Generic competences in Higher Education: Studying their development in undergraduate social science studies by means of a specific methodology

JOSEP GALLIFA
Department of Psychology, Faculty of Psychology and Education Blanquerna, Ramon Llull University
e-mail: josepgr@blanquerna.url.edu

JORDI GARRIGA
Consultant, Associate Professor in Education, Ramon Llull University.
e-mail: jordi.garriga@e-motiva.com

Research into the acquisition of generic competences was carried out with the undergraduate social science programmes offered by the Ramon Llull University, Barcelona (Spain). For these programmes an innovative methodology called 'cross-course seminars' has been developed. Its focus is, amongst others, on developing generic competences. In the first place, generic competences are assessed in terms of whether or not they are perceived as important by final year students, and what the main context of acquisition was. The 'cross-course seminar' methodology, characterised in the present study, correlates more closely with the perception of the importance of competences in the professional world than in other contexts – even regular courses or competences acquired outside the university. The research aims to help achieve a better understanding of the best contexts for the acquisition of generic competences in higher education and of their importance in the professional world. A methodology for the study of competence acquisition and for the characterisation of a competence-focused educational model is thus implicitly developed. The aim of the article is to contribute to current reflections on generic competences in higher education.

Keywords: Higher education, generic competences, teaching methods, self-assessment, competence acquisition, employment, professions, Spain, Bologna Process

Introduction

This paper aims to contribute to an understanding of the relevance of generic competences in higher education. To such ends, we first present our reflections concerning the importance of such competences. Secondly, to help gain an understanding of the educational contexts which contribute to the acquisition of generic competences, we present the experience of a Spanish university with what have been called cross-course seminars. The research presented in the present paper aims in general to help develop a method by which to evaluate educational contexts from the point of view of their contribution to the acquisition of generic competences, and more specifically, to evaluate the impact of the cross-course seminar method used.

What are generic competences?

McClelland (1973) proposed the term competence after analysing human motivation and defining it as an interest that energises, guides and selects behaviours. Competence is a recurrent motivation for performance (McClelland, 1973). In the world of the professions, the concept of competence-based human resources has developed, in recent years, from a new technique to common practice. Today almost every organisation employing over 300 people uses some form of competence-based human resource management system. Major consulting companies and thousands of small consulting firms and independent

consultants have become worldwide practitioners of competence assessment and development (Boyatzis, 2008). Competences, in the broader sense of the term, can be classified into different typologies: cognitive competences that capture knowledge and understanding, functional competences that include skills, and competences in the original sense — behavioural and attitudinal, which include emotional and social competences. Meta-competences would be concerned with facilitating the acquisition of other substantive competences (Le Deist & Winterton, 2005).

Competences have emerged as an issue of general importance to European Higher Education through the Bologna Process. The objective of the European Higher Education Area is, among others, to adopt a comparable degree framework for both undergraduate and graduate studies. Different kinds of studies of European scope (e.g. the Tuning project and the DeSeCo project), suggest that, on finishing undergraduate studies, students should have acquired a series of general competences. In 2000, a group of universities took up the Bologna challenge collectively and designed a pilot project called "Tuning educational structures in Europe" (González & Wagenaar, 2008). The project aimed at identifying points of reference for generic and subject-specific competences in different fields. Tuning is centred on learning outcomes: What a learner knows or is able to demonstrate after the completion of a learning process. The Tuning project differentiates between generic competences and subject-specific competences. Three kinds of generic competences were identified (González & Wagenaar, 2008):

- Instrumental competences: cognitive abilities, methodological capacities, technological skills, linguistic skills.
- Interpersonal competences: individual abilities such as social skills (social interaction and cooperation).
- Systemic competences: abilities and skills concerning whole systems (combination of understanding, sensibility and knowledge). An example of this is the ability to plan change or design new systems.

The generic competences that are important include the capacity to learn, to apply knowledge to practice, adapt to new situations, assume responsibility for quality, be able to work autonomously and as a team, assume leadership and employ research skills.

The acquisition of general competences, especially the interpersonal and systemic ones, is closely related to the objectives of ethical learning: The training of professionals and citizens who build their knowledge independently and act responsibly, freely and in a committed manner (Boni & Lozano, 2007). These general competences can also be called transferable skills or transversal competences. Their development is one of the basic objectives that the promoters of the ongoing curricular reforms, who are trying to harmonise the European Higher Education Area, emphasise. The new trends point to the need to specifically define competences as learning outcomes in each programme, including transversal competences (Baños & Pérez, 2005). In the context of the Bologna process, some authors present a clarification of the concept of competences related with typologies of knowledge and, among them, they include transversal or generic competences (Le Deist & Winterton, 2005; Winterton, Delamare-Le Deist & Stringfellow, 2006).

Why are generic competences important in higher education?

