



Students' perceptions of competencies by the end of a masters' degree

Perceções de competências: um estudo com alunos finalistas de mestrado

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Abstract

Current models of employability are rather broad and complex, including not only a set of skills as determinant factors in employability, but also a subjective dimension that considers individual self-beliefs and attitudes. This study presents the preliminary results of a research project focused on the factors that impact employability with 214 participants, senior students taking a masters' degree. Results pointed to a closer interconnection between the practical competencies, employability competencies, preparedness to work transition, and expectations of success. These findings stress the importance of a stronger practical component in the curriculum, as a way to promote employability.

Keywords: higher education; employability; competencies; self-beliefs; transition to workplace

Resumo

Os modelos atuais de empregabilidade, abrangentes e complexos, incluem não apenas o conjunto de competências técnicas e transversais necessárias à integração no mercado de trabalho, mas consideram também uma componente subjetiva que integra as crenças e atitudes individuais. Apresentam-se os resultados preliminares de um estudo centrado nas perceções de competências e preparação para o mercado de trabalho, realizado com 214 alunos, finalistas de mestrado. Os resultados obtidos apontam para uma elevada correlação entre competências práticas, competências de empregabilidade, preparação e expectativas de sucesso na transição para o trabalho. Realça-se ainda a importância da integração de uma componente prática nos currículos educativos.

Palavras chave: ensino superior; empregabilidade; competências; crenças pessoais; transição para o mercado de trabalho

The Bologna structure was implemented in Portugal in 2007. The first masters' graduates finished their degree in 2013, and, since then, little information has been collected until this moment about graduates' experiences in the new Bologna-type structure programme. Particularly, there is little knowledge about the perceptions of students about the development of their competencies during Higher Education (HE), and then, about the perceived employability at the end of their training courses, since the

implementation of the new Bologna orientations. On the other hand, there is still substantial variation across European countries between HE systems and subsequent employment experiences, with some countries showing stronger professional emphasis than others (García-Aracil, 2012). Several approaches about quality in HE give top priority to students, considering them the most important stakeholders (Ravishankar & Murthy, 2010), which results in an effort to design procedures and courses that match

both learners' needs and the relevant context (García-Aracil, 2012; Hartman & Schmidt, 1995).

One of the main missions of HE concerns the development of competencies that prepare students for the workplace (Warn & Tranter, 2001). According to this view, we can anticipate that the development of competencies will be related to their subjective employability (Tomlinson, 2007) or perceived employability (Rothwell, Herbert, & Rothwell, 2008; Wittekind, Raeder, & Grote, 2010), designations that integrate the idea of "self-belief" about chances of success in finding a job. Indeed, employability has been defined as a complex and multi-faceted concept (Forrier & Sels, 2003; Fugate, Kinicki, & Ashforth, 2004; Rothwell et al., 2008), which includes internal factors, such as vocational or job-related knowledge and skills, and mastery of job search (Hillage & Pollard, 1998) along with the potential to learn (Lane, Puri, Cleverly, Wylie, & Rajan, 2000), and also, external factors, such as the prevailing state of the labor market (Kirschenbaum & Mano-Negrin, 1999; Lane et al., 2000).

Within several employability models, such as the USEM account for employability (Yorke & Knight, 2004) or the Career EDGE (Pool & Sewell, 2007), efficacy beliefs or students' self-theories provide a crucial link between knowledge, understanding, skills, experience and personal attributes and employability. Pool and Sewell (2007) suggest that everything the student does during her/his time at university will have an impact on self-esteem; further, it is through the development of a high global self-esteem that employability is achieved. For these reasons, the perceptions about the competencies developed during a degree can play an essential role in understanding future employability. Focusing specifically on employability, the concept still remains under-researched, particularly in the sense of what it actually means to individuals in the context of their experiences, their aspirations, and their perceptions concerning the ability they have to compete in the external labor market, which, in turn, may be the determinants of perceived employability (Rothwell et al., 2008; Wittekind et al., 2010). Rothwell et al. (2008) developed a self-perceived employability matrix to construct and validate a scale for university students composed by four major components: *my university, my field study, the state of the external labour market, and selfbelief*. However, the internal aspect, related to skills and self-confidence (close to beliefs of personal efficacy), was worthy of further investigation. In turn, although the model proposed by Wittekind et al. (2010) regarding the determinants of employability represents an important advance for the understanding of the subject, it was developed with employees, and, to our knowledge, there is no data with college samples.

