**Vocational Profiles among Portuguese VET Students: relationship with the Internship Quality**

Currently, workplace learning has become an important feature of the training program of high school vocational courses because learning in a purely academic context does not adequately prepare students unless it is complemented by the type of learning that only real-world contexts provide (Griffiths & Guile, 2004). In both developed and developing countries, there is a growing effort to make the school curriculum more responsive to the contemporary job market demands (Larson, Wilson & Mortimer*,* 2002; Leney & Green, 2005), with workplace learning experiences constituting the main strategy linking school with occupational reality (Griffiths, 2003; Griffiths & Guile, 2004).

Although the theoretical framework of vocational psychology posits that real-world learning experiences significantly influence adolescents’ career development (e.g., Lent, Brown & Hackett, 2002; Savickas, 2005; Super, Savickas & Super, 1996; Vondracek, Lerner & Schulenberg, 1986), research findings regarding the impact of this type of experience have not been consistent.

Empirical studies have found that work experience quality significantly influence students’ overall vocational and career development (e.g., Brooks et al., 1995; Blustein, 1997; Carless & Prodan, 2003; Loughlin & Barling, 1998; Johnson & Mortimer, 2002; Stern, Stone, Hopkins & McMillion, 1990;Stone & Mortimer, 1998; Watts, 1996), although it is not clear whether certain work experience qualities produce a greater effect. As a result, Creed and Patton (2003) and Skorikov and Vondracek (1997) have suggested that research should explore the relationship between career development indicators, such as career exploration, career decision-making and career commitment, and the diverse qualities of the work experiences, such as learning opportunities, social support and autonomy, among others (for a review: Vianen, Pater & Preenen, 2008).

Among the qualities that the literature considers as essential to promote the career exploration and the progress in career decision-making and commitment processes, we can highlight the importance of the relational dimensions found in real work contexts, such as the social support provided by colleagues, teachers and supervisors (e.g., Blau, 1985; Blustein & Noumair, 1996; Cheung & Arnold, 2010; Creed, Fallon & Hood., 2009; Kenny & Bledsoe, 2005; Flum & Blustein, 2000) along with the task diversity, autonomy, and learning opportunities (e.g., Aryee & Tan, 1992; Vianen et al., 2008).

In this light, the impact of internship experience on career development may depend on the quantity and quality of the exploratory activity preceding contact with the work environment, the level of commitment to prior career choices, and the degree of correspondence between the internship and students’ personal and career goals. Because adolescents may deal with work experiences in very different ways (e.g., Blustein, Juntunen & Worthington, 2000; Schaap, Baartman & Bruijn, 2011), the impact of these experiences on their development is not uniform (Shanahan, Mortimer & Kruger, 2002). As a result, Barling and Kelloway (1999) have argued that researchers should recognize that real-world experiences are different for each individual because young people are not a homogenous population. Moreover, vocational psychology theories (e.g., Lent et al., 2002; Vondracek et al., 1986) and human motivation models (e.g., Ryan & Deci, 2000) acknowledge the importance of a differential approach to investigating and managing career issues due to the interaction between different work environments and individuals’ interests, goals, skills, and values (e.g., Mortimer & Zimmer-Gembeck, 2007).

Niles, Erford, Hunt and Watts (1997), Kelly and Pulver (2003), and Taveira (1997) have used cluster analysis to identify different styles of career exploration and decision-making. Taveira (1997) found that it was possible to discriminate among groups of students based on their career attitudes and behaviors and identified four career profiles based on identity, indecision, and exploration. Moreover, researchers investigating career decision-making and commitment (e.g., Akos, Konold & Niles, 2004; Baiocco, Laghi & D’Alessio, 2009; Gati & Saka, 2001; Germeijs & Verschueren, 2006; Newman, Gray & Fuqua, 1999; Silva, 1997; Vondracek, Hostetler, Schulenberg & Shimizu, 1990) have found that individuals experience career indecision for different reasons and adopt different approaches toward decision making, such as an intuitive, dependent, or rational style. Akos et al. (2004) administered the CFI (Career Factors Inventory) to a sample of eighth-grade students and identified seven different career profiles. On the other hand, Germeijs and Verschueren’s (2006) longitudinal study also illustrated this diversity. In short, the literature supports a differential and interactive approach to the processes of vocational exploration, decision-making and commitment that acknowledges the importance of individual differences in vocational behavior.

