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Differences in the socio-emotional competency profile in university students from different disciplinary areas

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Abstract

Introduction. The main objective of this paper is to establish a profile of socio-emotional competencies characteristic of a sample of students from each of the big academic areas in higher education: legal sciences, social sciences, education, humanities, science and technology, and health. An additional objective was to analyse differences between these fields.

Method. The study was carried out on a large sample (N=608) of university students from 14 different degree programs at the University of Alicante (Spain). Assessment was taken using different measures of emotional intelligence, such as TMMS and EQ-i.

Results. Results of the one-way analysis of variance among the different scientific fields revealed that significant differences appear in practically all aspects of Emotional Intelligence, except for the stress management variable.

Discussion. Based on these results, implications are drawn for developing generic socio-emotional competencies in the framework of the European Space for Higher Education.

***Key words**:* Emotional intelligence, university students, differences in the socio-emotional competency profile, implications for developing generic competencies

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Resumen

Introducción. El presente trabajo tiene como objetivo principal establecer el perfil de competencias socio-emocionales característico de una muestra de estudiantes pertenecientes a cada uno de los grandes ámbitos académicos: ciencias jurídicas, ciencias sociales, educación, humanidades, ciencia y tecnología, y salud. Así como analizar las diferencias existentes entre estos ámbitos.

Método. El estudio se realizó sobre una muestra amplia (N=608) de estudiantes universitarios pertenecientes a 14 titulaciones de la Universidad de Alicante (España). Los instrumentos de evaluación utilizados incluyen diferentes medidas de inteligencia emocional como el TMMS y el EQ-i.

Resultados. Los resultados del análisis de varianza en un sentido entre los diferentes ámbitos científicos pusieron de manifiesto que aparecen diferencias significativas en la práctica totalidad de los aspectos de la Inteligencia Emocional, con excepción de la variable manejo del estrés.

Discusión. A partir de estos resultados se establecen implicaciones para el desarrollo de competencias genéricas de tipo socio-emocional en el marco del Espacio Europeo de Educación Superior.

Palabras clave: Inteligencia emocional, estudiantes universitarios, diferencias en el perfil de competencias socio-emocionales, implicaciones para el desarrollo de competencias genéricas.

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Introduction

At the present time we see a new direction in intelligence studies, one that was not taken into account until recently. By this we mean the world of emotional competencies, passed over in the scientific research in favor of studying reason as part of cognitive psychology.

There are many references and studies on intelligence over this past century; however, academic intelligence must be delimited from the so-called non-academic intelligence, where we an important place is given to social and practical intelligence, and above all, emotional intelligence.

Academic intelligence is traditionally related to general or analytic intelligence defined in psychometric terms such as IQ (Sternberg, 2000; Sternberg 2003; Sternberg, Castejón, Prieto, Hautamäki & Grigorenko, 2001; Sternberg, Prieto & Castejón, 2000). The so-called non-academic intelligence has been considered different from academic intelligence for two reasons: one, because it shows a different evolutionary development (Matthews, Zeidner & Roberts, 2003); two, because it seems to explain differences in performance beyond that explained by IQ (Bowman, Markham & Roberts, 2001; Sternberg, Grigorenko & Bundy, 2001; Sternberg, Forsythe, Hedlund, et al., 2000), thereby constituting a different aspect of traditional, general psychometric intelligence. Nonetheless, there is still debate from persons like Gottfredson (2003), who defend the existence of a general factor of intelligence (g) and argue against the existence of a practical intelligence factor different from academic intelligence (g). Social intelligence, on the other hand, is a broad construct more difficult to delimit, and appears in the scientific literature sometimes linked to emotional intelligence (Bar-On, 2000; Goleman, 1998), other times to practical intelligence (Hendlund & Sternberg, 2000). Under the emotional intelligence label we find two different, if not opposing conceptions (Bar-On, 2000; Mayer, Salovey & Caruso, 2000). One is a broad conceptualization, considering emotional intelligence to be a combination of attributes closely related to personality, different from IQ, and related to competencies linked to academic and professional performance (Bar-On, 2000; Goleman, 1995, 1998; McCrae, 2000); the other conceptualization is more restrictive, taking into account the ability to perceive and understand emotional information (Mayer, Caruso & Salovey, 2000; Mayer, Caruso, Salovey & Sitarenios, 2003). Broad, rigor-

ous reviews of the concept of emotional intelligence (Matthews, Zeidner & Roberts, 2003; Zeidner, Mathews & Roberts, 2004) suggest that scientific evidence about the emotional intelligence construct is still limited.