This study is part of a broader research project focused on the impact factors on employability of Portuguese graduates. Concerning the aim of this paper, it intends to be a contribution for the understanding of students'

perceptions of the development of competencies during HE with the new Bologna-type structure programme, as well as their preparedness for work transition, and expectations of success in work transition. These two dimensions are closely related with the concepts of subjective employability and self-perceived employability, presented previously. Therefore, the research questions that guide this work are: How do graduates evaluate the competencies acquired by the end of their master courses? Which competencies are the most closely related with employability? How do graduates evaluate their preparedness for work transition, and their expectations of success? Is there any association between the perception of mastering the different competencies, and the preparation for work transition and expectations of success? We believe that a better understanding of students' self-perceptions can be helpful for the transition between university and work contexts.

Method

Participants

A convenience sample of 214 students (36% male; 64% female) from a public university situated in the North of Portugal participated in this study. Students attend the senior year of masters' degree from three different fields (Economics 47%; Social sciences 27%; and Law 26%). The age average range is 27.57 (SD= 8.29), ranging between 19 and 62 years.

At the moment of data collection, 89 participants (42%) had the status of student-working, and 127 participants (nearly 59%) of the sample referred to have had a previous work experience so far. For analysis purposes three groups were divided, according with work experience: no work experience (WE1), up to 24 months of work experience (WE2), and more than 24 months of work experience (WE3).

Measure

For the purpose of this paper, three topics of a larger questionnaire were selected, which focus on the evaluation of the training received at HE and the transition to the labor market. The questions selected for analysis were the following: (1) "Overall, how do you rate the quality of the college education you received regarding each of the following areas of knowledge/competencies?" (5-point Likert scale, ranging from 1 "very weak" to 5 "very strong"); (2) "Considering the college education you received, how do you rate your overall preparation for the transition to the labor market?" (5-point Likert scale, ranging from 1 "not prepared at all" to 5 "very well prepared"); (3) "Overall, how do you rate your expectations of success in the transition to the labor market?" (5-point Likert scale, ranging from 1 "very low" to 5 "very high").

Procedures

The questionnaire was applied in classroom context, after the explanation of the aims of the research project. After obtaining students' voluntary participation, they signed an informed consent, and anonymity and confidentiality of the collected information was assured. Data collected were analysed with the software package used for statistical analysis, IBM SPSS (version 22.0).

Results

The following tables display the evaluation of different competencies developed with college education, and the perception of preparation to work transition, according with gender and course field (Table 1) and time of work experience (Table 2). The several competencies represent four main groups: scientific competencies (SC) – focusing on theoretical contents learned in the course; practical competencies (PC) – regarding technical preparation to perform a job; transversal competencies – a set of competencies that are transferable to the various professional activities. For this group, we followed the classification presented by García-Aracil and Velden (2008), constituted by communication competencies (CC - speak and write clearly and effectively); methodological competencies (MC - know how to use tools and resources, as analyse problems, use information technologies, speak foreign languages, etc.); interpersonal competencies (IC - know how to work and interact with others, how to lead, manage conflicts, work in a team, motivate others, etc.); participative competencies (PC- initiative, autonomy, self-motivation, decision making, identification of opportunities, innovation, lifelong learning etc.); organizational competencies (OC - know how to organize for tasks, how to plan, collect and process information, to be attentive to detail, etc.); socioemotional competencies (SC-know how to manage emotions as tolerate stress, have self-confidence, self-control, etc.); generic competencies (GC - general knowledge, sense of citizenship, ethical awareness, etc.); and lastly, employability competencies (EC) – referring to job search strategies, adaptability and capacity to take career decisions.

In a first general overview of the obtained results, participants scored higher for scientific knowledge than practical knowledge or transversal competencies. The lowest evaluation relates to employability competencies, followed by practical skills. Concerning work transition, participants evaluate their preparation to labor market transition slightly higher than their expectations of success in labor market transition.

Analysing the evaluation of competencies according to gender, a single statistically significant difference was found, in methodological competencies ($t = 2.839$; $df = 210$; $p = .005$), favouring male students. Considering fields of study, Economics' students evaluated both their practical competencies ($z = 3.416$; $df = 210$; $p = .035$) and

socioemotional competencies ($z = 4.358$; $df = 210$; $p = .014$) more positively, when compared to Social Sciences, and Law students. In turn, students taking a master in Social Sciences scored higher in interpersonal competencies ($z = 4.358$; $df = 210$; $p = .014$). Focusing on work transition, and despite a single difference found according to gender concerning competencies' evaluation, it is possible to verify a statistically significant difference concerning both the preparation to labor market transition ($t = 2.610$; $df = 207$; $p = .010$) and expectations of success ($t = 2.219$; $df = 206$; $p = .028$), with female students scoring lower than male students. Comparing the different field of study, no statistically significant differences were found concerning these two items.

