individual results, theoretical advantages and the fact that the correlations point to relatively independent dimensions.

Considering that Career Education is still a little explored intervention modality in the Portuguese context and that the participation in these programs seems to be associated with the development of career maturity, as well as with socioemotional development, this study analyzed the psychometric properties of the Portuguese version of the CEQ and compared the results with the Canadian (Coallier, 1992; Coallier et al., 1995; Dupont & Gingras, 1991a, 1991b; Gingras, 1990), Brazilian (Aguillera, 2013; Balbinotti & Tétreau, 2006), and Spanish (González, 1992, 1997) versions. We also sought to verify possible relationships between career maturity, obtained through the Career Education Questionnaire (CEQ), and socioemotional skills measured through the Social and Emotional or Non-cognitive Nationwide Assessment (SENNA 1.0) or, according to the new denomination, the Instrument for the Assessment of Socioemotional Skills (SENNA 2.0) (Santos & Primi, 2014). And, to verify if there are differences between the students of the schools involved in this study regarding the variables included in this study.

Method

Participants

A total of 282 Portuguese high school students participated in this study: 159 girls and 123 boys, aged 15 to 18 years (M = 15.93; SD = 0.929), from three public schools in the northern region of Portugal. Of these schools, one is dedicated exclusively to vocational education (95 students) and the other two schools to regular education (187 students). All schools involved in this study belong to Educational Territory of Priority Intervention (ETPI) school clusters, so it can be inferred that the socioeconomic level is similar.

This study was developed with a convenience sample. The vocational school has a capacity for about 400 students and is a school of reference regarding mobility and internationalization projects in the European context, having the European Quality Certificate of Vocational Education and Training. The second school, with a capacity for about 1,500 students, offers scientific humanistic courses and is also a reference in education. The last school where data were collected has a capacity for 871 students, offers regular education, participates in a platform that promotes collaboration between schools in Europe, with free professional development opportunities for teachers.

Instruments

Career Education Questionnaire (CEQ) – The version used in this study was the adaptation of Aguillera's (2013) version with young apprentices (N = 470), conducted with a sample from the interior of the State of São Paulo, Brazil. The instrument showed evidence of satisfactory validity with Cronbach's Alpha for the total scale equal to 0.95. The instrument has 96 items, distributed in two scales that comprise seven dimensions. The first scale, called Meaning and Importance of Work (items 1 to 22, e.g., Working is an important goal in life) is unidimensional. The second, designed Career Preparation, includes six subscales: (a) Steps Taken, (items: 23 through 35, e.g., Informing myself about the tasks to be done in the job (or profession) that interests me); (b) Aspects Considered (items: 36 through 52, e.g., My likes and interests); (c) Preferred Occupation (items: 53 through 61, e.g., The possibilities for career advancement); and (d) Job Search (items: 62 through 72, e.g: How to prepare for a job interview), which make up the Career Planning tasks; in turn, the Career Exploration tasks are divided into two subscales, (e) People and Sources Consulted (items: 73 to 83, e.g., From my parents) and (f) Activities Performed (items: 84 to 96, e.g., From conversations with workers holding different jobs). The data is measured using a four-point Likert-type scale, ranging from "completely disagree" to "completely agree"; from "never" to "often"; from "know very little" to "know a lot", and from "very little" to "very much".

Social and Emotional or Non-cognitive Nationwide Assessment (SENNA 1.0). – In version 2.0 the name was changed to Instrument for the Assessment of Socioemotional Skills. This is a Brazilian tool authored by Santos and Primi (2014), developed to measure socioemotional skills on a large scale in the school context, with the purpose of supporting the development of public policies in the area of education. The SENNA 1.0, used in this study, has a set of anchor vignettes and 92 items organized into six dimensions (domains of socioemotional competencies), five of which are based on the Big Five model and used in this study, namely: (a) Conscientiousness, (17 items, e.g., I am a student(s) who tries hard); (b) Openness to New Experiences (17 items, e.g., I have new and original ideas); (c) Agreeableness (15 items, e.g., I am kind and nice to almost everyone); (d) Emotional Stability (14 items, e.g: I am calm and control my stress well); (e) Extroversion (14 items, e.g. I am full of energy) and the Locus of Control (15 items, e.g. I believe I can change what will happen to me tomorrow by what I do today). The instrument is evaluated by means of a five-point Likert-type scale and in this study it was evaluated in the sense of its positive poles, according to the aforementioned denominations in the dimensions.