**Present Study**

In Portugal, within the VET system internships are mandatory and, in most cases, occur in the final year of the course. In the secondary education level (10º, 11º 12º grade), VET courses provide a broad range of training. Their main purpose is to give access to the labor market, but they also allow students to pursue their studies at a higher level. In this context, by work experience we usually mean the use of the workplace in a way which supports learners in connecting different types of knowledge, skills and experiences (e.g., Griffiths & Guile, 2004), or, in other words, work experience can be defined as a workplace learning activity in which students experience work tasks in work environments, but without taking on the full identity of a worker (Watts, 1996), under the supervision of a experienced professional. Research investigating vocational students in high school has revealed the increasing heterogeneity of this group regarding previous school experience, socioeconomic status, motivations underlying course choices, and students’ visions of their educational and vocational futures (e.g., Alves, Almeida, Fontoura & Alves, 2001).

To test the hypothesis that diverse characteristics of high school vocational students would exhibit different relationships with the internship experience, a longitudinal study identified four vocational profiles based on vocational variables at T1 (prior to the internship) and then correlated these vocational profiles or clusters with the perceived qualities of the internship, which were expected to moderate the changes in the vocational domain from T1 to T2 (e.g., Aryee & Tan, 1992; Blau, 1985; Borges, 2007; Cheung & Arnold, 2009; Hirschi, 2009; Kenny & Bledsoe, 2005; Rogers, Creed & Glendon, 2008). In sum, we aim to investigate whether internship qualities exerted the same influence, or not, on students with different career profiles.

**Method**

**Participants**

Participants were 346 twelfth grade students (176 boys, 50.9%; 170 girls, 49.1%), from 16 high vocational education schools in southern Portugal. Ages ranged between 16 to 26 years old, with a mean of 18.41 (*SD* = 1.573), at the first time of measurement (T1). Regarding the socioeconomic status (SES), approximately half of the sample was coded as low SES (48.5%), 45.4% as medium SES, and only 6.1% of the students were coded as high SES. All participants did their curricular internship during the academic year of 2007/2008 (second semester). The students averaged about 221 hours (fourteen weeks) of placement in their internships (ranging between 185 to 310 hours).

**Materials and Procedure**

A **Demographic Questionnaire** was used to collect information regarding students’ gender, age, socioeconomic status (SES) and internship duration. Socioeconomic status (SES) was determined by the professional qualifications (ranging from 1 - unskilled to 9 – high skilled workers, according to the Portuguese National Classification of Occupations) and the educational level (ranging from 1 - basic education to 7 - university degree) of the parents. The scores for father and mother were taken as indicators of the family socioeconomic status (3 levels).

**Career exploration –** Students career exploration was assessed using the Portuguese version (Taveira, 1997) of the Career Exploration Survey (CES; Stumpf, Colarelli & Hartman, 1983). The CES is a multidimensional self-administered scale with 54 items using a Likert-type response format, designed to assess five beliefs about exploration - Employment Outlook (α = 0.84), Certainty of Exploration Outcomes (α = 0.89), External Instrumentality (α = 0.85), Internal Instrumentality (α = 0.73), and Importance of Preferred Position (α = 0.68); four dimensions of the career exploration process - Self Exploration (α = 0.70), Environment Exploration (α = 0.76), Intended-systematic Exploration (α = 0.62), and Amount of Information (α = 0.68); and three reactions to vocational exploration - Satisfaction with Information (α = 0.81), Exploration Stress (α = 0.78) and Decisional Stress (α = 0.91). In all subscales, higher scores indicate a higher degree of exploratory behavior/beliefs/reactions. The validity, reliability and multidimensionality of the CES have been widely demonstrated (e.g., Bartley & Robitschek, 2000; Rowold & Staufenbiel, 2010; Stumpf, et al., 1983). Regarding the Portuguese version, confirmatory factor analysis (CFA), conducted by Taveira (1997), with a sample of 9º and 12º grade students, supported a 12 first-order factor structure of the CES.

**Career Decision Making –** it was used the Portuguese version (Silva, 1997) of Career Decision Scale (CDS – Osipow, Carney, Winer, Yanico & Koschier, 1976) to measure career related decision-making.The first two items (Career Certainty Subscale) indicate the degree of certainty felt in having made a career decision. Items 3 to 18 (Career Indecision Subscale) assesses the extent and nature of career indecision. In both subscales, responses are recorded on a 4 -1 Likert-type scale, with 4 indicating high similarity of the student to the item and 1 indicating low similarity. Higher scores indicate more certainty and indecision respectively. Extensive research on the CDS has established strong evidence in support of its good psychometric properties (e.g., Osipow et al., 1976; Osipow & Winer, 1996, Silva, 1997). Internal reliability coefficients in our study were .77 for certainty and .88 for indecision.