Furthermore, both the type and degree of effect produced by socio-emotional components in different academic and professional domains may depend on the discipline involved; thus, the general or specific nature of the different aspects of non-academic intelligence must be defined, in order to identify either general factors common to the different domains, and/or specific components of social, emotional and practical intelligence related to each domain or professional field (Boyatzis, Goleman & Rhee, 2000). In order to do this, a socio-emotional competency profile must be established for each scientific/professional field and the differences and similarities between the different profiles must be analyzed.

The current perspective in studying competencies encompasses both the academic sphere (González & Wagenaar, 2003) and the professional (McClelland, 1999). Studies on practical intelligence in the work world and in daily life, and on similar constructs such as those in emotional intelligence, constitute new instruments to assess competencies needed in the professional environment (Sternberg et al., 2000). The term competency defines a set of skills involved in achievement or problem-solving within the personal or professional sphere (García, 2003; Le Boterf, 2001; Levy-Leboyer, 1997), while intelligence refers to the subcomponents of these skills present in general forms of thinking and understanding (Sternberg, et al., 2000).

The skills involved in emotional, social and practical intelligence, once related to performance in the personal and professional spheres, as well as to general daily life, form competency models (Boyatzis, 1999; Boyatzis, Goleman & Rhee, 2000; Sternberg, et al, 2000). Moreover, most professional competencies identified as key competencies for professional performance are the same as aspects studied within emotional intelligence or very nearly so. In a national survey of American employees, it was found that six out of seven competencies considered to be key to professional success were emotional intelligence components (Ayers & Stone, 1999; Goleman, 1998); despite this, these competencies are not incorporated into most university programs (Boyatzis, et al. 1995; Echeverría, 2002). Even though professional performance does not seem to be predicted or explained by these competencies exclusively

(Schmidt & Hunter, 1998), socio-emotional competencies seem to have explanatory power beyond that of other variables (Caruso & Wolfe, 2001; Goleman, 1998, 2001; Sternberg, et al., 2000). These competencies also have their effect on job placement or employability (Caruso & Wolfe, 2001; Fallows & Steven, 2000; and particularly, Hettich, 2000).

In the area of higher education at university, several lines of work are being pursued recently with regard to competency-based training. Implementation of the 1999 Bologna Declaration regarding establishment of the European Space for Higher Education has led to concrete proposals for designing and developing educational programs and university curricula based on competencies, such as in the project *Tuning Educational Structures in Europe* (González & Wagenaar, 2003). In this project, a series of generic competencies are established, most of which concur with the socio-emotional competencies studied under the labels of emotional, social and practical intelligence. The project concludes that there are still open questions as to "*whether these competencies are common or specific, how to identify them, how to incorporate them into the university curricula and how to develop them in undergraduate studies*".

The idea, then, would be to move forward with new proposals for integrating and developing these competencies in the higher education curricula, such as those collected in the book published by Fallows and Steven (2000), and other guidelines coming from the United States and Canada, found in Boyatzis, Cowen and Kolb (1995), and Boyatzis, Wheeler and Wright (2001). There are university study plans and curricula in existence which implement these competencies, as is the case in several Australian universities (Nunan, George & McCausland, 2000), Harvard Business School (Jaeger, 2003; Prahalad & Hamel, 1990) in the U.S., and Sheffield Hallam University in the U.K., to mention a few.

Method

Participants

The total sample comprised 608 students from the University of Alicante, of which 98 pertain to Legal Sciences, 171 to the Social Sciences area, 101 to Education, 66 to Humanities, 160 to the area of Science and Technology, and lastly, 12 to Health Sciences. Ages

ranged from 20 to 34 years, with a mean age of 24.2 years. 52 % of subjects were female and 48 % were male.

Students who participated in the research were all enrolled in their final year in one of 14 different degree programs associated with the disciplines mentioned above, thus assuring that nearly all core subjects had been successfully completed.

Instruments

The instruments were based on the cognitive model of Emotional Intelligence developed by authors Salovey and Mayer (1990), from which different modalities of assessment have been developed.