Besides the aforementioned European trend, over the past decade, in the US, state legislatures have experienced increasing pressure to hold higher education accountable for student learning (Klein *et al*., 2005), and learning in higher education has an important component of learning to develop a future profession. On the other hand, according to Allen *et al.* (2005), in recent years, three major trends have been identified that affect the demands faced by higher education graduates; one trend is the increasing emphasis that has been placed on education and training, which is seen by many as the most important factor affecting economic growth. The term *knowledge society* has been coined to indicate not only the expansion of participation in higher education or of knowledge-intensive or high-technology sectors of the economy, but also a situation in which the characteristics of work organisations across the world change under the influence of the increasing importance of knowledge. Another trend relates to changes in labour market processes through the concept of the transitional labour market that indicates how, in modern society, the demarcation

lines between work, leisure time, education and care have been blurred, leading to increased mobility and flexibility patterns. The third trend relates to the internationalisation and globalisation of product and labour markets. The aforementioned trends give rise to new demands on the competences that individuals need to be equipped with. Higher education graduates have long been expected to become experts in their own professional domain. However, the dynamic nature of the labour market and increased mobility also imply a much higher degree of flexibility and the possession of broad generic competences to ensure employability in a range of situations over an individual's entire career (Allen & van der Velden, 2005). Generic competences are important in a university context where the traditional professional culture of open intellectual enquiry and debate has been replaced with an institutional stress on performativity, as evidenced by the emergence of an emphasis on measured outputs, and on strategic planning, performance indicators, quality assurance measures and academic audits. In such an environment, the role of higher education for the economy is seen by governments as having greater importance, to the extent that higher education has become the new flagship in the policy fleet of governments around the world. Universities are seen as a key driver in the knowledge economy and, as a consequence, higher education institutions have been encouraged to develop links with industry and business in a series of new venture partnerships (Olssen & Peters, 2005). Another related issue is over-education, understood as an oversupply of students for the labour market, a problem that some systems are confronting. The circumstances that promote this situation are (Sutherland, 2008):

- The marked decline in university funding (perhaps resulting in some studentsfailing to acquire the skill levels associated to students in previous decades)
- The increase in the supply of university places (sometimes in courseprogrammes not conventionally associated to "higher" education)
- To fill these places, there has been a tendency for some institutions to recruit from a lower part of the ability distribution
- The continued increase in the number of graduates entering the labour market.

There are two possible consequences of over-education. One is the tendency for average rates of return to decline. The other is for graduates to be employed in non-graduate jobs. There is some evidence of both (Sutherland, 2008), and thus individuals in possession of generic competences will find themselves better placed when seeking employment. Mora *et al.* (2007) found that a surplus of qualifications and competences at work is one of the most relevant causes of dissatisfaction among higher education graduates. They tested this outcome through three different variables: Use of knowledge acquired during studies, the match between education level and job level, and the comparison between competences acquired and competences needed in the job. In all three cases the results showed a high level of disappointment when graduates could not use their knowledge and competences at work. It is surprising, to some extent, that the opposite situation (being undereducated or having lower competences than required) increases a graduate's level of job satisfaction. Apparently the feeling of being undereducated or undercompetent does not bother young European graduates, probably because they find themselves in a better position than they had anticipated and enjoying unexpected extra benefits (Mora, García-Aracil & Vila, 2007). Other findings suggest that generic competences, like group functioning, relevant work experience and managerial experience, are predictive for labour market outcomes, like employment opportunities and quality of the job (Semeijn *et al.*, 2006).

What generic competences should be acquired by students?

Today's graduates from the higher education system are expected, if nothing more, to be more or less competent in the following five areas (Allen & van der Velden, 2005):

- Professional expertise. Higher education graduates are expected to become experts in their professional field. Expertise implies, first and foremost, a high degree of mastery of the knowledge and skills that are relevant in one's own domain of work. A second characteristic feature of experts is an ability to use this mastery to diagnose and solve complex problems in their own area of work.

- Functional flexibility. The world of work is dynamic. Rapid developments in technology, markets, organisations and relevant knowledge make it necessary that higher education graduates are able to take up diverse challenges, many not directly related to their own field of expertise, and to quickly acquire new knowledge. They must be broadly employable and have the ability to cope with changes in the job content and mobility within the organisation to another job or mobility to other organisations. In order to be flexible, graduates obviously need a well-developed ability to adapt to changes in the environment, for example by quickly acquiring new knowledge and skills, by possessing a large reserve of general or multidisciplinary skills and an ability to cope with change.
- Innovation and knowledge management. In many sectors of the economy, employers look to highly educated workers to contribute to expanding and improving the way goods and services are provided. This relates not only to the capacity for innovation of higher education graduates, but also their ability to create an environment in which knowledge production and diffusion is optimised. There are many ways in which graduates may contribute. First of all, graduates who possess a high degree of innovative capacity, creativity, curiosity, willingness and ability to question the status quo and so on, can directly contribute to the development of new knowledge and ideas for the organisation to use. Secondly, since not all innovations need to be developed within the firm or organisation itself, graduates can contribute to innovation by gaining access to new ideas developed elsewhere. For this reason, an ability to notice new opportunities and access relevant networks as well as the possession of networking skills, ICT skills, foreign language abilities and communication skills in general, may prove of crucial importance when seeking to introduce new ideas into an organisation.
- Mobilisation of human resources. Higher education graduates are expected to have the ability to effectively mobilise their own competences and actively steer and direct their own work as well as that of others. Several aspects can be distinguished. First of all, graduates need to possess a strongly developed ability to mobilise and make use of their own competencies, which implies an ability to work autonomously when working alone, to cooperate fruitfully with others when working in a team, to manage their own skills, and to be motivated intrinsically by the work at hand. Secondly, graduates may be called upon to mobilise the capacities of others. This is associated with leadership skills, but the concept is broader, involving an ability to communicate ideas and inspire others, to plan and monitor work processes, and where necessary be assertive and take decisive action.
- International orientation: Globalisation and the blurring of national borders increase the importance of a strong international orientation. This requires not only a good command of foreign languages, but also an ability to understand and empathise with other cultures and a willingness and ability to appreciate the limitations of one's own national context; in short, the development of intercultural competences. This is an area which has most particularly been articulated in the European countries (Robertson, 2006).