**Career Commitment –** student’s career commitment was assessed using the Portuguese version (Silva, 1997) of the Commitment to Career Choices Scale (CCCS – Blustein, Ellis & Devenis, 1989). The two subscales of the CCCS [Blustein et al., 1989](http://www.sciencedirect.com/science/article/pii/S000187910800095X#bbib6) D.L. Blustein, M. Ellis and L. Devenis, The development and validation of a two-dimensional model of the commitment to [previous term](http://www.sciencedirect.com/science/article/pii/S000187910800095X#hit126)career[next term](http://www.sciencedirect.com/science/article/pii/S000187910800095X#hit128) choice process [Monograph]. *Journal of Vocational Behavior*, **35** (1989), pp. 342–378. [**Article**](http://www.sciencedirect.com/science/article/pii/0001879189900341?_fmt=full&_origin=&md5=7bcf780d0ad55e08c858017474822c86) | [[http://www.sciencedirect.com/scidirimg/icon_pdf.gif](http://www.sciencedirect.com/science?_ob=MiamiImageURL&_cid=272611&_user=2459650&_pii=0001879189900341&_check=y&_coverDate=1989-12-01&view=c&wchp=dGLzVlB-zSkWz&md5=601343dc6df8f713bab69db6a85ff37e/1-s2.0-0001879189900341-main.pdf)PDF (2620 K)](http://www.sciencedirect.com/science?_ob=MiamiImageURL&_cid=272611&_user=2459650&_pii=0001879189900341&_check=y&_coverDate=1989-12-01&view=c&wchp=dGLzVlB-zSkWz&md5=601343dc6df8f713bab69db6a85ff37e/1-s2.0-0001879189900341-main.pdf) | | [View Record in Scopus](http://www.sciencedirect.com/science?_ob=RedirectURL&_method=outwardLink&_partnerName=655&_eid=1-s2.0-S000187910800095X&_origin=article&_zone=art_page&_targetURL=http%3A%2F%2Fwww.scopus.com%2Finward%2Frecord.url%3Feid%3D2-s2.0-38249024603%26partnerID%3D10%26rel%3DR3.0.0%26md5%3De46ce030983cf07142a2210c7ff5affa&_acct=C000057388&_version=1&_userid=2459650&md5=546fe52c84df5a17f491bc62c69ac673) |operationalize the two-dimensional model of the commitment to career choices process developed by Blustein and colleagues (1989). The 19-item Vocational Exploration and Commitment subscale (VECS) measures progress in attaining career commitment, while the 9-item Tendency to Foreclose subscale (TTFS) assesses openness to career commitment experiences. Participants indicated their agreement with each item on the VECS and TTFS using a 7-point Likert-type scale ranging from *Never True About Me* (1) to *Always True About Me* (7). Low scores on the VECS represent high commitment to a career goal, whereas high scores on the TTFS indicate a strong tendency to foreclose. In this study, Cronbach’s alphas were .87 and .73 for the VECS and TTFS, respectively.