Procedures

Young people were invited to participate in the study voluntarily and informed about the purpose of the study. The confidentiality of the answers was assured, and they were treated collectively and statistically. The answers were treated confidentially, without identifying the respondents, and were evaluated by specialists in the field of psychology. All ethical precautions recommended for this type of study (e.g., informed consent, privacy and confidentiality) were guaranteed (Regulation nº 258/2011, Code of Ethics of the Portuguese Psychologists' Association). Data collection took place in a single moment. The instruments were administered collectively in the classroom by two psychologists, being emphasized that the answers should be given individually. On average, it took about 30 minutes to complete the questionnaires.

Data Analyses

Descriptive statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) computer program and Analysis of Moment Structures (AMOS) to conduct Confirmatory Factor Analysis (CFA). A single-factor ANOVA was conducted to analyze the effect of school type on the dimensions assessed. Before conducting this test, the assumption of normality was checked using Kolmogorov-Smirnov and Shapiro-Wilk tests. Evidence of non-normality was obtained, so equivalent non-parametric tests (Kruskal-Wallis) were performed and compared. Since the results of nonparametric (Kruskal-Wallis) and parametric (one-factor ANOVA) tests go in the same direction, results of parametric tests are reported in this study (Martins, 2011). The quality of model fit was evaluated based on the following statistics: ratio of χ^2 over degrees of freedom (χ^2/gl), comparative fit index (CFI), Root Mean-Square Error of Approximation (RMSEA), and Tucker Lewis Index (TLI). As model 1 the original structure of the instrument was used, with Meaning and Importance of Work, Planning, and Exploration as latent variables. Model 2 presents the variables Steps Taken, Factors or Aspects Considered, Preferred Occupation, Job Search, People and Sources Consulted, and Activities Performed as latent variables. In model 3, the six previous variables are presented as latent variables and the Sense of Importance of Work was also added as a latent variable.

Results

As for checking for differences between students across schools, Unifactorial ANOVA results indicate that there are differences between schools in the variables: preferred occupation F (2, 278) = 2.58, p = 0.05,

activities performed F (2, 278) = 4.88, $p = 0.003$, career readiness F (2, 262) = 2.48, $p = 0.06$, conscientiousness F (2, 243) = 5.23, $p = .006$, extroversion F (2, 243) = 7.06, $p = 0.001$, agreeableness F (2, 243) = 12.30, $p < 0.001$, and openness F (2, 243) = 7.97, $p < 0.001$. Gabriel's Post-Hoc tests indicate that vocational school students show higher values in preferred occupation, activities performed, and career readiness than students from the other schools. On the other hand, vocational school students show lower values in conscientiousness, extroversion, agreeableness, and openness than students from the other schools.

Next, Table 1 shows the result of the descriptive analysis and the indices of the internal consistency of the CEQ. It can be observed that the highest means were found in the Meaning and Importance of Work dimension. The internal consistency indices ranged from 0.85 in the Steps Taken dimension to 0.91 in the Job Search and Activities Performed for Choice dimensions.

Table 1
Descriptive analysis and internal consistency of the CEQ

Descriptive statist	CEQ Subscales						
	Meaning and Importance of Work	Steps Taken	Aspects Considered	Preferred Occupation	Job Search	People and Sources Consulted	Activities Performed
M	76.87	41.93	50.58	26.83	27.62	30.37	32.50
SD	6.75	5.45	7.19	5.24	6.70	5.63	8.14
α	0.87	0.85	0.87	0.90	0.91	0.81	0.91

Note: α: Cronbach's alpha; CEQ: Career Education Questionnaire.

Table 2 presents the results of the analysis of intercorrelations between the CEQ and SENNA scales. The analysis of intercorrelations showed a generally positive and significant relationship between the different subscales of the CEQ, except between the activities performed and the meaning and importance of work, $r = 0.093$, $p = 0.12$. Specifically, correlation analyses indicate moderate correlations between the aspects considered and steps taken $r = 0.508$, $p < 0.001$, and between preferred occupation $r = 0.611$, $p < 0.001$, and job search $r = 0.560$, $p < 0.001$, with the aspects considered; between activities performed with people/sources consulted $r = 0.624$, $p < 0.001$, and activities performed $r = 0.451$, $p < 0.001$ with job search; and between job search $r = 0.464$, $p < 0.001$ with preferred occupation; and weak between people and sources consulted $r = 0.276$, $p < 0.001$, and activities performed $r = 0.307$, $p < 0.001$ with preferred occupation; people/sources consulted $r = 0.427$, $p < 0.001$.

Analysis of intercorrelations further evidenced a positive and significant weak to moderate magnitude relationship between the different SENNA subscales. Specifically, agreeableness $r = 0.490$, $p < 0.001$ correlated moderately with conscientiousness; and openness with agreeableness $r = 0.508$, $p < 0.001$. Weak magnitude correlations between emotional stability $r = 0.310$, $p < 0.001$, and openness $r = 0.425$, $p < 0.001$ with conscientiousness; and between emotional stability $r = 0.257$, $p < .001$, agreeableness $r = 0.432$, $p < 0.001$, and openness $r = 0.438$, $p < 0.001$ with extroversion.