The aforementioned demands are by no means mutually exclusive (Allen & Van der Velden, 2005) and may appear somewhat idealistic, but here they have been identified as a trend. Said demands are closely related to generic competences.

More specifically, studies were carried out regarding generic competences. Graduates from three schools were surveyed to determine their perception of the contribution that the learning contexts of the university, work placement and postgraduate employment had made to the development of their generic skills (Crebert *et al.*, 2004). All graduates involved in the project had experienced work placement as a formal part of their undergraduate studies. The findings showed that while graduates recognised the contribution that the university had made to their generic skills development, they greatly valued the experience of learning in the workplace during placement and subsequently in employment. The importance of team work, being given responsibility, and collaborative learning emerged as the most important factors for effective learning in the three contexts under consideration (Crebert *et al.*, 2004). In another study, labour market rewards for a number of required human capital competences were analysed in a sample of young European higher education graduates. Factor analysis was applied to classify competences by jobs into eight groups: participative, methodological, specialised, organisational, rule-applying, physical, generic and socio-emotional competences. Estimates of

the total reward for competences were obtained from conventional wage regression, whereas estimates of total reward were derived in terms of job satisfaction through regression. Explanatory variables included personal characteristics, job attributes, occupational titles, fields of study, type of higher education institution and country dummies. The outcome with regard to wage rewards showed that jobs with a higher requirement for participative and methodological competences are better paid; conversely, jobs with a higher requirement for organisational, rule-applying and physical competences are worse paid. The results on total rewards suggest that jobs with a higher requirement for competences increase graduates' satisfaction, the only exception being in the case of rule-applying competences (Garcia-Aracil, Mora & Vila, 2004). In another study, a formative evaluation in the context of a university, involving different stakeholders with the implementation of generic competencies, contributed to the development of proposals to improve ongoing educational practices (Van der Linden & Mendonca, 2006).

It is easy to derive a classification of generic competences since meaningful coincidences are to be found between the list of generic competences offered by Tuning (González & Wagenaar, 2008) and other classifications of generic competences. Spencer and Spencer (1993), following McClelland's approach, presented a set of competences (Spencer & Spencer, 1993; Spencer, McClelland & Spencer, 1997) that are included in the ISFOL competence list (Angeli, 1994; 1997). The ISFOL list also includes the identified managerial competences (Thornton & Byham, 1982) and 16 developmental needs of managers (McCauley, Lombardo & Usher, 1989). Similarities with other lists can also be found (Echeverría, 2002; Boyatzis & Goleman, 2001).

The seminar experience at Ramon Llull University as a systematic approach to the acquisition of generic competences

The work on generic competences in which the author has been involved was carried out at the Ramon Llull University in Barcelona (Spain). The Ramon Llull University is a private university that was created by the merging of several separate higher education institutions. Some of these institutions are related to the Society of Jesus (ESADE, IQS Chemical Institute), others to the Diocese (Blanquerna in Social Studies and the Faculty of Philosophy), and to the Lasallian Brothers (Technology and Architecture). The joining of these institutions resulted in the first private university in Spain, and one of the most relevant. The organisational stucture is federal (as a system of government, not state university), and affords great independance to its federated institutions in such issues as student recruitment, curricula, labour market professional placement, and so on. Each institution has its own brand and prestige in its field (Gallifa, 2009).

A characteristic method of focussing education on student learning was established at the Ramon Llull University a few years before the Bologna process. Since 1991, this kind of innovative methodological approach has been implemented in its Humanities and Social Science Studies. Every year over 6,000 students participate in such methodology.

Cross-course seminars may be described as the simultaneous learning setting in which a teacher-tutor meets a group of 12-15 students in three 90-minute sessions per week each week of the semester. In the scheduled time all the students enrolled in a year have cross-course seminar sessions, each team with its corresponding teacher-tutor. From the point of view of student, participation in one cross-course seminar per semester, each undergraduate year is compulsory and subject to evaluation. Each semester the students are randomly assigned to a new cross-course seminar, under a new teacher-tutor. Therefore, during the course of a four-year undergraduate programme, the student will have eight cross-course seminars (one per semester), working with eight different teams and eight different tutors. Such a context creates a special, characteristic educational environment. The seminars offer a rather particular educational environment which enhances direct teacher-student interaction, requires the participation of all and allows for the development of different techniques (team work and cooperative learning, case and problem-based learning or portfolio techniques). The content and activities to be developed in this environment are decided upon by the team of teacher-tutors involved in a particular semester. Examples of seminar activities are: work placement supervision, implementing research projects or learning professional techniques. The general objectives of seminar work are as follows (Lopez & Gallifa, 2008): To promote critical reflection on university work; to promote capacity for interdisciplinary synthesis and application of knowledge into

professional practice; to improve cooperation, respect, dialogue, and capacity for team work; to promote capacity for research. This methodology creates a special kind of educational environment and a way of understanding higher education. All the dimensions of these cross-course seminars are related with developing generic competences. López and Gallifa (2008) explain how the work of the cross-course seminar is aimed at offering students a general, holistic, and complementary vision, in contrast to the specialised outlook offered by their regular courses. This is done by facilitating the learning and application of personal and group work strategies, the integration of knowledge, interdisciplinary work, the construction of group thinking and critical reflection. The seminars also promote emotional and social competences (Oberst *et al.*, 2009) related to subjective well-being (Bar-On, 2005).

