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University Qualification in Psychology in EHEA: Comparison Between Spanish Grado and Licenciatura Qualification

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Abstract

The university qualification in Psychology in Spain has undergone significant changes in curricula and teaching-learning method as a result of adapting to the European Higher Education Area (EHEA). The main objective is to see if any differences exist between *grado* (four-year qualification adapted to EHEA) and *licenciatura* (five-year qualification reflecting the previous curriculum structure) levels in terms of acquisition of knowledge in Psychology. The study sample comprises 718 Psychology students from six Spanish public universities, 390 in their fourth year of grado and 328 in their fifth year of licenciatura. An assessment was made by means of an objective test designed ad-hoc on Psychology knowledge. The results revealed no differences in acquisition of knowledge in Psychology between grado and licenciatura. It is concluded that there is no improvement in acquisition of knowledge through adaptation to EHEA, and that this has no relation to the 'A' level stream from which students come.

Keywords: European Higher Education Area, psychology, grado, licenciatura, ex post facto study.

Resumen

La titulación de Psicología en España ha sufrido importantes cambios en los planes de estudio y en la metodología de enseñanza-aprendizaje, tras su adaptación al Espacio Europeo de Educación Superior (EEES). El principal objetivo del estudio es comparar si existen diferencias en la adquisición de conocimientos en Psicología entre graduados y licenciados. La muestra está compuesta por 718 estudiantes de Psicología de seis universidades públicas españolas, 390 de cuarto curso de grado y 328 de quinto de licenciatura. Se evalúo mediante una prueba objetiva tipo test elaborada ad-hoc sobre conocimientos en Psicología. En los resultados se observa que no existen diferencias en la adquisición de conocimientos en Psicología entre graduados y licenciados. Se concluye que no hay mejoras en la adquisición de conocimientos con la adaptación al EEES, y que esto no se relaciona con la rama de conocimiento del bachillerato de procedencia.

Palabras clave: Espacio Europeo de Educación Superior, psicología, grado, licenciatura, estudio ex post facto.

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Introduction

In recent years, significant changes have been made to the Psychology curriculum in Spain as a result of adapting to the European Higher Education Area (EHEA) created following the Bologna Declaration (1999). The main aim of this declaration is to harmonize university-level studies across Europe with a view to making the higher education system in Europe more internationally competitive (Ariza, Ouevedo-Blasco, Bermúdez, & Buela-Casal, 2013; Bermúdez, Castro, Sierra, & Buela-Casal, 2009), the fundamental pillar being evaluation and enhancement of university quality (Sierra, Buela-Casal, Bermúdez, & Santos-Iglesias, 2009).

The EHEA model has been added to at successive meetings of education ministers held in different European cities (Bergen Declaration, 2005; Berlin Declaration, 2003: Bucharest Declaration, 2012: Budapest-Vienna Declaration, 2010; Leuven Declaration. 2009: London Declaration, 2007: Prague Declaration, 2001), factoring in the need for a change in student learning processes based on personalized, student-focused teaching and acquisition of skills in order to turn out active and responsible citizens. With this in mind, the proposal has been to adapt a course system comprising two cycles and use a working method based on the European Credit Transfer System (ECTS).

This intergovernmental process has caused a paradigm shift (Ariza, Bermúdez, Quevedo-Blasco, & Buela-Casal, 2012; Hernández, 2010; Mateo, Escofet, Martínez, & Ventura, 2009) which has made it necessary not only to transform structures in the university system and make changes to how institutions are organized (Ion & Cano, 2011), but also to reform curricula under the new Bologna qualifications.

In the specific case of adapting the qualification in Psychology to EHEA requirements, two vitally important initiatives have been implemented in Europe. Firstly, the project EuroPsyT - A Framework for Education and Training for Psychologists in Europe (Lunt et al., 2001), the aim of which is to establish the bases of the European curriculum for teaching Psychology at higher education level; and secondly the project European Diploma in Psychology (Europsych-EDP, 2003), the aim of which is to formulate the bases and requirements for creating an European diploma accrediting qualifications and skills in Psychology (Peiró, 2003). The aim is to create a study system for Psychology which is equivalent across Europe (Buela-Casal, Gutiérrez-Martínez, & Peiró, 2005), in a similar way as is being pursued in Latin American countries (Sierra & Bermúdez, 2005).

