

**Ajuste y evaluación de las competencias en el área de la Enseñanza Superior Europea:
análisis de validación de indicadores de logro de diferentes habilidades académicas.****Adjustment and evaluation of the competences in the European Higher Education
Area: validation analysis of achievement indicators for different academic skills.****David Alarcón Rubio.**

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jasanmed@upo.es**RESUMEN.**

En el marco del Espacio Europeo de Educación Superior (EHEA) es necesario diseñar un currículo basado en competencias. En el caso de España la Educación Superior está cambiando hacia el sistema europeo de transferencia de créditos ECTS. Esto supone una nueva adaptación de la metodología y evaluación de la educación y prácticas educativas. El Doble Grado de Trabajo Social y Educación Social de la universidad Pablo de Olavide, Sevilla (España), está adaptando su currículo al sistema de créditos ECTS. Para evaluar la adquisición de competencias de los estudiantes, diseñamos un cuestionario de autoevaluación de las competencias. El coeficiente alpha de Cronbach indicó una alta fiabilidad y consistencia interna del instrumento. El análisis de componentes principales de rotación varimax mostró tres factores que se corresponden con las competencias definidas en el cuestionario: cognitivas, instrumentales y actitudinales. La autoevaluación de competencias conseguidas por los estudiantes se correspondió adecuadamente con los objetivos perseguidos en la asignatura. Los resultados pueden ser un indicador de la viabilidad del uso del currículo basado en competencias en el Espacio Europeo de Educación Superior EHEA.

PALABRAS CLAVE.

Competencias, ECTS, EHEA, cuestionario, evaluación.

ABSTRACT.

In the framework of the European Higher Education Area (EHEA) is necessary to design a competency-based curriculum. In the case of Spain the Higher Education is changing toward the European Credit Transfer System (ECTS). This supposes a new approach in the

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methodology and evaluation of the education and learning practices. The joint degree of Social Work and Social Education at the University Pablo de Olavide, Seville (Spain), is adjusting the curriculum to the ECTS. To evaluate the achievement of students' competences, we have elaborated a self-questionnaire of competences' evaluation. The coefficient alpha of Cronbach values indicated a high reliability and internal consistency. The principal components analysis with varimax rotation showed three factors that corresponded with the competences defined in the questionnaire: cognitive, instrumental and attitudinal. The self-evaluation profit of the competences by the students was adequately corresponded with the objectives pursued in the subject. The results can be an indicator of the viability of the use of competency-based curriculum in the EHEA.

KEY WORDS.

Competences, ECTS, EHEA, questionnaire, evaluation.

1. Introduction.

The university debate of the last years is based in the study of the present and future of Higher Education in the framework of the European convergence. The publication of different documents (Bricall and Bruner, 2000; Dearing, 1997; UNESCO, 1998) has supposed a changing process in the educational policies on the university and a turn towards the search of an opened space for the higher education and throughout the life-span (UNESCO, 1998).

In the present time different challenges that face the university lack from sense without considering the cultural, political, economic and social changes of our society. As March (2007) indicates, this challenges question the higher education function, that must be understood from the society of the knowledge, and implies the search of new rolls and new opportunities. Changes that, from the perspective of a deep transformation towards a university able to confront the demands of the knowledge and economic globalisation will obtain, competitive European universities compared with the rest of universities of the world (Caride, 2007; Dill, 2009).

The present society proposes to the universities a new challenge that consists of training professionals able to confront the work demands (Bricall and Bruner, 2000). In this context, the creation of the European Higher Education Area, with the signature of the Declaration of Bologna (1999) shows the relation between the university and the society in the development of the competences that allow the students to face of in an effective way the necessities of the society as well as to construct knowledge by themselves. Therefore the lifelong learning throughout the life spam is only obtained if the acquired knowledge is adapted to the professional competences, which framed in the society of the knowledge are continually changing. This way, the university students must manage to develop in their educative process a series of competences like: learn to learn, to communicate, to cooperate, to become critical and motivate themselves (Monereo and Pozo, 2003). In fact, in the reconstruction of meanings of assessment and messages the individuals are active (Sambell and McDowell, 1998).