**Career Decision-Making Self-efficacy** - the Portuguese version (Silva & Paixão, 2005) of theCareer Decision-Making Self-Efficacy Scale-Short Form (CDMSE-SF – Betz, Klein & Taylor, 1996) was used to measure self-efficacy regarding the decision-making tasks. Participants were asked to rate their level of confidence in completing the given tasks, on a 5-point Likert-type scale ranging from “*No confidence at all*” to “*Complete confidence”*.The 25 items comprise five subscales (accurate self-appraisal, gathering occupational information, goal selection, making plans for the future, and problem solving) of five items each, along with a total score. Higher scores indicate higher levels of self-efficacy. There is considerable evidence of reliability and validity of this scale (e.g., Betz & Luzzo, 1996). In this study, the internal reliability coefficients were: Self-appraisal (0.73), Occupational information (0.72), and Planning (0.78).[Nilsson et al., 2002](http://www.sciencedirect.com/science/article/pii/S0001879105000497#bbib27) J.E. Nilsson, C.K. Schmidt and W.D. Meek, Reliability generalization: An examination of the [previous term](http://www.sciencedirect.com/science/article/pii/S0001879105000497#hit280)career[next term](http://www.sciencedirect.com/science/article/pii/S0001879105000497#hit282)[previous term](http://www.sciencedirect.com/science/article/pii/S0001879105000497#hit281)decision[next term](http://www.sciencedirect.com/science/article/pii/S0001879105000497#hit283)[previous term](http://www.sciencedirect.com/science/article/pii/S0001879105000497#hit282)making[next term](http://www.sciencedirect.com/science/article/pii/S0001879105000497#hit284)[previous term](http://www.sciencedirect.com/science/article/pii/S0001879105000497#hit283)self[next term](http://www.sciencedirect.com/science/article/pii/S0001879105000497#hit285)-[previous term](http://www.sciencedirect.com/science/article/pii/S0001879105000497#hit284)efficacy[next term](http://www.sciencedirect.com/science/article/pii/S0001879105000497#hit286)[previous term](http://www.sciencedirect.com/science/article/pii/S0001879105000497#hit285)scale[next term](http://www.sciencedirect.com/science/article/pii/S0001879105000497#hit287). *Educational and Psychological Measurement*, **62** (2002), pp. 647–658. | [View Record in Scopus](http://www.sciencedirect.com/science?_ob=RedirectURL&_method=outwardLink&_partnerName=655&_eid=1-s2.0-S0001879105000497&_origin=article&_zone=art_page&_targetURL=http%3A%2F%2Fwww.scopus.com%2Finward%2Frecord.url%3Feid%3D2-s2.0-0036352705%26partnerID%3D10%26rel%3DR3.0.0%26md5%3D2660ff9968773901d683b482600cf9b6&_acct=C000057388&_version=1&_userid=2459650&md5=2bd6db6a65c3091b3af433b57d67aed3) | | **Full Text** via CrossRef

**Internship Qualities** – The Internship Quality Inventory (IQI) (Gamboa, 2011) was developed to measure the students perceptions of their practicum training quality in 9 dimensions: Autonomy (4 items, α = 0.81, e.g., “*in my internship,* *I was able to use my initiative*”), Peer Feedback (4 items, α = 0.83, e.g., “*in my internship*, *my colleagues gave me clues to improve my work*”), Social Support (4 items, α = 0.82, e.g., “*in my internship, the people I worked with were friendly*), Task Diversity (4 items, α = 0.83, e.g., *my internship involved the performance of a wide variety of tasks*), Learning Opportunities (5 items, α = 0.90, e.g., “*in my internship, the activities were challenging*”), Supervisor Instructions Clarity (4 items, α = 0.79, e.g., ), Supervisor Feedback (4 items, alpha= 0.80, e.g., “*in my internship, my supervisor gave me often clues about the quality of my work*”), Supervisor Training (4 items, α = 0.84, e.g., *before starting a new task, my supervisor showed how to do it*”) and Supervisor Support (7 items, α = 0.87, e.g., “*my supervisor showed much interest in my opinions and ideas”*). Participants responded to the items of the IQI on a 5-point Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (5), with higher scores indicating a higher degree of perceived quality.

**Procedure**

The study consisted of a short-term longitudinal design with two points of data collection, T1 – before the internship, and T2 – immediately after finishing the internship. After the initial phase, on which the study was presented to the participating schools, we began establishing the groups and organizing the timing of the data collection. Subsequently, appropriate informed consent procedures (i.e., parent´s, students’, and school board’s permission) were followed in collecting data. The application of the instruments was done by trained co-researchers, in a classroom context, with the assistance of the professor of the class. On average, each assessment session lasted around 45 minutes. It should also be noted that each of the participants included in the study provided responses to the instruments at both times (before and after the internship). To ensure data confidentiality, pairing of the questionnaires was made using an alphanumeric code.

**Results**

Firstly, students were classified into different vocational groups using cluster analysis, which is an exploratory multivariate analysis technique that categorizes individuals into homogenous groups based on their shared characteristics (Maroco, 2003). We employed a *K-means* nonhierarchical aggregation algorithm, which initially distributes subjects based on the number of clusters defined by the researcher and the centroid calculated for each *K* cluster. The Euclidean distance of the centroids to each subject in the database was then calculated to group subjects in the clusters with the nearest centroid (Maroco, 2003). However, because the *K-means* procedures use Euclidian distances, the original variables were standardized to generate a set of z-scores to ensure that all measures contributed equally to the analysis. Due to the absence of a standardized procedure for determining the optimal number of clusters in the analysis, the criteria most frequently mentioned in the literature (e.g., Maroco, 2003) were adopted to ensure that a sufficient number of groups were identified, that the distribution of subjects into clusters was balanced, that statistically significant differences between clusters for each variable were determined, and that the theoretical relevance of each solution was assessed. These criteria produced a four-cluster solution that organized cases into groups that exhibited relatively homogenous characteristics within themselves and heterogeneous characteristics between each other as well as providing the most reasonable interpretation of the data. Table 1. presents the mean values for the vocational variables in the four student clusters and the distribution of the demographic variables of age, sex, and socioeconomic status that characterize each cluster. Table 1 also presents the results of the analysis of variance that were performed to determine the relative contribution of the different vocational variables to the differentiation of the clusters as well as the corresponding effect size (*partial eta-squared*, η2).