In Spain, this process of changing the Psychology curriculum has culminated in the drafting by the National Agency for Quality Evaluation and Accreditation of Spain (Agencia Nacional de Evaluación de Calidad y la Acreditación, ANECA, 2005), of the Libro Blanco del Título de Grado en Psicología. This paper describes the situation of education in Psychology and sets out the guidelines to be followed by Spanish universities as regards modifying the curricular content of the grado (four-year qualification adapted to EHEA) in Psychology according to EHEA requirements.

The general aim set out for the grado qualification in Psychology is "to equip professionals with the scientific knowledge required to understand, interpret, analyze and explain human behavior, and with the basic skills and abilities required to assess and act at the individual and societal level throughout the life cycle. in order to promote and improve health and quality of life" (ANECA, 2005, p. 150). To graduate in Psychology, students must demonstrate knowledge and understanding of the different areas of Psychology; the ability to apply principles of Psychology in individual, group and organization contexts; and to acquire a set of transversal skills.

To achieve these aims, a grado qualification in Psychology is proposed. It is a general course of study lasting four years (240 ECTS credits) and structured into blocks containing the basic principles of the discipline, the aim being to develop the professional skills which future

psychologists need to acquire. In addition, compulsory and optional blocks are included to provide complementary training for enhancing specific and transversal skills.

The new qualification of grado in Psychology replaces the former qualification of *licenciatura* (five-year qualification reflecting the previous curriculum structure) in Psychology, the general guidelines for which are contained in the *Real Decreto 1428/1990*, *de 26 de octubre* of Spain. The licenciatura curriculum is based on two cycles and total course duration of between four and five years, each cycle lasting a minimum of two years. The study load must not be less than 300 credits.

Added to these changes are those which affect the teaching-learning method, moving the focus away from lecturer activity for educating university students in theory and practical content and placing it on student learning, promoted by the EHEA (León & Latas, 2007), whereby learning centers on acquiring the transversal and specific skills which enable students to performing a set of activities once they have successfully completed a given course of learning (De Miguel, 2005).

The changes occurring in recent years in the Psychology qualification curricula have therefore been significant (Ortega & Zych, 2013), as have those occurring in the teaching-learning process and method (De Miguel, 2006; Fernández, 2010; Rodríguez-Moneo,

Mateos, & Huerta, 2010; Teva & Buela-Casal, 2011).

Also significant is the fact that there are no studies examining the impact of these changes on the acquisition of knowledge by grado Psychology students in comparison with their licenciatura counterparts. The literature does, however, contain studies which focus exclusively on the change produced in specific subjects included in the course for this qualification. One such is the study by Rosell and Cervera (2013), comparing academic achievement in the Language Psychology subject by third-year grado students and fourth-year licenciatura students on the Psychology course at the University of Valencia; grado students showed better academic achievement than their licenciatura counterparts for this subject. A similar study on the Veterinary Science qualification course at the University of Santiago de Compostela compared academic achievement by grado and licenciatura students in the Veterinary Parasitology subject, and the results of this research also showed better academic achievement by grado students than by licenciatura students in this subject (Morrondo, Arias, Paz, Díez-Bolaños, & Sánchez-Andrade, 2012).

For all these reasons this study is proposed, its principal aim being to discern any differences in acquisition of knowledge for the Psychology qualification between students following the licenciatura curriculum and those following the grado curriculum. The specific aims of this research are to discover if there are differences in acquisition of knowledge between grado and licenciatura students of Psychology according to: (1) university where studying; (2) the six knowledge areas in Psychology; and (3) the 'A' level stream students come from, both for fourth-year grado and fifth-year licenciatura students.

Method

Participants

The study sample comprises 718 Psychology students, 390 fourthyear grado students and 328 fifthyear licenciatura students from academic year 2013/14, studying in six public universities in Spain: Granada (32.5%), Málaga (21.3%), Huelva (18%), Salamanca (13.5%), Miguel Hernández de Elche (8.4%) and Oviedo (6.4%). The age range of participants is between 20 and 55 years old (M = 23.16; SD = 3.65). The 80.9% of the sample are women (M = 23.06, SD = 3.76) and 19.1% men (M = 23.57, SD = 3.16). Regarding the 'A' level stream studied, 46.8% of students come from the Social Sciences stream. 28% from Health Sciences, 18.6% from Humanities, 5% from Technology, 0.9% from Arts and 0.6% from "University access for over-25s". Participants were recruited using convenience sampling. Table 1 shows socio-demographic and ac-