The learning environment is very relevant since it has an effect on workplace competences and training, according to graduates (Vaatstra & De Vries, 2007). Mora (2007) found that in European countries the educational experience was both directly and indirectly related to later job satisfaction and that such links endured at least four years after graduation. From the point of view of the present study it is relevant to point out that those graduates who had a positive educational experience, with an emphasis on practical learning and the provision of work practice during their studies, are more likely to feel satisfied at work afterwards than graduates with poorer educational experiences (Mora *et al.*, 2007). On the other hand, a competence-based curriculum may bring together university staff, students and representatives of the world of work. The common goal is the improved training of competent professionals, taking into account the learning process of the students, their professional practices and the specific difficulties they encounter (Van der Linden & Mendonca, 2006).

Objectives

The main objective of this research work is to develop a methodology for the evaluation of educational environments, in terms of the acquisition of generic competences by final-year undergraduate students. By the time students are in the last semester of their final year they will have obtained a comprehensive perspective of their undergraduate training and are in a good position to evaluate the training received.

The secondary objective was to specifically evaluate the social science programmes given at the Ramon Llull University to be able to analyse the impact cross-course seminar methodology has on generic competence acquisition. We wished to discover whether generic competences were seen as important for professional life, and whether or not students consider that they have acquired such competences in the context of their seminars. Another issue addressed by the research was the impact on competence acquisition of the seminar approach when compared to that of regular courses in such competences. The students' perception of their external acquisition of competences will provide interesting information.

The third objective was to understand and characterise the cross-course seminar methodology from the point of view of generic competences, and discover which of the traits of seminars are the most meaningful".

Methods

The method developed is based on the perception of the final-year student. The perception of the student is appropriate both for informing on competence acquisition and on the contribution each different educational context makes to the acquisition of competences. Other researchers have similarly employed the perception of the graduates (Vaatstra & De Vries, 2007; Mora *et al.*, 2007). Our aim is not to evaluate the individual student but the educational context. The perception of the final-year student is not the only output of higher education, but it is certainly one that may help us attain a better understanding of the dynamics of generic competence acquisition in higher education.

Questionnaire

We developed a questionnaire covering a list of generic competences. The list of competences was created by combining the additional competences employed in the cited approaches (González & Wagenaar, 2008; Spencer & Spencer, 1993; Spencer, McClelland & Spencer, 1997; Angeli, 1994; 1997; Thornton & Byham, 1982; McCauley, Lombardo & Usher, 1989). The final questionnaire comprised the following list of competences:

Table 1: Competences

Code	Competence	Spencer & Spencer	ISFOL (Angeli)	Thornton & Byham	McCauley, Lombardo & Usher	Tuning
1	Interpersonal skills	X	Basic		X	X
2	Communicate no experts		Technical			
3	Diversity and multiculturalism		Transversal			X
4	Customer guidance	X	Technical			
5	Analysis and synthesis	X	Basic	X		X
6	Knowledge in practice		Technical			X
7	Knowledge in multiculturalism		Transversal			X
8	Knowledge of profession		Technical	X		X
9	Computer skills		Basic			X
10	Problem-solving		Basic			X
11	Knowledge cultures		Basic			
12	Mathematical tools		Basic			
13	IT modelling		Basic			
14	Mathematical modelling		Basic			
15	Professional experience		Basic			
16	Problems company		Technical	X		
17	Problems external		Technical	X		
18	Learning capacity		Transversal		X	X
19	Critical and self-critical		Transversal			X
20	Adapt to new situations		Basic	X		X
21	Work alone		Technical			X
22	Ethical commitment		Transversal			X
23	Self-conrol under pressure	X	Transversal		X	
24	Self-confidence		Transversal			
25	Reaction to failure		Transversal			
26	Flexibility	X	Transversal		X	
27	Tolerance to stress		Transversal	X		
28	Work/life balance		Transversal		X	
29	Sensitivity		Transversal	X	X	
30	Self-awareness skills		Transversal		X	
31	Good sense		Transversal	X		
32	Independence		Transversal	X		
33	Resourcefulness		Transversal		X	
34	Tenacity		Transversal	X		
35	Energy		Transversal	X		
36	Breadth of interests		Transversal	X		
37	Decision-making		Technical	X	X	X
38	Teamwork	X	Technical		X	X
39	Leadership	X	Transversal			X
40	Interdisciplinary team		Transversal		X	X
41	International context		Transversal			X
42	Development of others	X	Transversal	X	X	