[insert Table 1]

The variables that contributed most to the discrimination among the clusters were: exploration and commitment (Commitment to Career Choices Scale, CCCS; η2 = .47); occupational information (Career Decision-Making Self-Efficacy Scale, CDMSE; η2 = .33); future plans (CDMSE; η2 = .32); indecision (Career Decision Scale, CDS; η2 = .32); internal instrumentality (Career Exploration Survey, CES; η2 = .31), amount of information (CES; η2 = .31) and external instrumentality (CES; η2 = .30). Associations between the demographic variables and the student clusters identified by the four-cluster solution were not statistically significant. Regarding the number of students, the cluster solution adopted did not distribute them equally among the four clusters. The first and third clusters each included more than 100 cases, while cluster 2, with only 48 cases, represented 13.87% of the sample. The values for the career development variables characterizing each student cluster are also presented in Table 1.

Cluster 1. This cluster, which included 31.5% of the students in the sample (n = 109), exhibited moderate to low levels of self-efficacy in decision making and low levels of indecision. These students were also reasonably committed to previous career options. With respect to career exploration, this cluster grouped students with unfavorable beliefs regarding the professional work environment and the exploration process, as well as low levels of exploration of the environment and of the self. With respect to exploration reactions, although students in this cluster exhibited low levels of satisfaction with the information gathered, this was associated with low levels of stress in regard to career exploration and decision-making processes. Briefly, students in this cluster began their internships without having first actively engaged in vocational exploration and planning activities due to their relative “comfort” with their previous career decisions. This cluster was termed the *deferred* *exploration/committed decision* group.

Cluster 2.This cluster, which included 13.87% of the students in the sample (n = 48), simultaneously exhibited the lowest levels of self-efficacy in career decision making and the highest levels of indecision, as well as low levels of career choice commitment. They displayed unfavorable beliefs regarding the work environment and their ability to obtain a favorable position in the labor market. In contrast, these students valued the exploration of the environment and of themselves as an “instrumental” activity for achieving career goals. These students also exhibited the lowest levels of intended-systematic exploration, environment exploration and of amount of information gathered. In addition to gathering less information, these students responded unfavorably to exploration, which was reflected in low levels of satisfaction with the information gathered, as well as the stress associated with exploration and decision-making processes. In summary, these students entered their internships without having first engaged in high quality exploratory activities, despite the stress created by their lack of confidence and high levels of anxiety regarding career decisions. This cluster was termed the *self-oriented/avoidant exploration* group.

Cluster 3. This cluster, which included 34.97% of the students in the sample (n = 121), simultaneously exhibited high levels of self-efficacy in decision making and above average levels of indecision, which were associated with low commitment to previous career choices. They displayed favorable beliefs with respect to career exploration regarding both self exploration and the work environment. This cluster also included students with the highest levels of self-exploration and intended-systematic exploration, which were associated with high levels of stress regarding career exploration and decision-making. These students seemed to approach the internship situation with a clear sense of their interests, skills, and of the alternatives available at school and in the world of work. For this reason, their high levels of indecision appeared to be due to the anxiety produced by career planning and decision-making. This cluster was termed the *systematic exploration/deferred decision and commitment* group.

Cluster 4. Students in this cluster, which included 19.65% of the students in the sample (n = 68), regarded themselves as capable of making vocational decisions. They displayed low levels of indecision and had the highest levels of commitment to previous career decisions. Their favorable beliefs regarding career exploration were accompanied by intentional and self-oriented exploratory activity. These students were satisfied with the level of information gathered and experienced low levels of stress regarding career exploration and decision making. Because the confident exploration pattern that characterized these students enabled them to approach the internship situation with a clear—although not always flexible—sense of their career goals, we expected a positive outcome of the training period. This cluster was termed the *confident exploration/high career commitment* group.