This study used the self-report scale called Trait Meta Mood Scale-24, adapted to the Spanish language by Fernández-Berrocal, Extremera and Ramos (2004), based on the scale developed in 1990 by Mayer and Salovey. This scale comprises 24 items on a Likert scale where a score of 1 represents “totally disagree” and 5 represents “totally agree”, ans assesses three dimensions from the original scale: emotional attention, emotional clarity and emotional regulation or repair. The TMMS-24 is made up of 24 statements, 8 for each factor. Reliability for each component is as follows: Atention (.90), Clarity (.90) and Repair (.86). Additionally, a suitable reliability test-retest was presented (Fernández-Berrocal, et al., 2004).

Another instrument used in research is Bar-On’s EQ-i (1997; adapted to the Spanish language during the course of the research). This inventory covers a broad range of emotional and social skills, comprising 5 general factors, which are broken down into a total of 15 subscales: intrapersonal intelligence, interpersonal intelligence, adaptability, stress management, and general mood. In addition, the inventory includes 4 validity indicators which measure the degree to which subjects respond randomly or distort their answers, in an attempt to reduce the social desirability effect and increase the certainty of results. The Cronbach Alpha for internal consistency obtained in a sample of university students for each of the scales was as follows: intrapersonal intelligence (.75), interpersonal intelligence (.77), adaptability (.84), stress management (.83) and general mood (.88).

Procedure

The general, overall procedure in carrying out this research followed a two-phase approach.

During the first phase, Department Heads were contacted, or in their absence, teachers from the different degree programs involved in the disciplinary areas being addressed (Legal Sciences, Social Sciences, Education, Humanities, Science and Technology, and Health Sciences) in order to inform them about the nature and objectives of the project and to obtain their consent. Appointments were made with those teachers willing to cooperate in the study. After the first meeting with teachers, the participant sample was selected following a stratified random sampling process proportionate to the number of students enrolled in the degree programs belonging to each area, where the respective teachers were collaborating. The final study was carried out using a representative sample of students enrolled in the final year of their respective degree programs belonging to the above-mentioned disciplines. Next, data collection instruments were prepared, as well as an introductory letter about the project, and a personal data sheet to collect the information needed to return results to each participant in a personal, individualized fashion.

The second research phase consisted of applying the tests to collect data on different aspects of socio-emotional intelligence. Test application took place during the school year, in the classroom and according to instructions contained in the respective manuals; the time required for students to complete the tests was about two hours, allotted in a single session.

Administration of the tests followed this order: (1) The introductory letter and personal data sheet were handed out; (2) The purpose of the study was explained orally, and students gave their written consent to participate by taking the tests and providing their personal data. The consent form committed the research team to treat any data point statistically for the group and not at the individual level, and to make individual results available to the participants after totals had been compiled, and (3) the following tests for assessing emotional intelligence were applied: the TMMS-24 and Bar-On's EQ-i, in that order.

Design and statistical analysis

An ex post facto type of design was used for group comparison; while for statistical analysis, a one-way ANOVA was used to identify those variables that contribute to statisti-

cally significant differentiation between groups. Post hoc comparisons were carried out using the Minimum Significant Difference (MSD) method.

Results

Results from the analyses for each of the competencies assessed are presented below.