Table 1
Socio-Demographic and Academic Characteristics by Year of Course

Characteristic		year grado $(n = 390)$		ear licenciatura $(n = 328)$
	%	M(SD)	%	M(SD)
Age		22.74 (3.74)		23.65 (3.49)
Sex				
Male	20.3		17.7	
Female	79.7		82.3	
'A' level stream				
Social Sciences	33.2		46.9	
Health Sciences	44.1		28.0	
Humanities	15.7		18.6	
Technological Sciences	5.2		5.0	
Arts	1.3		0.9	
"Access to University for over-25s"	0.5		0.6	
No. of years studying				
Four	96.1		0.0	
Five	2.3		87.2	
Six	1.6		9.0	
Seven	0.0		2.5	
Eight	0.0		0.6	
Nine	0.0		0.6	

ademic characteristics by year of course.

Instruments

To carry out the study an objective test was used, designed ad-hoc on Psychology knowledge, comprising 50 questions with four possible answers, only one of which is correct. The final score is obtained by adding up points for number of correct answers and subtracting one

correct answer point for every three incorrect answers (questions left unanswered neither add nor subtract points). The test furthermore gathers socio-demographic data such as age and sex, and academic data such as year of study, university where studying, 'A' level stream studied and years spent thus far on the course.

For the test, the 50 questions were distributed across the six Psychology knowledge ar-

eas established in the Real Decreto 1888/1984, de 26 de septiembre of Spain: (a) Personality, Assessment and Psychological Treatment; (b) Psychobiology; (c) Social Psvchology; (d) Behavioral Sciences Methodology; (e) Basic Psychology; and (f) Developmental and Educational Psychology. The number of questions for each of the six knowledge areas was agreed based on the proportion of credits for core subjects established in the Real Decreto 1428/1990, de 26 de octubre of Spain, which creates the official licenciatura university qualification in Psychology and the general guidelines of curricula for obtaining this qualification (Table 2).

Once the number of questions per knowledge area had been established, the questions were taken randomly from a database of 2,500 questions categorized into the six

areas in question. The 2,500 questions in the database were the questions used in the selection tests for psychologist healthcare personnel training places (Resident Intern Psychologist) in calls for applications over the period 2001 to 2011.

Regarding the psychometric properties of the knowledge test, the reliability indicators used were Cronbach's alpha ordinal and Mc-Donald's omega. Choosing these indicators is justified by the dichotomous nature (right/wrong) of the response categories for questions when correcting the test (Elosua & Zumbo, 2008). Firstly, Cronbach's alpha ordinal was calculated using the tetrachoric correlation matrix and found to be .79, which indicates moderate reliability. This result makes sense given that the test is made up of six knowledge areas which will probably make up fac-

Table 2

Psychology Knowledge Areas, Proportion of Credits for Core Subjects Established in the Real Decreto 1428/1990 and Number of Questions for Each Knowledge Area According to Aforementioned Proportion

Knowledge area	% core credits	No. test questions
Personality, Assessment and Psychological Treatment	19.34	10
Psychobiology	12.78	6
Social Psychology	14.23	7
Behavioral Sciences Methodology	12.78	6
Basic Psychology	25.18	13
Developmental and Educational Psychology	15.69	8
Total	100.00	50

tors with a degree of theoretical independence.

Then factor analysis was carried out, again using the tetrachoric correlation matrix. For this, first a parallel analysis was carried out to determine the number of components to extract, the result being six factors (matching the six knowledge areas). Factor analysis was thus performed using maximum plausibility. The percentage of explained variance was 23.

Lastly, the factor analysis was used to calculate McDonald's omega which gave a value of .69, demonstrating the reliability of the test.

Design and procedure

It is an ex post facto study using cross-sectional surveys (Montero & León, 2007). To recruit the sample, the first step was to contact professors in the Departments of Psychology at the six Spanish universities where both fourth-year grado and fifth-year licenciatura were taught in May during academic year 2013/14, and they were asked to give the test to both groups. The instructions for giving the test were the same for all participants: "This is a test on Psychology knowledge. Each question has four possible answers. Only one answer is correct. The final score is obtained by adding up the number of points for correct answers and subtracting one correct answer point for each three incorrect answers (questions left unanswered neither add nor subtract points). Maximum time for completing the test is 60 minutes". Once the data for the six universities participating in the study had been collected, they were analyzed using statistics package SPSS 15.0.