The second phase of the analysis employed repeated measures ANCOVA to assess the significant interactions between perceived internship qualities (IQI) and the changes in vocational variables from T1 to T2, for each cluster. The vocational domain variables were successively included as within-subjects, repeated measures factors with two levels (prior to and after the internship), with internship qualities serving as covariates. Table 2 presents a summary of the results for the interactions with η2 > 0.05.

[insert table 2]

*Deferred exploration/committed decision group* - with respect to career indecision (CDS), students in this cluster had a value below the overall sample average at T1, and the extent of the change observed from T1 to T2 exhibited a significant interaction with supervisor training, *F*(1, 107) = 8.30, η2 = .07. The tendency to prematurely exclude options (Tendency to Foreclose Subscale, TTFS) exhibited similar results because both learning opportunities and social support exhibited positive interactions with this factor, *F*(1, 107) = 7.40, η2 = .07, and *F*(1, 107) = 6.51, η2 = .06, respectively. There were gains in the desired direction from T1 to T2 for all measures of beliefs about exploration (CES), except for the importance of a preferred position subscale. In this domain, there was a significant interaction between internal instrumentality and colleague feedback, *F*(1, 107) = 7.33, η2 = .06. All changes in exploration behaviors from T1 to T2 were positive and statistically significant, indicating that gains occurred between the onset and end of the internship. The more significant interactions were between environment exploration and supervisor support, *F*(1, 107) = 5.91, η2 = .05; self-exploration and learning opportunities, *F*(1, 107) = 9.64, η2 = .08; intended-systematic exploration and supervisor support, *F*(1, 107) = 7.56, η2 = .07; and the amount of information and colleague feedback, *F*(1, 107) = 9.45, η2 = .08. Briefly, the technical and professional activities that occurred during the internship had a greater impact on students’ self-analysis, while the support of colleagues and supervisors exhibited a greater association with intended-systematic exploration. Satisfaction levels increased during the internship period, which was accompanied by increased stress regarding career exploration and decision making. Internship qualities were associated with changes in stress due to decision making and, in particular, due to interactions with task variety, *F*(1, 107) = 6.77, η2 = .06, and learning opportunities, *F*(1, 107) = 5.89, η2 = .05, with improved learning opportunities associated with a greater change in stress due to decision making. Finally, regarding self-efficacy in decision making, significant interactions were observed between self-evaluation and learning opportunities, *F*(1, 107) = 8.01, η2 = .07, and between occupational information and the four supervision dimensions of supervisor support, *F*(1, 107) = 9.06, η2 = .08; supervisor training, *F*(1, 107) = 7.97, η2 = .07; clarity of supervisor instructions, *F*(1, 107) = 7.49, η2 = .07; and supervisor feedback, *F*(1, 107) = 6.17, η2 = .06.

*Self-oriented/avoidant exploration group* -this cluster grouped students with high levels of indecision, low levels of confidence in decision-making skills, low levels of exploratory activity, and high levels of anxiety regarding vocational decision making. Overall, students’ beliefs regarding the professional world, which were the most unfavorable in the sample, significantly increased from T1 to T2. For the employment status factor (EO), the extent of change was associated with autonomy and supervisor feedback, *F*(1, 46) = 8.45, η2 = .16, and *F*(1, 46) = 4,82, η2 = .10, respectively. For the certainty of career exploration outcome Factor (CEO), there were significant interactions with supervisor feedback and the clarity of supervisor instructions, *F*(1, 46) = 11.73, η2 = .20, and *F*(1, 46) = 8.09, η2 = .15, respectively. The interaction with the greatest magnitude was between internal instrumentality and supervisor support, F(1, 46) = 6.59, η2 = .13). Interactions between exploration behaviors and internship quality factors were also observed. There were interactions between environment exploration and colleague feedback, *F*(1, 46) = 4.28, η2 = .09; self-exploration and supervisor training, *F*(1, 46) = 5.18, η2 = .10; intended-systematic exploration and task variety, *F*(1, 46) = 9.12, η2 = .17; and the amount of information and task variety, *F*(1, 46) = 4.16, η2 = .08. Learning opportunities were associated with the changes observed for both exploration stress and decision-making stress, *F*(1, 46) = 4.22, η2 = .08, and *F*(1, 46) = 6.89, η2 = .13, respectively. There were no significant interactions between the internship quality variables and decision (CDS) or commitment (VECS) factors.