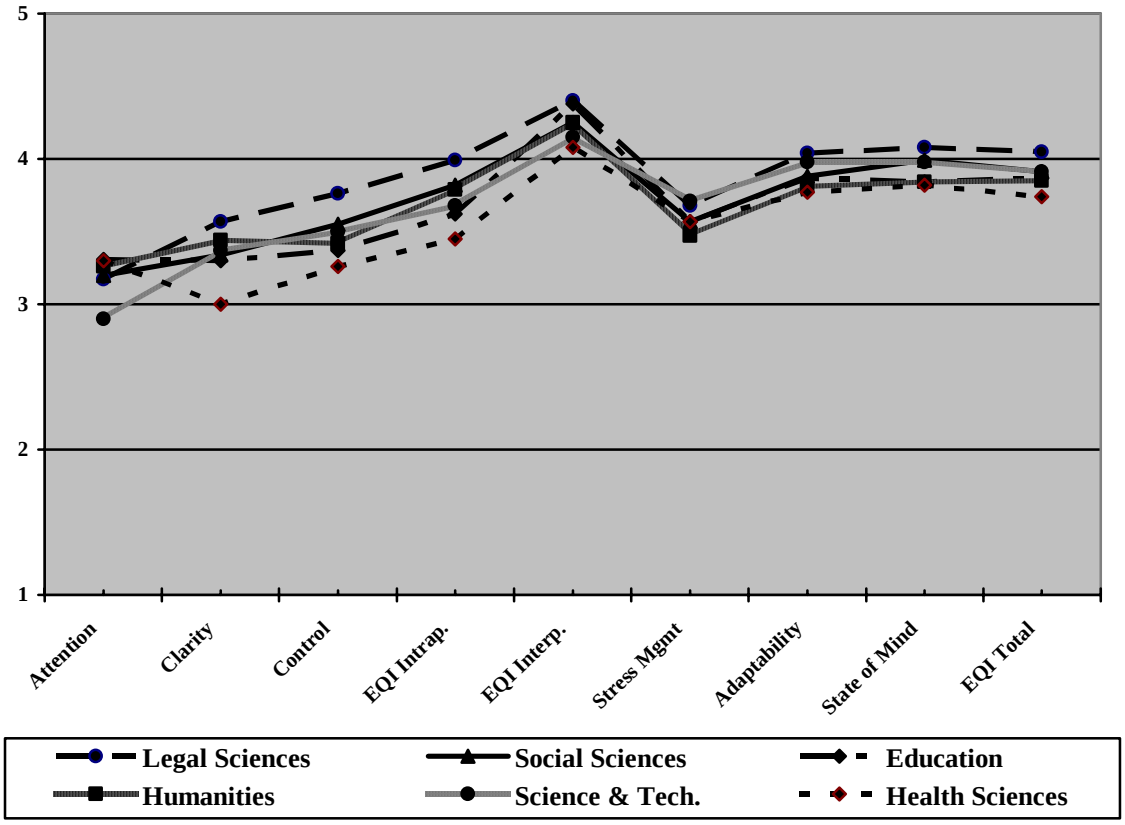
In Table 1, which represents the mean by group on a scale of 1 to 5, we can see how there are no great differences between the different disciplinary areas. However, when we analyze the three TMMS variables, for example for Emotional Attention, students from Science and Technology obtain the lowest score as compared to students from Health and Education, whose scores are highest; the Legal Sciences group scores above the others in both Emotional Clarity and Control, while the Health group scores the lowest. As for the EQ-i variables, the Legal Sciences group continues to prevail in the Intrapersonal, as compared to the Health Sciences group who again score the lowest; for the Interpersonal variable it is the Social Science students who score the highest, as opposed to the Health Science students; in Stress Management those in Science and Technology prevail over those in Humanities who are in last place; in Adaptability as well as in State of Mind the Legal Sciences students stand out, while those in Health continue to score lower than the rest; and in conclusion, overall results from the EQ-i continue to show the highest scores for Legal Sciences students and the lowest for the area of Health. It is in the Interpersonal variable of the EQ-i where students from all scientific fields obtain the highest scores, with the exception of Social Sciences students who get their highest score in State of Mind, another variable belonging to EQ-i.

Table 1. Group means for each of the six disciplines.

	Field of Studies					
	1	2	3	4	5	6
VARIABLES	**Legal Sciences**	**Social Sci.**	**Education**	**Humanities**	**Science & Tech.**	**Health**
Attention	3.17	3.20	3.31	3.26	2.90	3.30
Clarity	3.57	3.34	3.30	3.44	3.37	3.00
Control	3.76	3.55	3.37	3.42	3.50	3.26
Intrapersonal	3.99	3.82	3.62	3.79	3.68	3.45
Interpersonal	4.40	4.45	4.38	4.25	4.15	4.08
Stress Mgmt	3.68	3.57	3.57	3.47	3.71	3.57
Adaptability	4.04	3.88	3.87	3.81	3.98	3.77
State of mind	4.08	3.99	3.84	3.84	3.98	3.82
EQI Total	4.05	3.91	3.87	3.85	3.91	3.74

Graph 1 more visually represents the results discussed above.

Graph 1. Representation of group means by scientific discipline.



In Table 2, which shows results from the one-way ANOVA, we see significant differences in all variables except Stress Management.