Table 1
Evaluation of competencies and preparation to work transition by gender and course field

	n =	M (77)	F (136)	Ec (102)	SS (57)	Law (55)
Competencies						
SC		3.96	3.87	3.96	3.79	3.93
PC		3.45	3.32	3.51	3.14	3.35
CC		3.75	3.66	3.72	3.70	3.61
MC		3.82	3.50	3.72	3.54	3.51
IC		3.81	3.71	3.75	3.95	3.53
PC		3.78	3.81	3.81	3.89	3.67
OC		3.66	3.88	3.87	3.75	3.69
SC		3.65	3.49	3.69	3.28	3.54
GC		3.89	3.75	3.85	3.77	3.75
EC		3.29	3.28	3.37	3.12	3.30
Work transition						
Preparation to LM transition		3.64	3.35	3.52	3.25	3.55
Expectations of success		3.55	3.27	3.46	3.16	3.43

Table 2
Evaluation of competencies and preparation to work transition by time of work experience

	n =	WE1 (87)	WE2 (71)	WE3 (56)
Competencies				
SC		3.88	3.87	3.98
PC		3.51	3.17	3.42
CC		3.70	3.63	3.75
MC		3.75	3.54	3.52
IC		3.83	3.66	3.73
PC		3.78	3.75	3.89
OC		3.85	3.79	3.71
SC		3.55	3.55	3.54
GC		3.85	3.70	3.86
EC		3.40	3.20	3.21
Work transition				
Preparation to LM transition		3.45	3.31	3.66
Expectations of success		3.30	3.31	3.58

Regarding the duration of different work experiences, students with no work experience have a higher evaluation to their practical knowledge, in comparison to their colleagues with work experience ($z = 3.035$; $df = 210$; $p = .050$). Work experience seems also to have an impact on the perception of preparation to work transition, seeing that a statistically significant difference was found between the three groups compared ($z = 3.007$; $df = 207$; $p = .052$), favouring students with a longer work experience.

In **¡Error! No se encuentra el origen de la referencia.** e present an analysis of the correlation between the evaluation of different types of competencies developed

(scientific, practical, transversal, and employability), and between those competencies and the perception of preparation to work transition and expectations of success. A first analysis allows us to verify a high positive intracorrelation between almost all competencies developed through academic training. A second aspect that is noteworthy is a higher correlation between practical and transversal competencies. Also, practical knowledge represents the competency more highly correlated with employability skills, preparation for transition, and expectations of success.

Table 3

Correlations between evaluation of competencies and preparation to work transition

Vars.	PC	CC	MC	IC	PC	OC	SC	GC	EC	PT	ES
SC	.294*	.403*	.232*	.228*	.311*	.224*	.222*	.159**	.144**	.295*	.252*
PC		.474*	.349*	.265*	.273*	.355*	.345*	.202*	.434*	.461*	.294*
CC			.424*	.439*	.518*	.489*	.443*	.376*	.313*	.243*	.229*
MC				.444*	.424*	.270*	.235*	.262*	.298*	.260*	.217*
IC					.600*	.444*	.396*	.434*	.341*	.271*	.135*
PC						.509*	.361*	.338*	.356*	.284*	.194*
OC							.517*	.368*	.411*	.221*	.182*
SC								.519*	.429*	.339*	.256*
GC									.334*	.178*	.181*
EC										.558*	.404*
PT											.494*
ES											-

* $p < .01$, ** $p < .05$

Discussion

The perceptions that students have about their competencies at the end of their college education can be of high value to the understanding of employability. Although several theoretical models of employability are broad and complex (Pool & Sewell, 2007; Yorke & Knight, 2004), there is a common tendency to “simplify” the discourse around training for employability, with a growing strain on HE institutions making more explicit efforts to develop the ‘key’, ‘core’, ‘transferable’ and/or ‘generic’ skills needed in many types of high-level employment (Mason, Williams, & Cranmer, 2009). It is our belief that the process of employability should focus not only on the “top competencies” to develop, but also include the individual – in this case, the student – with her/his beliefs and expectations.