*Systematic exploration/deferred decision and commitment group* - changes in self-efficacy were associated with several internship qualities. Thus, social support was important for self-evaluation (*F* (1, 119) = 9.08; η2 = .07), while the change in occupational information was associated with aspects of supervision, in particular with supervisor feedback, *F*(1, 119) = 21.73, η2 = .15; supervisor training, *F*(1, 119) = 14.98, η2 = .11; and supervisor support, *F*(1, 119) = 12.50, η2 = .10. There were no significant interactions for the indecision (CDS) and commitment (VCES) factors or for beliefs regarding the work environment. In the belief exploration dimension, internal instrumentality was associated with perceived social support and with supervisor training, *F*(1, 119) = 8.07, η2 = .06, and *F*(1, 119) = 10.89, η2 = .08, respectively. The importance of obtaining preferred position Factor (IMP) significantly interacted with task variety in the internship context, *F*(1, 119) = 8.94, η2 = .07. Exploration of the environment exhibited a significant interaction with the quality of social support, *F*(1, 119) = 8.00, η2 = .06, while self exploration (*F*(1, 119) = 7.24, η2 = .06) and intended-systematic exploration (*F*(1, 119) = 15:22, η2 = .11) were associated with learning opportunities.

*Confident exploration/high career commitment group* - this cluster represented the small group of students whose career profile favored career exploration and decision making. There were no significant interactions between self-efficacy in decision making and internship qualities. Decision making certainty (CDS) exhibited a significant interaction with supervisor training, *F*(1, 66) = 6.27, η2 = .09, while career commitment was associated with the internship qualities of autonomy and supervisor support, *F*(1, 66) = 4.17, η2 = .06, and *F*(1, 66) = 6.14, η2 = .09, respectively. Regarding supervision, particularly supervisor feedback, internship quality influenced external instrumentality, *F*(1, 66) = 9.84, η2 = .13. Within the domain of behavior exploration, significant interactions exhibiting significant gains in the desired direction were found between environment exploration and autonomy, *F*(1, 66) = 5.68, η2 = .08, and between systematic exploration and autonomy, *F*(1, 66) = 5.79, η2 = .08. Finally, this cluster exhibited the most favorable results in the entire sample regarding exploration reactions. In this dimension of career exploration, the change in stress levels with exploration significantly interacted with social support, *F*(1, 66) = 6.82, η2 = .09. Briefly, apart from autonomy, social support, and some aspects of supervision (e.g., supervisor feedback), few qualities of the internship produced changes in the vocational domain for this cluster of students, who were already highly committed to their career options.

**Discussion**

The cluster analysis classified participants into four distinct and conceptually relevant career profiles. This procedure revealed heterogeneity within the sample, while addressing the diverse vocational strategies of the students who participated in internships (e.g., Barling & Kelloway, 1999; Staff & Mortimer, 2007). The results identified interactions between the within-subjects factor of time and the between-subjects factor of student clusters for almost all vocational variables, which is consistent with developmental-contextualist career approaches (Vondracek et al., 1986; Vondracek & Porfeli, 2008) that claim that the diversity and complexity of the individuals and of the environmental contexts must be addressed if we want to understand the career development process.

The primary goal of the present study was to determine whether internship qualities exerted the same influence on students with different career profiles. As expected, differences in internship qualities did not uniformly affect the four student clusters, and there were differences in the type, number, and magnitude of the interactions between internship qualities and career development factors.

Cluster 1(*Deferred exploration/committed decision)* included students who had unfavorable beliefs and behaviors regarding career exploration combined with low levels of concern with career issues due to previous career decisions. This approach to career decision making is often viewed as less adaptive (e.g., Baiocco et al., 2009) because it reflects lack of information regarding the self and the professional work environment. In this cluster, involvement in concrete tasks (e.g., task variety and learning opportunities) appeared to have the greatest impact on representations of the self, while supervisor support and training seemed to be important for developing intentional exploratory activity toward the environment and for increasing confidence in career exploration and planning. For these students, the progressive mastery of tasks during the internship might motivate the internalization and self-determination of career exploration and decision making (e.g., Ryan & Deci, 2000; Flum & Blustein, 2000), which could be extended to other processes and contexts (e.g., Flouri & Buchanan, 2002). In summary, from a career development viewpoint, the internship experience was beneficial for this student group due to increased levels of exploration and concern with career decision making over time, which permitted the revaluation of previous career decisions.