Table 2. Results from the one-way ANOVA, performed on the emotional variables in order to establish differences between groups.

Variable	Sum of squares	df	Root mean square	F	p
Attention	13.252	5	2.650	4.799	.000
Clarity	6.513	5	1.303	2.643	.022
Control	9.592	5	1.918	3.453	.004
Intrapersonal	9.734	5	1.947	6.622	.000
Interpersonal	5.513	5	1.103	6.417	.000
Stress Mgmt	3.693	5	.739	1.330	.250
Adaptability	3.451	5	.690	2.527	.028
State of mind	4.223	5	.845	2.866	.014
Total EQ-i	2.722	5	.544	4.243	.001

Table 3 summarizes the differences found in the multiple comparisons test (MDS) for TMMS factors. Results show that students from Science and Technology have a significantly lower mean on Emotional Attention as compared to students from Legal Sciences, Social Sciences, Education and Humanities. For the Emotional Clarity variable, students from the Legal Area show a significantly greater mean in relation to students from the areas of Social Sciences, Education, Science and Technology and Health. For the final factor measured by the TMMS, that is, Emotional Control, students from Legal Sciences present a significantly greater mean than the rest of the students.

Table 3. Summary of the differences resulting from the multiple comparisons test for TMMS factors.

	VARIABLES																	
	Attention						**Clarity**						**Control**					
Group	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
1	---						---						---					
2	.809	---					.008*	---					.025*	---				
3	.213	.245	---				.007*	.679	---				.000*	.059	---			
4	.468	.558	.696	---			.225	.328	.222	---			.005*	.251	.647	---		
5	.005*	.000*	.000*	.001*	---		.027*	.653	.426	.531	---		.006*	.519	.191	.517	---	
6	.572	.634	.988	.855	.075	---	.008*	.110	.164	.048*	.078	---	.028*	.196	.631	.484	.293	---

1= Legal Sciences 2= Social Sciences 3=Education 4=Humanities 5= Science & Technology 6=Health

Note: Numbers indicate the probability value associated with differences between pairs of groups.

* = Statistically significant differences between two groups (p<.05).

Table 4 summarizes the differences resulting from the MDS multiple comparisons test for EQ-i factors.

For the first variable, the Intrapersonal, data show that the Legal Sciences group has a significantly greater mean in comparison to the rest of the disciplinary areas; at the same time the Social Sciences group shows a significantly greater mean in relation to the Education, Science and Technology and Health Sciences groups. For the Interpersonal variable, students belonging to Legal Sciences show a significantly greater mean, on one hand, when compared to students from Humanities, Science and Technology, and Health Sciences; on the other hand, the mean is

lower in relation to the Social Sciences group. The latter, in turn, present a significantly higher mean in comparison to the Education and Science and Technology groups. Finally, with regard to this variable, note that the Education group scores higher than the Science and Technology and Health Sciences groups. As for the Stress Management variable, the Humanities group shows a significantly lower mean when compared to the Science and Technology group. For the Adaptability variable, students in Legal Sciences have a significantly higher mean in comparison to students in Social Sciences, Education and Humanities, while the latter show a significantly lower mean in relation to the Science and Technology group. In the State of Mind variable, the Legal Sciences group presents significantly higher results in comparison to the Humanities and Education groups; the latter shows a lower score in comparison to Social Sciences and to the Science and Technology group. To conclude, the results from the EQ-i Total variable show a significantly higher mean for those students belonging to the Legal Sciences area as compared to the rest of the groups which were studied.

Table 4. Summary of differences resulting from the multiple comparisons test for EQ-i factors.

	VARIABLES																	
	Intrapersonal						**Interpersonal**						**Stress Management**					
Group	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
1	---						---						---					
2	.011*	---					.008*	---					.227	---				
3	.000*	.006*	---				.778	.019*	---				.301	.957	---			
4	.019*	.735	.057	---			.027*	.951	.052	---			.069	.361	.378	---		
5	.000*	.022*	.461	.156	---		.000*	.022*	.000*	.090	---		.822	.104	.172	.031*	---	
6	.002*	.033*	.327	.058	.191	---	.017*	.184	.025*	.213	.617	---	.626	.998	.984	.679	.556	---

1= Legal Sciences 2= Social Sciences 3=Education 4=Humanities 5= Science & Technology 6=Health