Results

First, total score out of 10 for the objective test was calculated using the following formula: [[Correct-(errors/3)] \times 10]/50. The scoring range for the objective test is 0-10.

Then the difference in mean scores for the objective test obtained by grado and licenciatura students was determined. The results revealed no statistically significant differences (t = 0.64; p = .519) between fourth-year grado students and fifth-year licenciatura students (M = 2.63; SD = 1.06).

Analysis was subsequently made of the difference in mean scores for the objective test obtained by grado and licenciatura students according to university in which enrolled. These data are set out in Table 3, which shows that the only statistically significant differences were found among students at the University of Granada. Fifth-year licenciatura students obtained higher scores than fourth-year grado students.

In addition, the percentage of correct answers in the objective test was determined, both by total and by the six knowledge areas of Psychology on which questions were asked. Table 4 shows the mean percentage of correct answers given by grado

Table 3

Difference in Mean Scores for Objective Test Between Grado and Licenciatura Students According to University

University		year ado		year ciatura	t	p	r
•	M	SD	M	SD	_		
Granada	2.23	0.90	2.67	1.01	-3.40	.001	.22
Málaga	2.97	1.07	2.79	1.14	0.95	.346	.08
Huelva	2.69	1.12	2.57	1.05	0.64	.525	.06
Salamanca	3.19	1.18	2.82	1.10	1.60	.112	.16
Miguel Hernández de Elche	2.50	1.38	2.41	0.97	0.29	.776	.04
Oviedo	2.52	1.26	1.97	0.95	1.62	.111	.24

and licenciatura students. The results clearly show that fourth-year grado students obtained a higher percentage of correct answers for the Behavioral Sciences Methodology area and a lower percentage of correct answers in the Personality, Assessment and Psychological Treatment area

than fifth-year licenciatura students. By contrast, no statistically significant differences were found in other knowledge areas or in the total.

Lastly, variance analysis (ANOVA) was performed in order to determine whether there were any differences in the percentage of cor-

Table 4

Mean Percentages of Correct Answers in Objective Test by Grado and Licenciatura Students, Both by Total and by Knowledge Area, Mean Differences

Knowledge area	4th year grado			year ciatura	t	р	r
	M . a	SD	M . a	SD	-		
Developmental and Education Psychology	30.03	16.69	28.23	15.56	1.47	.140	.06
Basic Psychology	37.10	15.56	36.09	15.60	0.86	.388	.03
Behavioral Sciences Methodology	27.94	20.79	22.10	17.77	4.00	.000	.15
Social Psychology	61.64	20.17	61.58	19.03	0.04	.966	.00
Psychobiology	37.43	21.71	34.70	20.66	1.71	.087	.06
Personality, Assessment and Psychological Treatment	44.87	15.75	49.66	16.76	-3.94	.000	.15
Total Test	39.90	10.88	39.27	10.21	0.792	.429	.03

Note. "Mean percentage of correct answers.

Table 5

Differences in Percentage of Correct Answers in the Test as a Whole and in the Six Knowledge Areas Among Fourth-Year Grado Students According to 'A' Level Stream Studied

Knowledge area	SS	df	MS	F	p	ηp^2
Developmental and Educational Psychology	1420.22	5	284.04	1.014	.409	.013
Basic Psychology	178.63	5	35.72	0.149	.980	.002
Behavioral Sciences Methodology	3608.30	5	721.66	1.710	.131	.022
Social Psychology	2187.44	5	437.48	1.100	.360	.014
Psychobiology	3912.68	5	782.53	1.669	.141	.022
Personality, Assessment and Psychological Treatment	1268.25	5	253.65	1.041	.393	.014
Total Test	449.67	5	89.93	0.781	.564	.010

Note. SS = sum of squares; df = degrees of freedom; MS = mean square; F = value of ANOVA F statistic; ηp^2 = partial eta squared.

rect answers in the test as a whole and in the different knowledge areas according to the 'A' level stream from which students came. The results obtained by fourth-year grado students are shown in Table 5, clearly showing that there are no statistically significant differences.

Regarding fifth-year licenciatura students, it can be seen that there were statistically significant differences in the percentage of correct answers in the Psychobiology area according to 'A' level stream (Table 6).