Regarding intercorrelations between the CEQ and the SENNA, overall a positive and significant relationship of weak magnitude is evident. Correlation analyses indicate correlations between conscientiousness $r = 0.364$, $p < 0.001$, and agreeableness $r = 0.269$, $p < 0.001$ with the sense of importance of work. Between conscientiousness $r = 0.402$, $p < 0.001$, kindness $r = 0.314$, $p < 0.001$, and openness $r = 0.307$, $p < 0.001$ with the steps taken; and also between openness $r = 0.250$, $p < 0.001$ and the aspects considered.

Table 3 shows the fit indicators of the tested models. The results of a confirmatory factor analysis indicate that the measurement model with the factors – Meaning and Importance of Work, Career Planning and Career Exploration, showed satisfactory and better goodness of fit values to the data than those of two

alternative models with the two scales and the seven dimensions, respectively. According to Hu and Bentler (1999) a CFI > 0.95 and an RMSEA < 0.06 reflect values that reflect a good fit of the model. In this case, model 1, Meaning and Importance of Work, Career Planning, and Career Exploration, has the highest CFI and the highest RMSEA. The chi-square of this model is also the lowest when compared to the two alternative models.

Table 2
Analysis of intercorrelations between the CEQ and SENNA scales

Instruments		Intercorrelations											
	Subscales	1	2	3	4	5	6	7	8	9	10	11	12
CEQ	1.												
	2.	0.392***											
	3.	0.268***	0.508***										
	4.	0.294***	0.424***	0.611***									
	5.	0.162**	0.325***	0.560***	0.464***								
	6.	0.124*	0.232***	0.378***	0.276***	0.427***							
	7.	0.093	0.169**	0.362***	0.307***	0.451***	0.624***						
SENNA	8.	0.364***	0.402***	0.215**	0.241***	0.075	0.166**	-0.036					
	9.	0.172**	0.204***	0.243***	0.196***	0.188**	0.230***	0.149*	0.184**				
	10.	0.111†	0.223***	0.115**	0.182*	0.104	0.026	0.076	0.310***	0.257***			
	11.	0.269***	0.314***	0.088	0.112†	0.079	0.185**	-0.004	0.490***	0.432***	0.221***		
	12.	0.171**	0.307***	0.250***	0.194**	0.192**	0.178**	-0.014	0.425***	0.438***	0.167**	0.508***	

Note: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; †$p < 0.10$. CEQ: 1. Meaning and Importance of Work; 2. Steps Taken; 3. Aspects Considered; 4. Preferred Occupation; 5. Job Search; 6. People and Sources Consulted; 7. Activities Performed. SENNA: 8. Conscientiousness; 9. Extroversion; 10. Emotional Stability; 11. Agreeableness; 12. Openness to New Experiences. CEQ: Career Education Questionnaire.

Table 3
Adjustment indicators of the tested models (n = 289)

Model	χ^2(df)	CFI	RMSEA	TLI
Model 1	665.69 (347)	0.854	0.057	0.840
Model 2	5649.88 (2612)	0.705	0.064	0.695
Model 3	8348.78 (4443)	0.688	0.056	0.817

Note: χ^2: Chi-square; CFI: Comparative Fit Index; RMESA: Root Mean Square Error Aproximation; TLI: Tucker Lewis Index.

Discussion

This study aimed to analyze the dimensionality and reliability of the Career Education Questionnaire in a sample of Portuguese secondary school students and, to verify possible relationships between career maturity, obtained through the assessment of Career Education needs measured by the CEQ, and socioemotional competencies, measured through the SENNA. The comparison of the internal consistency of the Portuguese version of the Career Education Questionnaire with the Canadian, Spanish, and Brazilian versions show better indices for the Portuguese version, presenting more similarity with the Brazilian version by Aguillera (2013). As with the Canadian, Spanish, and Brazilian versions, the lowest internal consistency index in the Portuguese version was found in the People and Sources Consulted scale. These results reinforce the accuracy of the instrument found in other studies (Aguillera, 2013; Coallier et al., 1995; Dupont & Gingras, 1991a; González, 1997). From the analysis described it can be seen that, as Balbinotti and Tétreau (2006) mentioned, the adolescents in the different countries seem to elect only a few Sources of Exploration, which may be a restrictive factor for Career Exploration, the main task of this period of human development (Super, 1990). These results indicate the importance of career interventions to open the range of exploration options for

this population. It is worth noting however, that just like in Aguillera's (2013) study, the value found in the Portuguese sample in the dimension People and Sources Consulted (0.81) seems to show a certain balance in the exploration of the sources presented in the CEQ. These results suggest in a way that Portuguese adolescents, participants of this study, show more exploratory behaviors than the participants of the Canadian, Spanish and Brazilian studies.