Participants consider that HE contributed more for the development of scientific knowledge than for the development of practical, transversal, or employability competencies. These scientific competencies correspond to the specialized knowledge of the field of study, which can be understood as the base of the training. Allen and Velden (2012) enhance the role of this group of competencies, claiming that specialized competencies should not be neglected in the complete interdependent package of skills

for the 21st century. In that way, a score near 4, along a 5-point scale, expresses a positive appraisal by participants. Regarding practical competencies, students’ evaluation demonstrates a perception of lower contribution from HE. An interesting aspect is that participants with no work experience attribute a higher score to that item, compared with their colleagues who have work experience. This difference may be related with their lack of awareness about the labor market in terms of the need of knowledge, and specific demands. In turn, participants with work experience may have more awareness of a daily work routine, hence, are more demanding about the need of practical competencies. Analysing differences between field of study, Economics stands out from Social Sciences, and Law in terms of practical and socioemotional competencies. This may be explained by some differences among fields, namely, the existence of several initiatives promoted by the School of Economics to assure contact with practice. Examples of such activities are the Business Day (meetings between companies and students), CEO Talks (in which CEO’s share their professional experiences with students), Alumni Talks (where former students share their professional experiences with current students), Field Day (study visits to companies), among others. Nevertheless, further research should specifically address the impact of these activities, in a more structured and

intentional way. Concerning Social Sciences, participants from this field scored higher in the contribution of HE to the development of interpersonal competencies. This significant difference may be related to the particularities of such field of study, which not only tends to stimulate contact with people (such as interviews with professionals, group dynamics, etc.), but is essentially focused on the study of human behavior (e.g.: education, sociology). However, further research is also necessary in order to have a clearer understanding of the impact of these study programs and the development of competencies.

Regarding gender differences, male and female students have a similar evaluation of the competencies they developed, except for methodological competencies, with a difference favouring male students. This corroborates the existent literature, especially for the use of information technologies and problem solving skills (e.g., Bimber, 2000; Hargittai & Shafer, 2006; Pajares & Miller, 1994). Despite the general similarity between male and female students in the remaining competencies, it is curious to notice that female students have lower perceptions of preparedness for labor market transition and lower expectations of success in that transition. These results are consistent with previous studies indicating that women score higher than men in measures of perception of career barriers (Cardoso & Ferreira Marques, 2001; Cardoso & Moreira, 2009; McWhirter, 1997), with subsequent impact in career planning (Cardoso & Moreira, 2009). Indeed, several studies have confirmed differences in various career outcomes across different fields, such as earning, promotions and occupation of executives' positions (Bertrand, Goldin, & Katz, 2010; Gayle, Golan, & Miller, 2012; Ginther & Hayes, 1999; Ginther & Kahn, 2004).

Analysing the correlation between the several competencies, the perception of practical knowledge appears to be more strongly correlated with employability competencies, and with the perception of preparation to work transition than any other domain of competencies (scientific knowledge or any transversal competency). This aspect evidences the role of practical competencies in determining future students' employability, not only in a direct way, through the development of technical or transversal competencies, but also indirectly, through the development of students' perceptions of preparation to the transition to the labor market and expectations of success. Given the recognized relationship between self-esteem and achievement (Lawrence, 1996; Pool & Sewell, 2007), it is expected that students with higher perceptions of preparations, as well as higher expectations of success, might actually be more successful. For this reason, and citing Yorke and Knight (2004), good curriculum designs should construct understandings of the subject matter and develop skilful practices, but they should also care for the development of positive efficacy beliefs, metacognition, and other complex achievements.

In our view, these data strengthen the importance of

practical experiences during HE, not only in a way to develop technical and soft competencies, but also, considering metacognitive abilities and self-efficacy. Besides technical and transversal competencies, HE institutions should encourage and promote opportunities for students to develop competencies that are traditionally less referred and valued (by academics, employers and students), such as career development competencies (it should be noted that employability competencies represent the group with lower evaluation by participants) and psychological resources, namely the *efficacy beliefs, students' self-theories and personal qualities*, suggested in the USEM account of employability of Yorke and Knight (2004). Also, metacognition abilities represent a crucial component of graduates' development, since they provide important resources for individuals to be self-aware, identifying which competencies need to be developed in order to construct their own career in a constructive and sustained way. Following the example of current career management programs (Pegg, Waldock, Hendy-Isaac, & Lawton, 2012), employability opportunities could be maximize in order to effectively acquire, exhibit and use generic and discipline-specific skills in work contexts (Bridgstock, 2009).

Further research should assume a longitudinal focus, examining possible changes on the perceptions of competencies with the integration into the labor market; studying the possible impact of self-perceptions on professional outcomes (time to find a job, satisfaction, income, etc.); or also, analysing the role of the different competencies – scientific, practical, transversal, employability - in professional outcomes.

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