Table 6

Differences in Percentage of Correct Answers in the Test as a Whole and in the Six Knowledge Areas Among Fifth-Year Licenciatura Students According to 'A' Level Stream

Knowledge area	SS	df	MS	F	p	ηp^2
Developmental and Educational Psychology	975.22	5	195.04	0.798	.552	.013
Basic Psychology	1793.95	5	358.79	1.486	.194	.023
Behavioral Sciences Psychology	1158.37	5	231.67	0.740	.594	.012
Social Psychology	1807.98	5	361.59	1.001	.417	.016
Psychobiology	5914.75	5	1182.95	2.860	.015	.044
Personality, Assessment and Psychological Treatment	2400.85	5	480.17	1.731	.127	.027
Total Test	880.04	5	176.01	1.677	.140	.026

Note. SS = sum of squares; df = degrees of freedom; MS = mean square; F = value of ANOVA F statistic; $\eta p^2 = \text{partial eta squared}$.

Mean Percentage of Correct Answers in the Test as a Whole and in the Six Knowledge Areas Among Fourth-Year Grado Students and Fifth-Year Licenciatura Students According to 'A' Level Stream Studied

Table 7

V. I.							Knowled	Knowledge Areas							
M SD M M M SD M M SD M M M M M M M M M M<	'A' level stream	Develor and Edu Psych	pmental ıcational ıology	Basic Ps	ychology	Behaviora Metho	ıl Sciences dology	Social Ps	ychology	Psycho	biology	Person Assesstr Psychobi Treat	nality, nent and iological ment	Tota	l Test
31.69 15.89 37.55 15.49 27.03 19.35 63.89 19.45 36.75 22.26 46.85 14.83 40.80 $28.47 17.20 37.46 15.35 29.59 20.63 61.71 20.40 40.34 21.71 44.85 15.04 40.30$ $30.21 16.96 36.67 16.78 27.50 21.66 60.48 19.92 31.39 19.43 43.50 19.03 38.60$ $37.50 23.39 32.31 10.03 6.67 9.12 57.14 20.20 33.33 16.67 38.00 13.04 33.00$ $43.75 26.52 34.62 5.44 8.33 11.79 35.71 10.10 41.67 11.79 30.00 14.14 33.00$ $26.85 14.19 35.57 16.76 23.04 17.28 60.98 19.90 32.55 20.44 49.53 16.08 38.66$ $28.85 15.90 38.63 14.30 20.60 18.64 64.21 18.29 40.07 18.92 51.91 14.61 41.28$ $29.24 16.35 34.55 14.52 21.19 16.62 59.81 17.08 30.51 20.56 44.07 19.66 37.05$ $25.00 17.68 46.15 21.76 8.33 11.79 50.00 10.10 25.00 11.79 50.00 28.28 37.00$		M	SD	M	SD	M	SD	M	SD	М	SD	M	SD	M	SD
31.69 15.89 37.55 15.49 27.03 19.35 63.89 19.45 36.75 22.26 46.85 14.83 40.80 28.47 17.20 37.46 15.35 29.59 20.63 61.71 20.40 40.34 21.71 44.85 15.04 40.30 30.21 16.96 36.67 16.78 27.50 21.66 60.48 19.92 31.39 19.43 43.50 19.03 38.60 30.63 14.89 37.69 13.87 28.33 25.43 60.00 19.44 35.00 24.72 44.50 19.03 38.60 37.50 23.39 13.87 28.33 11.79 35.71 10.10 41.67 11.79 30.00 14.14 33.00 43.75 26.52 34.62 5.44 8.33 11.79 35.71 10.10 41.67 11.79 30.00 14.14 33.00 26.87 14.19 35.57 16.72 80.98 19.09 35							4th	year grado							
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3021 16.96 36.67 16.78 27.50 21.66 60.48 19.92 31.39 19.43 43.50 19.03 38.60 36.63 14.89 37.69 13.87 28.33 25.43 60.00 19.44 35.00 24.72 44.50 19.03 38.60 37.50 23.39 32.31 10.03 6.67 9.12 57.14 20.20 33.33 16.67 38.00 13.04 34.80 43.75 26.52 34.62 5.44 8.33 11.79 35.71 10.10 41.67 11.79 30.00 14.14 33.00 26.85 14.19 35.57 16.76 23.04 17.28 60.98 19.90 32.55 20.44 49.53 16.08 38.66 22.24 16.35 34.55 14.52 21.19 16.62 59.81 17.08 30.51 20.56 44.07 19.66 37.05 25.00 17.68 46.15 21.76 8.33 11.79 50.00 10.10 25.00 11.79 50.00 28.28 37.50 25.00 17.68 46.15 21.76 8.33 11.79 50.00 10.10 25.00 11.79 50.00 28.28 37.50	HS	28.47	17.20	37.46	15.35	29.59	20.63	61.71	20.40	40.34	21.71	44.85	15.04	40.30	10.80