Code	Competence	Spencer & Spencer	ISFOL (Angeli)	Thornton & Byham	McCauley, Lombardo & Usher	Tuning
43	People management		Transversal		X	
44	Negotiating skills		Technical	X		
45	Accepting risks		Transversal	X		
46	Delegation		Transversal	X		
47	Lead people with talent		Transversal		X	
48	Control		Technical	X		
49	Authority		Transversal	X		
50	Oral and written communication		Basic	X		X
51	Oral and written in foreign language		Transversal			X
52	Impact on others	X	Transversal			
53	Networking	X	Transversal			
54	Organisational awareness	X	Transversal			
55	Personal and institutional responsibility		Transversal			
56	Diagnosis environment and process		Technical			
57	To do the right thing		Transversal		X	
58	Planning		Transversal	X		X
59	Research		Technical			X
60	Information management skills	X	Basic			X
61	Creativity		Transversal	X		X
62	Projecting		Technical			X
63	Initiative and innovative spirit	X	Transversal	X		X
64	Quality, order, precision	X	Technical			
65	Results orientation	X	Technical	X		
66	Preparedness to act		Transversal			X

The questionnaire was created in the form of a Lickert scale with four items per competence. The first item refers to the extent to which a particular competence is relevant to the chosen profession of the student (the students are in their final year — second semester — and very close to beginning their professional career). The second item asks whether, and to what extent, the competence was mainly acquired as a result of the cross-course seminars. The third item asks the same, but with respect to the student's regular courses. The fourth and final item enquires whether the student already had the competence before entering higher education or had acquired it outside of the university.

We did not enquire whether the students had acquired each individual competence. It would obviously be interesting to ascertain that, but we believed that if we were to do so, the student would be more likely to feel that she or he was being individually evaluated. The understandable desire to do well in the questionnaire and the possibility of feeling the need to over-represent skills and competences would make the results harder to interpret.

The questionnaire comprised a list of competences, each having four Lickert scales, appropriately adapted in terms of the importance/performance questions.

The questionnaire was anonymous and students were asked at the end for explicit signed permission to report the findings.

Sample

The sample was composed of social studies students in their fourth year at the Ramon Llull University. We selected two different specialities in order to minimise any influence an individual field may have had. We chose the areas of clinical psychology and organisational psychology. We chose psychology as we believed the students would have no trouble understanding the language of generic competences since their course work includes such content. Thus we believed they would answer the questionnaire with greater precision. With one of the professional fields having a more clinical and individual orientation while the other a more organisational approach, we believed there would be minimum inter-field variation and so the outcomes obtained would be field-independent results.

The size of the sample was of 167 students, with 124 from a clinical major speciality and 43 from organisational psychology.

Methods employed for the analysis of quantitative data

When the mean for each item of each competence is 3.5 or higher in a particular situation, we consider the item to express importance or performance. Pilot studies showed that when the mean was near or over 3.5, it was equivalent to a median of 4 or 5, or a majority of scores of over 4. That is, agreement or total agreement with the situation tested.

We applied a factor analysis (principal component analysis and varimax rotation) to the seminar scores to understand the underlying factors of the seminar experience. We also analysed the items with high loadings for each of the factors, in order to characterise this particular experience

Results

Importance of generic competences for professions

Only three items in the whole questionnaire had a mean of under 3. These were: Mathematical tools (2.82), IT modelling (2.74), and Mathematical modelling (2). 89.4% of the items had means of over 3.5. Thus almost all of the items were considered important for the professions. No differences were found between the two groups.

Acquisition of competences outside the university

Students say that 72% of their competences were mainly acquired outside of the university. With regard to the remainder, we are not sure whether the students had acquired these competences or not since scores below 3.5 have no clear meaning (they may have been acquired at university or may not yet have been acquired). With regard to the above, we found the following list of competences:

Table 2: The competence was acquired outside the university

31. Good sense	4,59
50. Oral and written communication	4,59
29. Sensitivity	4,51
1. Interpersonal skils	4,46
35. Energy	4,36
66. Preparedness to act	4,35
26. Flexibility	4,31
27. Tolerance to stress	4,23
24. Self-confidence	4,21
21. Work alone	4,18
32. Independence	4,18

28. Work/life balance	4,16
3. Diversty and multiculturalism	4,15
58. Planning	4,13
61. Creativity	4,13
63. Initiative and innovative spirit	4,13
22. Ethical commitment	4,10
53. Networking	4,10
20. Adapt to new situations	4,08
51. Oral and written in foreign language	4,08
18. Learning capacity	4,05
19. Critical and self-critical	4,05
30. Self-awareness skills	4,05
25. Reaction to failure	4,05
65. Results orientation	4,03
2. Comunicate no experts	4,03
36. Breadth of interests	4,03
10. Problem solving	4,00
34. Tenacity	4,00
9. Computer skills	3,97
33. Resourcefulness	3,97
64. Quality, order, precision	3,97
37. Decision-making	3,92
23. Self-conrol under pressure	3,87
11. Knowledge cultures	3,85
38. Teamwork	3,85
57. To do the right thing	3,82
48. Control	3,79
55. Personal and institutional responsibility	3,77
52. Impact on others	3,72
40. Interdisciplinary team	3,62
42. Development of others	3,56
60. Information management skills	3,56
59. Research	3,51
6. Knowledge in practice	3,50
5. Analysis and synthesis	3,46
44. Negotiating skills	3,46
45. Accepting risks	3,42
7. Knowledge in multiculturalism	3,35
12. Mathematical tools	3,29
62. Projecting	3,28
39. Leadership	3,21
46. Delegation	3,21
43. People management	3,15
56. Diagnosis environment and process	3,11
15. Professional experience	3,08
49. Authority	3,03
4. Customer guidance	2,87
54. Organisational awareness	2,82