Cluster 2 (*Self-oriented/avoidant exploration*) included students who entered the internship situation with a less favorable career profile. In addition to high levels of indecision and stress regarding career decision making, these students focused their exploratory activity on themselves and found it difficult to incorporate information regarding the environment into their decision making. Moreover, internship qualities, i.e., colleague feedback, supervisor training, task variety and learning opportunities, influenced only some dimensions of career exploration and did not significantly influence career decision making and commitment. Thus, their career exploration appeared to benefit from the external regulation provided by supervisor instructions and colleague feedback. In contrast, as noted in the literature (e.g., Blustein, 1989; Constantine & Flores, 2006; Gushue, Clarke, Pantzer & Seanlan, 2006; Patton & Creed, 2007a; Rogers et al., 2008), the absence of significant interactions with indecision and commitment might indicate that students’ anxiety and lack of confidence limited openness to experiences, prevented experience-based improvement, undermined the emergence of work-related adaptive skills (e.g., Savickas, 2005), and interfered with career decision making and commitment (e.g., Kelly & Lee, 2002; Patton & Creed, 2007b). For this group of students, the influence of internship qualities was superficial and affected only the more procedural aspects of career exploration. Although the effects were desirable, they did not motivate students to assess their assumptions regarding their career goals more realistically (e.g., Flum & Blustein, 2000; Stumpf & Hartman, 1984).

Cluster 3 (*Systematic exploration/deferred decision and commitment*) included a group of students who exhibited confidence in their decision-making skills at the outset of the internship, as well as favorable exploration behaviors that were combined with high levels of anxiety and some indecision regarding their academic and professional future. Moreover, for this group, there were no significant differences in the mean values observed at T1 and T2. Therefore, consistent with social-cognitive career theory (e.g., Lent et al., 2002), social support, colleague feedback, and learning opportunities significantly influenced measures of decision-making self-efficacy, and these internship qualities could be considered to be the primary sources of self-efficacy. The quality of the internship experience might have increased students’ confidence with respect to some of the factors facilitating the transition to the professional work environment (e.g., Lent, Hackett & Brown, 1999). Regarding exploratory activity, there were significant interactions between internship qualities and student beliefs and exploration behaviors. These results are consistent with the vocational behavior and self-determination theory perspectives (e.g., Blustein & Noumair, 1996; Flum & Blustein, 1999; Flum & Blustein, 2000; Ryan & Deci, 2000) because the support and guidance provided to students enabled them to explore information about themselves and the environment, as well as modify their beliefs about career exploration. However, although the vocational literature has found that confident and actively involved individuals display better career development and adjustment (e.g., Creed et al., 2009; Savickas, 2005; Skorikov, 2007; Super et al., 1996), internship qualities did not appear to influence students’ exploration reactions or indecision and commitment factors. Because the development of these processes occurs in several stages (e.g., Gati & Asher, 2001; Germeijs & Verschueren, 2006; Super et al., 1996), support and learning opportunities were associated with students’ information gathering but did not affect career decision-making and commitment processes, which require higher levels of self-knowledge, increased emotional maturity, and the ability to manage uncertainty and risk (e.g., Saka & Gati, 2007; Skorikov, 2007).

Finally, cluster 4 (*Confident exploration/high career commitment*) included students whose career profile favored career exploration and decision making. These students were confident and exhibited low levels of indecision, although this was combined with lower levels of exploration and higher decision-making stress. With regard to exploration, these students particularly benefitted from the autonomy experienced in the internship context, which was consistent with career exploration theory (e.g., Flum & Blustein, 2000) and self-determination theory (e.g., Ryan & Deci, 2000). In this light, the more confident individuals responded more favorably to the autonomy provided by the new learning context.

**Implications for practice and future research**

Taking into account the results of this study, we should underscore the importance of the internship quality in the vocational development of students attending VET courses in secondary education, mainly in what concerns the career exploration process. For practice, our main contribution lies in breaking with the idea that the internship, as a modality of experiential learning, has the same impact on all VET students. On the contrary, the quality of the work experience has an effect that appears to be more pronounced for some of the clusters. In fact, according to the four vocational profiles established, some students benefit largely from the supervision dimensions, while others show significant gains in learning situations that provide greater autonomy, others still seem to be particularly responsive to the learning opportunities and challenges encountered in the work context. Therefore, we reaffirm the importance of differential practices within the career intervention domain, which should be based on complete information regarding the vocational profile of the students (e.g., interests, style of decision making, self-efficacy, goals and career plans), and the learning environments quality. In future research, we believe that more longitudinal studies are needed, with several moments of data collection, covering the entire cycle of students training (10, 11 and 12 years). It is also important to assess the long-term impacts of the internship quality on career development outcomes, such as job satisfaction and less time spent unemployed.

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