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43.75 26.52 34.62 5.44 8.33 11.79 35.71 10.10 41.67 11.79 30.00 14.14 33.00 26.85 14.19 35.57 16.76 23.04 17.28 60.98 19.90 32.55 20.44 49.53 16.08 38.66 28.65 15.90 38.63 14.30 20.60 18.64 64.21 18.29 40.07 18.92 51.91 14.61 41.28 29.24 16.35 34.55 14.52 21.19 16.62 59.81 17.08 30.51 20.56 44.07 19.66 37.05 32.81 21.83 28.85 13.62 27.08 20.07 59.82 21.65 37.50 26.87 50.00 20.00 38.88 35.50 25.00 35.90 11.75 22.22 19.25 76.19 16.50 55.56 9.62 56.67 11.54 46.67 25.00 17.68 46.15 21.76 8.33 11.7	A	37.50	23.39	32.31	10.03	29.9	9.12	57.14	20.20	33.33	16.67	38.00	13.04	34.80	8.79
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26.85 14.19 35.57 16.76 23.04 17.28 60.98 19.90 32.55 20.44 49.53 16.08 38.66 28.65 15.90 38.63 14.30 20.60 18.64 64.21 18.29 40.07 18.92 51.91 14.61 41.28 29.24 16.35 34.55 14.52 21.19 16.62 59.81 17.08 30.51 20.56 44.07 19.66 37.05 32.81 21.83 28.85 13.62 27.08 20.07 59.82 21.65 37.50 26.87 50.00 20.00 38.88 37.50 25.00 35.90 11.75 22.22 19.25 76.19 16.50 55.56 9.62 56.67 11.54 46.67 25.00 17.68 46.15 21.76 8.33 11.79 50.00 10.10 25.00 11.79 50.00 28.28 37.00							5th yec	ır licenciatı	ura						
28.65 15.90 38.63 14.30 20.60 18.64 64.21 18.29 40.07 18.92 51.91 14.61 41.28 29.24 16.35 34.55 14.52 21.19 16.62 59.81 17.08 30.51 20.56 44.07 19.66 37.05 32.81 21.83 28.85 13.62 27.08 20.07 59.82 21.65 37.50 26.87 50.00 20.00 38.88 37.50 25.00 35.90 11.75 22.22 19.25 76.19 16.50 55.56 9.62 56.67 11.54 46.67 25.00 17.68 46.15 21.76 8.33 11.79 50.00 10.10 25.00 11.79 50.00 28.28 37.00	SS	26.85	14.19	35.57	16.76	23.04	17.28	86.09	19.90	32.55	20.44	49.53	16.08	38.66	10.64
29.24 16.35 34.55 14.52 21.19 16.62 59.81 17.08 30.51 20.56 44.07 19.66 37.05 32.81 21.83 28.85 13.62 27.08 20.07 59.82 21.65 37.50 26.87 50.00 20.00 38.88 37.50 25.00 35.90 11.75 22.22 19.25 76.19 16.50 55.56 9.62 56.67 11.54 46.67 25.00 17.68 46.15 21.76 8.33 11.79 50.00 10.10 25.00 11.79 50.00 28.28 37.00	HS	28.65	15.90	38.63	14.30	20.60	18.64	64.21	18.29	40.07	18.92	51.91	14.61	41.28	8.88
32.81 21.83 28.85 13.62 27.08 20.07 59.82 21.65 37.50 26.87 50.00 20.00 38.88 37.50 25.00 35.90 11.75 22.22 19.25 76.19 16.50 55.56 9.62 56.67 11.54 46.67 25.00 17.68 46.15 21.76 8.33 11.79 50.00 10.10 25.00 11.79 50.00 28.28 37.00	Н	29.24	16.35	34.55	14.52	21.19	16.62	59.81	17.08	30.51	20.56	44.07	19.66	37.05	10.10
37.50 25.00 35.90 11.75 22.22 19.25 76.19 16.50 55.56 9.62 56.67 11.54 46.67 25.00 17.68 46.15 21.76 8.33 11.79 50.00 10.10 25.00 11.79 50.00 28.28 37.00 1	SL	32.81	21.83	28.85	13.62	27.08	20.07	59.82	21.65	37.50	26.87	50.00	20.00	38.88	13.99
25.00 17.68 46.15 21.76 8.33 11.79 50.00 10.10 25.00 11.79 50.00 28.28 37.00 1	Ą	37.50	25.00	35.90	11.75	22.22	19.25	76.19	16.50	55.56	9.65	26.67	11.54	46.67	3.06
	+25	25.00	17.68	46.15	21.76	8.33	11.79	50.00	10.10	25.00	11.79	50.00	28.28	37.00	12.73