In the university system adaptation becomes necessary to obtain the directives that allow the students to achieve the competences, understood these like "the combination of knowledge, abilities (intellectual, manual, social, etc), attitudes and values that will enable them to



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confront with guarantees the resolution of problems or the intervention in a subject, in an academic context, professional or social determined" (MEC, 2006). In fact the competencies approach has a key role in this process (Lozano, Bori, Peris and Hueso, 2012). Yániz and Villardón (2006) affirm, the university has to designed learning situations in which the acquisition of knowledge, abilities and attitudes are increased and become part of the competences and professional profile. According to Tillema, Kessels and Meijers (2000) changes in the university educational system should be based on the idea that the curriculum should focus more on competences and work-related experiences. The active learning and the autonomy become an essential part of this profile that manages to make effective the adjustment of the educational necessities and the preparation of the students with the professional and citizen demands of our society. Marcelo, Yot and Mayor (2014) analyse the learning activities in higher education selected by teachers to guide the acquisition of competence by the students to promote their autonomy in their own learning process. Gaspar et al., (2008) proposes the development of appropriate assessment instruments to improve student learning and development as an unquestionable strategy to promote the assessment and quality of higher education.

In each degree the competences are design in the curricular projects that gather generic and specific competences (Nieweg, 2004). The generic ones are those that become part of the professional and educational profile of the degrees in general. An example of it constitutes the collections in the Tuning project (González and Wagenaar, 2003; Tuning Project, 2007) between which emphasize some like: capacity of analysis and synthesis, capacity to organize, to plan, basic and general knowledge, ability to work with autonomy, capacity to get adapt to new situations. The specific competences are the ones of a single professional profile through the basic abilities of each professional practice.

Ortega et al., (2007) exposes the professional profile of the social educator, through the analysis of questionnaires to evaluate the generic and specific competences of the Social Education degree by the professionals, university teaching staff, graduated in social education and potentials employers. The design of the curricular project supposes the selection of the competences and to plan its development to incorporate it to the curriculum of the different subjects in each degree.

Within the framework of the European Credit Transfer that approximates us to the European Higher Education Area and considering the previous competences and experiences, the curriculum of the Social Work and Social Education joint degree of the University Pablo de Olavide of Seville has been designed based on competences. In this design we left from the competences of both degrees and have tried to know the adjustment and achieved of the same ones by the students, with the objective to design an instrument to verify the competences reached by the students.

1.1. Objectives.

Our main objective is to evaluate if the competences planned in the curriculum area adapted at the level of profit of competences perceived by the students. To achieve this goal a questionnaire was designed on the acquisition of academic skills, to assess if the students reached the competencies proposed in the subject. Como objetivos específico se pretende



comprobar si existe diferencias en la adquisición de distintos tipos de competencias: cognitive, instrumental and attitudinal competencies.

2. Methods.

2.1. Participants.

63 university students of the Social Work and Social Education degree of the University Pablo de Olavide of Seville participated in this study. The study was conducted in the first year of implementation of the ECTS degrees at the University Pablo de Olavide. Attending to gender, 56 were female and 7 were male. All of them with ages between 18 and 22 years old.

2.2. Instrument.

We have design a Questionnaire of evaluation of the profit of the competences in the curriculum of the General and Development Psychology subject. The curriculum was based in the generic skills and subject-area related competences declared in the White Book of the degrees of Pedagogy and Social Education (2005) and Social Work joint Degree (2004). The Competences Questionnaire consisted of 33 items of multiple options type Likert from 1 to 5, see Table 1, increasing in a gradual way the level of agreement with the profit of the competences.

There were 5 items related to the generic skills competences of the Social Work joint Degree. And, there were 33 items related to the specific competences, and divided in three subtest:

- 1) Cognitive Competences: set of knowledge approached in the subject.
- 2) Instrumental Competences: abilities that are developed throughout the course by the active participation in the subject.
- 3) Attitudinal Competence: capacities and values that are acquired and developed in the academic context.