41. International context	2,79
17. Problems external	2,45
47. Lead people with talent	2,44
16. Problems company	2,38
13. IT modelling	2,26
8. Knowledge of profession	2,18
14. Mathematical modeling	1,92

Competences mainly acquired through regular courses

We found the following list of competences had mainly been acquired through regular courses:

Table 3: The competence was acquired in the courses

8. Knowledge of profession	4,26
22. Ethical commitment	3,82
38. Teamwork	3,74
5. Analysis and synthesis	3,67
59. Research	3,62
36. Breadth of interests	3,56
60. Information management skills	3,56
33. Resourcefulness	3,49
56. Diagnosis environment and process	3,42

We see 9 of the 66 competences, that is, 13% of the total list. This means that, although competences are valued as important, only a few are perceived as mainly having been acquired through regular courses.

Competences mainly acquired in the cross-course seminars

The following list features the competences students believe they acquired through the seminars:

Table 4: The competence was acquired in Seminars

38. Teamwork	4,67
6. Knowledge in practice	4,11
59. Research	4,10
8. Knowledge of profession	4,08
60. Information management skills	4,03
4. Customer guidance	3,92
33. Resourcefulness	3,92
36. Breadth of interests	3,82
62. Projecting	3,79
5. Analysis and synthesis	3,72
66. Preparedness to act	3,68
61. Creativity	3,67
40. Interdisciplinary team	3,64
37. Decision making	3,62
19. Critical and self-critical	3,59
10. Problem solving	3,56
26. Flexibility	3,49
42. Development of others	3,49

58. Planning	3,49
30. Self-awareness skills	3,46
56. Diagnosis environment and process	3,42
20. Adapt new situations	3,31
50. Oral and writen communication	3,31
65. Results orientation	3,29
23. Self conrol under pressure	3,28
64. Quality, order, precision	3,28
31. Good sense	3,26
24. Self-confidence	3,23
48. Control	3,23
22. Ethical commitment	3,21
63. Initiative and innovative spirit	3,21
43. People management	3,15
3. Diversty and multiculturalism	3,13
57. To do the right thing	3,11
15. Professional experience	3,00
27. Tolerance to stress	3,00
29. Sensitivity	2,95
7. Knowledge in multiculturalism	2,95
34. Tenacity	2,92
44. Negotiating skills	2,92
25. Reaction to failure	2,92
1. Interpersonal skils	2,90
21. Work alone	2,90
18. Learning capacity	2,87
39. Leadership	2,82
55. Personal and institutional responsibility	2,77
45. Accepting risks	2,76
52. Impact on others	2,69
35. Energy	2,67
2. Communicate to experts	2,59
32. Independence	2,56
46. Delegation	2,54
17. Problems external	2,50
16. Problems company	2,43
54. Organisational awareness	2,38
11. Knowledge cultures	2,28
53. Networking	2,28
49. Authority	2,15
28. Work/life balance	2,11
41. International context	2,08
47. Lead people with talent	2,08
13. IT modelling	1,95
9. Computer skills	1,67
51. Oral and written in foreign language	1,56
12. Mathematical tools	1,55
14. Mathematical modeling	1,51

To study the possibility of the situations overlapping, we correlated scores of importance with each situation and obtained significant correlations in all three cases: The Pearson correlation of the "importance of competence" and "seminar acquisition" was 0.70; the correlation of the "importance of the competence" and "acquired in regular courses" was 0.42; and the correlation of the "importance of the competence" and "acquired outside the university" was 0.62. This means that the importance of competences correlated with the cross-course seminar experience is greater than that related to any of the other situations. All three correlations were statistically significant.

Main traits of the seminar experience

To characterise the seminar experience, we factor-analysed the seminar scores with means of over 3.5, analysing the main components of the matrix. We obtained 3 factors which account for 52% of variance. Below we have presented the results of the extraction and varimax rotation:

Table 5: Factor analysis

Total variance explained

Component	Initial values			Sums of the extraction's squared saturations			Sums of the extraction's squared saturations of the rotation		
	Total	% of variance	% accumulated	Total	% of variance	% accumulated	Total	% of variance	% accumulated
1	6,797	30,895	30,895	6,797	30,895	30,895	4,442	20,190	20,190
2	2,701	12,279	43,174	2,701	12,279	43,174	3,617	16,442	36,632
3	2,082	9,464	52,638	2,082	9,464	52,638	3,521	16,006	52,638

Matrix of components

	Component		
	1	2	3
VAR00004	,318	,540	-,446
VAR00005	,488	,665	,210
VAR00006	,525	,265	-,273
VAR00008	,270	,584	,070
VAR00010	,627	,264	-,217
VAR00019	,602	,000	,113
VAR00026	,674	-,394	-,446
VAR00030	,550	,054	-,041
VAR00033	,686	,275	-,099
VAR00034	,676	-,141	,113
VAR00036	,623	,178	-,014
VAR00037	,632	,201	,159
VAR00038	,557	,130	,114
VAR00040	,548	,064	-,251
VAR00042	,540	-,135	-,537
VAR00056	,409	-,369	-,279
VAR00058	,445	,010	,625