	VARIABLES																	
	Adaptability						State of Mind						TOTAL					
Group	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
1	---						---						---					
2	.020*	---					.169	---					.002*	---				
3	.027*	.879	---				.002*	.034*	---				.000*	.400	---			
4	.006*	.331	.444	---			.006*	.077	.922	---			.000*	.273	.744	---		
5	.385	.099	.114	.026*	---		.158	.965	.037*	.083	---		.002*	.929	.358	.244	---	
6	.101	.471	.519	.799	.189	---	.127	.324	.921	.884	.332	---	.007*	.142	.273	.362	.134	---

1= Legal Sciences 2= Social Sciences 3=Education 4=Humanities 5= Science & Technology 6=Health

Note: Numbers indicate the probability value associated with differences between pairs of groups.

* = Statistically significant differences between two groups ($p<.05$).

Discussion and conclusion

Taken as a whole, results reveal that there are differences between groups of university students belonging to the different scientific/professional areas in their scores on different aspects of emotional intelligence.

We have seen how the Legal Sciences group is consistently above the rest of the professional groups for all variables studied, with the exception of Stress Management, where no significant differences were observed between any of the degree programs. Indeed, as pointed out by Relly (2005), in order to become an effective lawyer one must learn to develop certain aspects of emotional intelligence, with interpersonal competencies being key in the area of improving negotiation skills. Likewise, Fisher, Ury and Patton (1991) make a similar observation when they describe how, in a legal negotiation, feelings can turn out to be much more important than words; unmasking the complexity of emotions may be a way to explain and begin to understand the important role that socio-emotional competencies can play in resolving conflicts.

In contrast, students in Health Sciences were the ones who scored lower in practically all variables, except in Stress Management and total emotional quotient; these results may be due to the smaller number of participants, this number has since been noticeably increased. Baños and Pérez (2005) highlight the importance of general or mainstream competencies of a socio-emotional type in training the university undergraduate, and more specifically, future health professionals. Traditionally, degree programs in this field have focused on specific competencies and have overlooked the idea of establishing certain mainstream competencies, despite the fact that they are considered indispensable. In recent years, however, a notable effort has been made to come to a more or less unanimous agreement as to what a health professional should be competent in. General interpersonal competencies are stressed as being a highly important element in university education within any degree program, and of course in the health sciences, where teamwork is an essential component.

As for the area of Education, it is sometimes mistakenly thought that affective and emotional competencies are not essential for teachers; however, emotional intelligence involves developing a set of skills that every teacher ought to learn, for two reasons: because classrooms constitute the highest-impact socio-emotional learning model for students, and because research is showing that adequate levels of emotional intelligence help to successfully cope with the daily disturbances that teachers face (Extremera & Fernández-Berrocal, 2004). Teaching emotional intelligence becomes a necessary task in the educational arena, since mastery of these skills is essential for the personal and socio-emotional development of students.

From the area of Social Sciences, for some years now there has been an emphasis that those who occupy managerial posts should also exercise leadership. The emotional intelligence approach is having increasing repercussions in the business world (Cooper & Sawaf, 1998; Goleman, 1999; Weisinger, 1998), as well as in relation to leadership (Senge, 1992). Goleman, for example, cites Boyatzis's study of two thousand supervisors, managers and executives from different companies, finding that there were 16 skills shared by those who were considered "star performers"; all of them except for 2 were emotional intelligence skills. Other studies such as Quintillán (2005) show that students perceive themselves to have a mid-to-high level of effective leadership characteristics, with the best results found in interpersonal skills. A mid-to-high level of effective leadership is certainly satisfactory; it would be

interesting to inquire into how university training addresses this competency, considered by both teachers and students to be fundamental in the future business person.

As for Science and Technology students, the low degree of emotional attention as compared to the rest of the discipline groups is noteworthy; this may be advantageous since too much attention to feelings can affect performance. Currently, many technology degree programs still produce a graduate profile which is a long way from the professional profile required by society. Still, as Juan et al. (2006) clearly express, generic or mainstream competencies play a very important role in training the engineer. They "form the glue that joins all the specific competencies, thus creating a synergy that makes the difference between knowing, and knowing how to apply optimally and with professional ethics". For an engineer, interpersonal competencies thus play a fundamental role since they develop the ability to organize and structure work, and much more so when leading groups is involved.