Note. SS = Social Sciences; HS = Health Sciences; H = Humanities; TS = Technological Sciences; A = Arts; +25 = Access to University for over-25s.

Table 7 sets out the mean percentage of correct answers for the test as a whole and for the six knowledge areas among fourth-year grado students and fifth-year licenciatura students according to 'A' level stream. In addition, post hoc tests indicated differences between students from the Health Sciences 'A' level stream, who obtained a higher percentage of correct answers than students from the Social Sciences 'A' level stream (MD = 7.52; p = .006) and Humanities (MD = 9.56; p = .005).

Discussion

The main conclusion which can be drawn from this study is that, in spite of the changes in university organization and management (Ion & Con. 2011), curricula (ANECA, 2005; Ortega & Zych, 2013) and teaching-learning methods (Ariza, Ouevedo-Blasco, Ramiro, & Bermúdez, 2013; Quevedo-Blasco, Ariza, & Buela-Casal, 2015; Rodríguez-Moneo et al., 2010), and the resulting financial investment made by the Ministry of Education, Culture and Sport of Spain (Ministerio de Educación, Cultura y Deporte, 2003), the data obtained from this research show that there are no differences between grado and licenciatura students in the results of the objective test on Psychology knowledge. No improvement in acquisition of knowledge is thus demonstrated among grado students.

These data contrast with the results of other studies which take into account the analysis solely of specific subject areas in the Psychology qualification (Rosell & Cervera, 2013) or other qualifications (Morrondo et al. 2012), in which grado students show better acquisition of knowledge than their licenciatura counterparts.

However, results by university show that licenciatura students at the University of Granada obtain a higher score in the test on Psychology knowledge than grado students, something not observed in the other participating universities. This fact may reflect the different strategies employed by different public universities in Spain for implementing the EHEA and their impact on academic performance.

Looking at the six knowledge areas of Psychology and the curriculum followed, it can be concluded that grado students obtain a higher percentage of correct answers in the Behavioral Sciences Methodology area and a lower percentage in the Personality, Assessment and Psychological Treatment area than their licenciatura counterparts. This result may reflect the different impact of using the new teaching-learning methods proposed by the EHEA (De Miguel, 2006) on learning different knowledge areas in Psychology.

Lastly, it can be concluded that among licenciatura students there are differences in the percentage of correct answers in the Psychobiology area according to 'A' level stream studied, students from the Health Sciences stream obtaining higher scores than those from the Social Sciences and Humanities streams. This finding endorses the decision taken by some universities to assign the qualification in Psychology to the Health Sciences branch, a decision that universities had to take when publishing their curricula, established by the *Real Decreto 861/2010*, *de 2 de Julio* of Spain.

As a recommendation, the importance of better coordination between Spanish universities is emphasized for achieving homogeneity in the curricula and teaching-learning methods for the qualification in Psychology. This will enable the primary aim of Bologna —the harmonization of studies in Europe—to be achieved; for this to occur it has first to be achieved in Spain.

Regarding the limitations of this study, convenience recruitment of sample and sample size in this study must be acknowledged. However, it must equally be stated for the record that when potential students were being assessed, only six Spanish universities complied with the participation requirement of teaching both fourth-year grado studies and fifth-year licenciatura studies in Psychology and these were the six universities involved in this study; although once these universities had been contacted students were recruited using convenience sampling. Along similar lines, another limitation is the impossibility of carrying out a replica study since the licenciatura in Psychology is no longer taught at any Spanish universities: therefore it is no longer be possible to compare grado and licenciatura in Psvchology.

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