2.3. Procedure.

The questionnaire was administered at the end of the academic course during the beginning of a practical class. It was always complimented counting on the voluntary availability of the students and in an anonymous way. The observed data were analyzed by the statistical package SPSS 15.0, with the objective to obtain empirical evidences of self-perception profit of the competences by the students.

3. Results.

3.1. Factorial analysis.

An exploratory factorial analysis was made in order to identify the questionnaire components, by the method of main components ($n=63$). A Varimax rotation was selected to obtain a solution of three factors. It was obtained a Kaiser-Meyer-Olkin measurement of 0.757, high value according to the KMO scale, and a significant level the Bartlett test [$X^2(63) = 78,088$; $p < 0,001$], concluding the adjustment of a factorial analysis for our data.

The rotated solution of the factorial analysis, showed three main factors that explained 41.69%, 7.75%, and 6.25% of the variance, respectively, and all together the three factors represent the 55.70% of the total explained variance. As Table 4 shows, items including in each factor had a coefficient of saturation over 0.30. Each one of these three factors





corresponded with the competences defined within the questionnaire, and that we could denominate of self-evaluation of the profit of: a) cognitive competences (factor 1); b) attitudinal competences (factor 2); and c) instrumental competences (factor 3). See table 1.

Questionnaire of evaluation of the profit of the competences	Factors		
	1	2	3
Cognitive Competences			
Knowledge of the main explanatory mechanisms of behaviour in social contexts.	0,708		
Knowledge of the process, strategies and mechanisms of development and learning of the people throughout their life.	0,596		
Knowledge of the social, institutional and communitarian systems that affect the socializing process in diversity and multicultural contexts.	0,729		
Knowledge of the identity process and self-perception.	0,596		
Knowledge of the main explanatory mechanisms of encouragement and weakening of misadjusted or risk behaviours.	0,613		
Handling of the main research methodologies, collection, analysis, interpretation and diffusion of results applicable to the psychological and social area.	0,599		
Use of the basic concepts of Psychology.	0,682		
Integration of individual and social factors like explanatory elements of the differences in the behaviours and cognition in diversity contexts.	0,592		
Critical reasoning on Psychology and the attempts to reduce it or to supposedly reduce it to more scientists' knowledge.	0,697		
Understanding of the interaction of individual and social factors in the development.	0,677		
Recognized the significance of the diversity on development.	0,675		
Analysis and understanding of the life-span cycle.	0,591		
Knowledge of the mechanisms of affective and emotional bonds and its relation with the psychological development.	0,366		
Analysis of the relation between the explanatory factors of the learning and the different theoretical models.	0,532		
Recognition of the memory like a main process in all aspects of development	0,527		
Understand the memory as a social process.	0,627		
To understand the differences in the thought of the individuals and to recognize the influence of the cultural variables in him.	0,662		
To know the different functions from the language and to include its important paper in the development of the thought.	0,493		



Attitudinal Competences

Recognition that the human being is not logical when they are thinking and that they have slants in their reasoning.	0,467
Critical vision on the relation between the development process and the forms of life, that is to say, the culture of the human beings.	0,784
Integration of individual and cultural factors like an explanatory element on the differences in behaviour.	0,501
Critical review of the universal theories of the human development.	0,721
Understanding of the present concept of family.	0,797
Analyzing the memory process from a scientific perspective.	0,600
Understanding the possibility to educate emotions and motivations.	0,766

Instrumental Competences

Handling of the strategies to search information and bibliography, in Internet as well as in library.	0,663
Adequate professional ethic that respect the confidentiality of the information, the veracity, transparency and justice.	0,628
Critical vision of Psychology like scientific discipline and general scientific knowledge.	0,674
Knowledge of the individual developmental process identifying the factors that takes part on it.	0,619
Flexibility on the understanding of the variables that affect familiar educational styles.	0,729
Understanding the significance of the different ways form learning in the development.	0,505
Understanding the motivation and emotional processes like result of the interaction of individual and social factors.	0,513
Analyze the cultural variables implicated in the cognitive processes.	0,307

Table 1. Factorial Analysis of the profit of specific competences.