As we have observed, teaching emotional intelligence to students is becoming a necessary task in the university setting and most teachers consider mastery of these skills to be a priority for personal and socio-emotional development of students. However, even though teachers' mental representations about incorporating such generic competencies in university training acknowledge their importance in the training profile, the same teachers are obviously reluctant to incorporate them into the academic curriculum. This may be attributed to gaps in their own preparation as teachers (Corominas et al., 2006).

The teaching effort carried out at university seeks to provide intellectual training for citizens and to prepare professionals for their later incorporation into the labor market (Gallardo, 2006; Goñi, 2000). But when that incorporation is linked only to a theoretical training offered by the university, this forces students to train themselves in the difficult transition to the work world.

Our constantly changing society requires that universities and university education adapt to the expectations of society and the labor market. Amador (1996) speaks along these lines when he asserts that the training-employment binomial should provide a match between the training required by a certain job and the training offered by a university; moreover, the curriculum outline for each degree program should take into account the professional profile that each block of studies is addressing. Results from the González (2006) study reveal how

university students consider it essential to develop competencies linked to becoming employed in the area which they are being trained for.

Examining and developing students' generic and specific competencies, both at lower educational levels as well as during their university training (Lucas, 2007), is one way to respond to the diverse demands facing university graduates in the knowledge society which Europe is constructing.

Both our own results and those from De Miguel et al. (2003) establish that assessing practicing professionals' degree of satisfaction with the university training they experienced can form part of the planning and development of learning processes, and of fine-tuning the educational profile of degree programs. Similarly, the educator, the pupil and the professional will be able to quickly delimit those competencies in terms of proposed learning content and the actual learning activities which are designed for building them (De la Fuente et al., 2004).

As García-Montalvo and Peiró (2001, p.28) emphasize strongly, "labor placement processes have important consequences for youth, because they determine in part their professional career, their opportunities for personal development and their psychological well-being".

Most teachers agree that leadership quality in a university professor's teaching is obtained through adequate personal knowledge, high self-esteem, outstanding emotional control, and having a motivating life plan as a teacher and as a person. Attaining student success, that is, getting them to voluntarily develop their scientific, professional and research competencies through their own socio-emotional competencies, will no doubt define a high level of leadership in teaching, and an increase in university teachers' self-esteem (Hué, 2007).

A curriculum based on professional competencies, connecting general knowledge, professional knowledge and work experiences, seeks to address real-life needs and problems. These are defined through the diagnosis of experiences in social life and in professional practice, and through examining how the discipline itself and the labor market evolve, as well as the institution's own mission. This combination of elements makes it possible to identify needs around which to orient professional training, and to subsequently draw out the essential

generic professional competencies in a profile of the graduate headed for professional practice.

Despite the fact that personal development, education for production, and social development are all three important axes of educational action, labor-related competencies along the education-for-production axis generally take priority when defining competencies for the higher education graduate (Larraín & González, 2005).

We can appreciate the importance of identifying, evaluating and developing emotional competencies in the context of higher education at university if we take into consideration that: (1) skills involved in emotional intelligence, when related to performance in the personal arena, the professional arena, and in general daily life, constitute competency models (Boyatzis, 1999; Boyatzis, Goleman & Rhee, 2000; Hedlund & Sternberg, 2000); and (2) emotional intelligence models include broad competencies of a socio-emotional nature (Mayer, Salovey & Caruso, 2000).

It is worth noting that in present times interpersonal intelligence has taken on importance in university training, being one of the most highly valued mainstream competencies in the Tuning project (González & Wagenaar, 2003); students from the science sector must not overlook this facet of their competency profile. It therefore seems necessary to include teaching methods in the student education which encourage development of interpersonal intelligence, for example, cooperative work, group dynamics, etc. These methodologies seek to show how certain objectives in both education and in social life can only be reached by coordinating actions. That is, as a result of cooperative work, desired benefits are obtained and are shared among everyone. There are numerous studies at all educational levels which demonstrate the superiority of cooperative learning over competition and individuality (Johnson, Maruyana, Johnson, Nelson & Skon, 1981). Chickering and Gamson (1991) propose fostering cooperation among students through the use of cooperative learning as one of the basic principles for optimal learning among university students. It is therefore important and necesssary for teachers to be trained in this innovative methodology.

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