With regard to the correlations between the subscales of the CEQ, it was found that the correlation coefficients ranged from 0.09 (Activities Performed and Meaning and Importance of Work) to 0.62 (People and Sources Consulted and Activities Performed). According to Dancey and Reidy (2006) these correlations can be considered from weak (0.10 to 0.30) to moderate (0.40 to 0.60). Moderate correlations predominated among the subscales that make up the Planning and Exploration dimensions. The lack of correlations between the scales, Meaning and Importance of Work and Activities Performed, as well as, the weak correlations between Meaning and Importance of Work with the other CEQ scales suggests the independence of the Meaning and Importance of Work scale. In addition, it showed a higher median correlation (0.36) than those found in Balbinotti and Tétreau, (2006) (0.32) and Gingras (1990) studies (0.33) and close to that found in Gonzalez (1992) study (0.35), but lower than that found in Aguillera's (2013) study (0.40). These results are comparable and indicate moderate independence between the scales, which reinforces the multidimensionality of the Career Education construct.

As expected, the analysis of intercorrelations between the subdimensions of the CEQ and SENNA, for the most part, proved significant and positive, in line with the results of Atli (2017). However, the absence of significant correlation between some subdimensions of the SENNA and the CEQ is not common. Awareness was not associated with the subdimension Job Search and Maintenance. It was expected that the organizational and planning characteristic of the Awareness dimension would favor a search for more knowledge needed to find, obtain and retain employment. This result may be related to the fact that the students in the sample investigated are still in the beginning of secondary school, where issues related to finding and keeping a job are not yet pressing.

It was also found that Emotional Stability, characterized by calm and tolerant behavior, was not associated with career exploration behaviors, such as getting help from different people, sources, and activities performed, as well as, with job search and job retention behaviors. Which may suggest that Emotional Stability may be more related to more passive behaviors, which may impact the proactive behaviors needed for career exploration. Finally, agreeableness characterized by docility and passivity did not correlate with Aspects Considered, Job Search, and Activities Performed, dimensions that require more exploratory and proactive behaviors.

Regarding factor analysis, model 1, which comprises the original structure of the instrument, was the one that presented the best adjustment. This model with seven factors, formed by the unidimensional scale Meaning and Importance of Work and the six subscales that make up the Career Readiness scale was also considered in previous studies in Canada, Spain, and Brazil. It is noteworthy that the adoption of this structure allows for cross-cultural comparison of the results in these different cultures.

The studies on the psychometric properties of the CEQ show that it presents itself as a valid instrument for measuring Career Education needs, in terms of knowledge, skills, attitudes and values, in the Portuguese context. In addition, this instrument is a measure of career maturity, useful to help young people reflect on the meaning they attach to work and how they prepare for career choice and achievement, and can also be used as an initial diagnostic measure (Aguillera, 2013) and as a roadmap for the structuring of career interventions aimed at meeting individual or group demands in the Portuguese context with adolescent secondary school population. The CEQ assesses the subdimensions Exploration and Career Planning, which as highlighted by Nassar and Al-Quimlass (2017) are key components in effective career and workforce development programs

with young populations, which reinforces the usefulness of the instrument in these intervention contexts. Furthermore, because it focuses on core elements in career education interventions, the use of the CEQ is independent of the theoretical approach used in conducting the program.

The CEQ can also be used to evaluate the outcomes of intervention actions, as proposed in the literature, this instrument can provide a baseline for outcome evaluation, and can be used before the intervention, and at specific points in the intervention (Nassar & Al-Quimlass, 2017), evaluating outcomes and processes. The evaluation of the data can provide information for the monitoring of the policies carried out, assisting in making decisions about the continuity of the programs or the need to carry out new initiatives. It should be noted, however, that the instrument has limitations in terms of its extension and validation. Regarding the extension, the 96 items may be a limiting factor when it comes to its use in samples with difficulties in reading and interpreting texts; a possible solution could be the use of separate scales or the construction of a reduced version. As for validation, we suggest a temporal validity study and the establishment of norms for the Portuguese population. Therefore, we suggest the expansion of studies on the psychometric properties of the CEQ with different Portuguese populations, as well as its use in the diagnosis and assessment of results in interventional practices in educational settings.

Contributors

M. S. LEAL responsible for the data collection, data discussion, full text writing. C. MARQUES responsible for the data collection and analysis. M. C. TAVEIRA responsible for the guidance in the analysis, discussion of results, review and approval of the final version of the article. L. L. MELO-SILVA responsible for the research design, discussion of results, review and approval of the final version of the article.

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