3.2. Internal Consistency.

To confirm the analysis of the internal consistency we study the reliability of the questionnaire, by the Cronbach coefficient alpha. The internal consistency values for the three components are $\alpha=0.921$ (cognitive competences), $\alpha= 0.872$ (attitudinal competences) and $\alpha= 0.866$ (instrumental competences), a high value if we consider its value range from 0 to 1.

3.3. Descriptive and correlational analysis of the competences profit.

As the factorial analysis of the items has indicated, the questionnaire evaluate three main factors refers to the cognitive, attitudinal and instrumental competences. As Table 2 shows, the students evaluated that they had reached a level of cognitive competences of 3.48 (SD = .63), the profit of the attitudinal competences was of 3.45 (SD = .58), and the instrumental competences was of 3.41 (SD = .59). The distribution of the percentage of the answers, see Table 2, shows that most of the students answered in the Likert scale over 3 scores, that is to



the medium or higher options. For example, in the analysis of the total level of competences 47% of the students considered that they have a medium profit compared with the 53% that considered it was high. The students that evaluated a profit of low type of competences never reached over the 10%.

Competences Questionnaire	Mean (SD)	Level of the competences profit		
		Low	Medium	High
Cognitive competences	3.54 (.67)	5%	44%	51%
Attitudinal competences	3.38 (.78)	10%	37%	53%
Instrumental competences	3.55 (.73)	2%	48%	50%
Total score	3.53 (.60)	0%	47%	53%

Table 2. Descriptive statistics of the profit of competences perceived by the students.

The correlation values of each competences factors and the total score indicates a statistically significance correlation, as Table 3 shows, with levels range from $r = .793$ to $r = .883$ ($p < .01$).

Competencies	1	2	3	4
1. Total Score	1.000			
2. Cognitive Competences	0.817*	1.000		
3. Instrumental Competences	0.883*	0.731*	1.000	
4. Attitudinal Competences	0.793*	0.721*	0.588*	1.000

* $p < 0.01$ (two-tailed)

Table 3. Correlations between the competences achieved by the students



The results also indicate the way in that the attainment of certain types of competences is associated. We could underline that the cognitive competences are higher correlated with the attitudinal competences ($r=.721$, $p<.01$), and the instrumental ($r=.731$, $p<.01$). But, the attitudinal competences were lower correlated with the instrumental competences ($r=.588$, $p<.01$).

4. Discussion.

This data confirm that there three principal competences evaluated by the questionnaire. The cognitive, attitudinal and instrumental competences were high self-evaluated by the students, and high correlated with the total score of the questionnaire. On one hand, the cognitive competences correlated significantly with the profit of attitudinal competences, indicating that these types of competences, traditionally promoted in the theoretical classes, corresponds with the general knowledge about a subject in a university degree. On the other hand, the cognitive competences correlated significantly with the instrumental competences, showing that those competences are developed especially in contexts of independent and interactive learning as the practical exercises and small-group sessions.

For this reason, the distribution of contents and methodologies based on competences would be due to optimize those ones that are tried to reach. In addition, the lower correlation obtained between the acquisition of attitudinal and instrumental competences indicate that is necessary to promote the integration between theoretical and practical lessons to further develop the attitudinal competences of the students.

In conclusion, our study suggests that the evolution of the adjustment and evaluation of the competences in the European Higher Education Area should be based on the planned competences in the educational curriculum. The acquisition and development of competences by the students require of an effort by the faculty teachers to establish the types of competences to develop in each model of subject and to clearly design the gradual progress that the student must follow during their studies. Also, an agreement between the faculty teachers within the same academic degree would be due to define the competences that the students must acquire to complete their professional profile throughout the degree (Gonzalez et al., 2003; Monereo et al., 2003). The objective of the European Higher Education Area is directed to educate professionals who are able to confront the work demands (Bricall and Bruner, 2000), to reach that objective, our research supports the necessity to design instruments for the assessment and evaluation of the educational situations that promote the acquisition of the competences profile (Yañiz et al., 2006). Nevertheless, the validation process of competences assessment instruments is a difficult task. So future research will need to be performed to complete the validity of the competences questionnaire we constructed and analyzed its relation with others competences assessment instruments as portfolio (Van der Schaaf and Stokking, 2008).

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