	Component		
	1	**2**	**3**
VAR00059	,345	-,219	,589
VAR00060	,676	,000	,445
VAR00061	,713	-,268	,255
VAR00062	,483	-,669	-,095
VAR00066	,546	-,647	,026

Matrix of rotated components

	Component		
	1	**2**	**3**
VAR00004	,721	-,030	-,266
VAR00005	,699	-,336	,351
VAR00006	,617	,197	,028
VAR00008	,546	-,323	,127
VAR00010	,666	,223	,130
VAR00019	,362	,252	,425
VAR00026	,333	,833	,057
VAR00030	,415	,257	,262
VAR00033	,673	,191	,259
VAR00034	,317	,393	,484
VAR00036	,538	,191	,307
VAR00037	,502	,099	,451
VAR00038	,419	,134	,383
VAR00040	,491	,346	,086
VAR00042	,447	,618	-,126
VAR00056	,118	,604	,045
VAR00058	,094	-,069	,758
VAR00059	-,113	,064	,705
VAR00060	,301	,137	,739
VAR00061	,210	,439	,638
VAR00062	-,095	,776	,279
VAR00066	-,078	,737	,410

Method of rotation: Varimax normalization with Kaiser.

Rotation converged in 5 iteractions.

After studying the loadings in the rotated components for each factor, we labelled each factor obtained as follows:

- First factor: Cognitive instruments and contextualised knowledge, that is, the ability to think.
- Second factor: Capacities to model the context and for leadership, that is, the ability to produce change.
- Third factor: Capacities for creating information.

The competences with positive and significant scores in the three factors (that is, possessing the three components) are: "being critical and self-critical", "self-consciousness", "having resources", "breadth of interests", "teamwork", "management of information" and "creativity". These are the items common to the three components that represent the core of the competences developed.

We found no meaningful differences between the specialty studied in any of the different dimensions.

Conclusions

Students value generic competences as important in social science professions. The results coincide in the two specialties studied. The results are highly coincident with prior research, especially the Tuning project (González & Wagenaar, 2008), in which both students and employers strongly agreed on the importance they attached to generic competences.

Despite the small scale of our study, it goes beyond previous work in representing the reality that, from the student's perception, many generic competences are seen as having been mainly acquired prior to or outside of the university. The result points to the need for certain university reformers to acquire a degree of humility with respect to generic competences. Generic competences are important but, even in a context in which a great institutional effort has been made and a specific plan developed for competence acquisition, the students perceive that many or part of their generic competences are acquired prior to or outside of the university.

One of the expected findings was that regular courses, even in a very supportive and personal environment, are poor in terms of the acquisition of generic competences. Only those competences more closely related to cognitive capacities or directly related to the content of the studies are referred to as having been mainly acquired in regular courses. There is one interpretation this brings readily to mind: Regular courses in general do not focus on competence acquisition, at least in the context studied. The way this conclusion clashes with the importance attached to generic competences by both students and employers (González & Wagenaar, 2008), accounts for the lack of harmonisation between training and employment found in some areas of study, something that greatly influences the level of satisfaction felt by graduates (Mora *et al.*, 2007)

The good news is that all hope is not lost. It is possible to develop special methodologies aimed at developing generic competences. In this paper, the cross-course seminars methodology has been presented and assessed by students in terms of its ability to promote generic competences. In the eyes of the student, not only has the seminar methodology contributed to the acquisition of generic competences, we must also bear in mind the fact that these competences correlated highly and significantly with the competences perceived as important by the student. Previous research emphasises the coincidence of the importance attached both by students and employers to generic competences (González & Wagenaar, 2008), and in our study these competences showed a significantly higher correlation with the cross-course seminar experience than with regular courses or even the learning of competences outside of the university. Our findings help give to the methodology evaluated a particular profile in the development of generic competences in higher education environments. Furthermore, the competences that the students assessed as being acquired in the seminars, and included in Table 4, are similar to those previous research has revealed as required competences in the current demands made by the professions (Boyatzis, 2008; Allen & van der Velden, 2005), with small variations; for example, we found that internationalisation, although important, was not perceived as being developed in the seminars. Other research carried out in Spain likewise attaches importance to the aforementioned list of generic competences (Boni & Lozano, 2007; Fundación Universidad-Empresa, 2006).

The characterisation of the seminar experience through factor analysis resulted in an interesting finding. Three factors were identified: cognitive instruments and contextualised knowledge (ability to think); capacities to model the context and for leadership (ability to produce change); and capacities for creating information. There is a meaningful similarity between these three factors and the instrumental competences (cognitive abilities, methodological capacities, technological skills, linguistic skills): interpersonal competences, individual abilities like social skills (social interaction and cooperation) and

systemic competences, and abilities and skills concerning whole systems (combination of understanding, sensibility and knowledge) of the Tuning project (González & Wagenaar, 2008). Seminar methodology promotes the competences that European employers and students believe to be important in European higher education-related jobs.

One general, implicit conclusion of the present research is that a special setting and time is required for the learning of generic competences in the context of higher education — at least within the context studied. Regular courses are not enough, and it is only by having the promotion of these competences as a core objective that students can identify the institutional efforts made to move in the direction of competences valued as important for the professional world.

A method for evaluating the acquisition of generic competences, based on the perceptions of final year students, has been developed and applied for evaluating the contribution different educational contexts may make to the acquisition of generic competences. The trial was carried out in a particular context, one in which a systematic effort, called cross-course seminar methodology, was specifically characterised. However, it may also be applied to other contexts. Finally, we hope that our reflections and research work contribute to a better understanding of the dynamics of generic competence acquisition and devlopment in higher education

References

Allen J & Van der Velden R 2005. *The flexible professional in the knowledge society: Conceptual framework of the REFLEX project*. Maastricht: Researchcentrum voor Onderwijs en Arbeidsmarkt.

Angeli F 1997. *Unità capitalizzabili e crediti formativi*. Roma: Isfol.

Angeli F 1994. *Competence trasversali e comportamento organizzativo.* Roma: Isfol.

Baños JE & Pérez J 2005. Cómo fomentar las competencias transversales en los estudios de ciencias de la salud: Una propuesta de actividades. *Educ.Méd,* **8(4)**:40-49.

Bar-On R 2005. The impact of emotional intelligence on subjective well-being. *Perspectives in Education,* **23(2)**:41-62.

Boni A & Lozano JF 2007. The generic competences: An opportunity for ethical learning in the European convergence in higher education. *Higher Education,* **54(6)**:819-831.

Boyatzis RE 2008. Competencies in the 21st century. *Journal of Management Development,* **27(1)**:5-12.

Boyatzis RE & Goleman D 2001. *The emotional competence inventory*. Cleveland: Case-Western-Reserve University edition.

Crebert G, Bates M, Bell B, Patrick CJ & Cragnolini V 2004. Developing generic skills at university, during work placement and in employment: Graduates' perceptions. *Higher Education Research & Development*, **23(2)**:147-165.

Echeverría B 2002. Gestión de la competencia de acción profesional. *Revista De Investigación Educativa,* **20(1)**:7-43.

Fundación Universidad-Empresa 2006. *Guía de las empresas que ofrecen empleo 2006-2007.* Madrid: Fundación Universidad-Empresa.

Gallifa J 2009. An approach to find out student's motives and influences in the selection of studies and University. Results from six years of continuing institutional research in a multi-campus system in Spain. *Tertiary Education and Management,* **15(2)**:173-191.

Garcia-Aracil A, Mora JG & Vila LE 2004. The rewards of human capital competences for young European higher education graduates. *Tertiary Education and Management,* **10(4)**:287-305.

González J & Wagenaar R 2008. T*uning educational structures in Europe. final report*. Retrieved from http://tuning.unideusto.org/tuningeu/images/stories/template/General_Brochure_final_version.pdf on 24 August 2008.

Klein SP, Kuh G, Chun M, Hamilton L & Shavelson R 2005. An approach to measuring cognitive outcomes across higher education institutions. *Research in Higher Education*, **46(3)**:251-276.

Le Deist FD & Winterton J 2005. What is competence? *Human Resource Development International*, **8(1)**:27-46.

Lopez P & Gallifa J 2008. Cognitive Complexity's improvement in higher education and seminar methodology. *Higher Education in Europe*, **33(4)**:471-482.

McCauley CD, Lombardo MM & Usher CJ 1989. Diagnosing management development needs: An instrument based on how managers develop. *Journal of Management*, **15(3)**:389-403.

McClelland DC 1973. Testing for competence rather than for "intelligence". *The American Psychologist,* **28(1)**:1-14.

Mora JG, García-Aracil A & Vila LE 2007. Job satisfaction among young European higher education graduates. *Higher Education,* **53(1)**:29-59.

Oberst U, Gallifa J, Farriols N, Vilaregut A 2009. Training emotional and social competences in Higher Education: The seminar methodology. *Higher Education in Europe,* **34(3-4)**:523-533.

Olssen M & Peters MA 2005. Neoliberalism, higher education and the knowledge economy: From the free market to knowledge capitalism. *Journal of Education Policy,* **20(3)**:313-345.

Robertson S 2006. The politics of constructing (a competitive) Europe(an) through internationalising higher education: Strategy, structures, subjects: Research article. *Perspectives in Education,* **24(4)**:29-43.

Semeijn J, Velden R, Heijke H, Vleuten C & Boshuizen H 2006. Competence indicators in academic education and early labour market success of graduates in health sciences. *Journal of Education and Work*, **19(4)**:383-413.

Spencer LM & Spencer SM 1993. *Competence at work: Models for superior performance.* New York: Wiley.

Spencer LM, McClelland DC & Spencer SM 1997. *Competency assessment methods: History and state of the art.* Boston: Hay/McBer.

Sutherland J 2008. Higher education, the graduate and the labour market: From Robbins to Dearing. *Education Training,* **50(1)**:47-51.

Thornton GC & Byham WC 1982. *Assessment centers and managerial performance.* New York: Academic Press.

Vaatstra R & De Vries R 2007. The effect of the learning environment on competences and training for the workplace according to graduates. *Higher Education*, **53(7)**:335-357.

Van der Linden J & Mendonca M 2006. From competence-based teaching to competence based learning: The case of generic competencies in the faculty of education at the Eduardo Mondlane University in Mozambique. *Perspectives in Education,* **24(3)**:37-51.

Winterton J, Delamare-Le Deist F & Stringfellow E 2006. *Typology of knowledge, skills and competences: Clarification of the concept and prototype*. Brussels: Office for Official Publications of the European Communities.