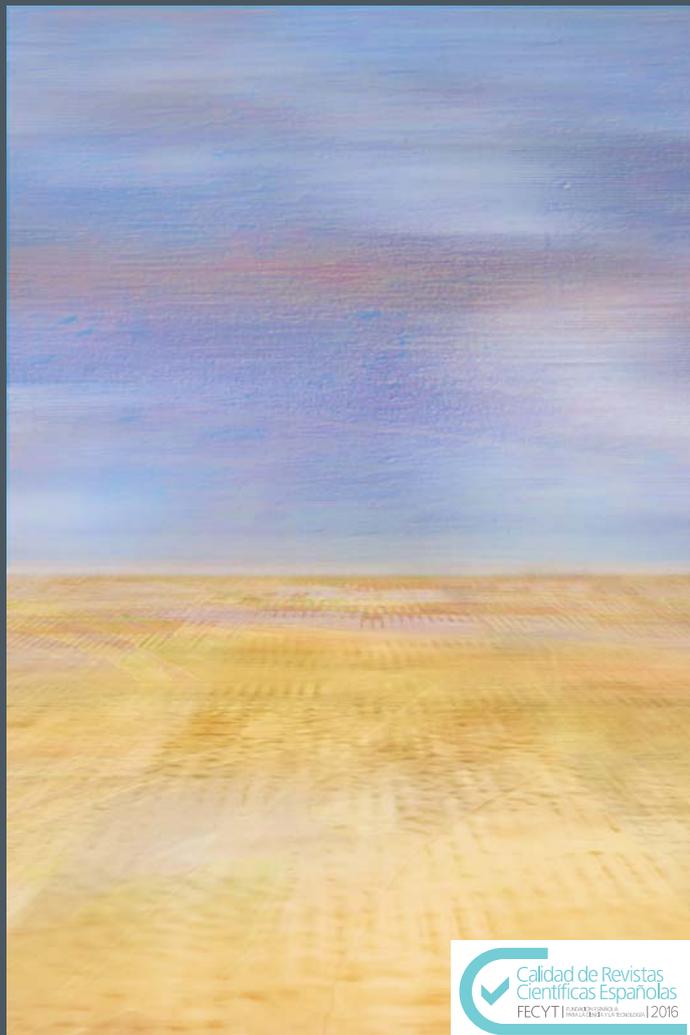¿Cómo aprende el profesorado universitario español?
Comprendiendo el uso de estrategias de aprendizaje

How do Spanish university teachers learn? Understanding the use
of learning strategies

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Abstract

This paper examines how Spanish university teachers learn in the workplace and how, that being the case, the place of residence influences their use of learning strategies. Methodology: It draws on quantitative data from the 2012 PIAAC (Programme for the International Assessment of Adult Competencies) survey in a European sample of 276 respondents, comparing Spain with the other European countries participating in PIAAC (Cyprus, Czech Republic, Denmark, England, Flanders, France, Italy, Netherlands, Northern Ireland, Poland, and Slovak Republic). Statistical analyses of a descriptive and inferential kind were performed, reporting its effect sizes. Results: On the one hand, results reveal that university teachers tend to use a high number and array of learning strategies, emphasising their ability to adapt to everyday work challenges. A better look, though, indicates that Spanish university teachers do not relate new learnings with those previously acquired in comparison with other European university teachers. On the other hand, university teachers show a medium-low level of learning at work, being Spain the country with the highest level of learning achieved -measured by learning from co-workers or supervisors, learning-by-

doing from the tasks performed, and keeping up to date with new products or services. Discussion: Findings are discussed through the impact of learning strategies on university teachers' performance, whereas new lines of research are opened up.

Keywords: workplace learning; learning strategies; university teachers; comparative analysis; international studies

Resumen

Este artículo analiza cómo el profesorado universitario español aprende en el puesto de trabajo y si el país de residencia influye en el uso de estrategias de aprendizaje. Metodología: Para ello se sirve de los datos cuantitativos recogidos con la encuesta PIAAC 2012 (Programa para la Evaluación Internacional de las Competencias de Adultos); en la que se obtuvieron 276 respuestas de docentes europeos. Se llevan a cabo análisis descriptivos e inferenciales, reportando el tamaño del efecto, a fin de comparar las respuestas de la muestra española con las respuestas del resto de países europeos participantes (Chipre, Dinamarca, Eslovaquia, Flandes, Francia, Inglaterra, Italia, Irlanda del Norte, Países Bajos, Polonia y República Checa). Resultados: Los resultados muestran que el profesorado universitario suele utilizar un mayor número y variedad de estrategias de aprendizaje, lo que remarca su habilidad de adaptación a los retos laborales del día a día. Una mirada más detallada de los docentes universitarios españoles sugiere que estos no relacionan los nuevos aprendizajes con los anteriormente adquiridos, en comparación con otros docentes europeos. Asimismo, los profesores universitarios muestran un nivel medio de aprendizaje en el puesto de trabajo, siendo España el país con mayor nivel de aprendizaje adquirido vía el aprendizaje con otros compañeros o supervisores, el aprendizaje mediante la realización de tareas y el reciclaje sobre nuevos productos o servicios. Discusión: El artículo concluye con una discusión de los resultados asociada al impacto de las estrategias de aprendizaje en el desempeño profesional del profesorado universitario y con la propuesta de futuras líneas de investigación.

Palabras clave: aprendizaje en el puesto de trabajo; estrategias de aprendizaje; profesorado universitario; análisis comparativo; estudios internacionales

Introduction

Studies conducted by Espinosa et al. (2010), Guyton and Farokhi (1987), and Javaloyes (2009) indicated that university teachers training courses

have an impact on their professional development by improving their role in the classroom, and increasing their teaching effectiveness. Indeed, lifelong learning benefits teachers' professional development, motivation, enthusiasm and students' performance (García, 1998; Ho, Watkins, & Kelly, 2001; Trigwell, Prosser, & Waterhouse, 1999). Teachers enrol in lifelong learning activities in order to develop and support their teaching roles (Beaty, 2008; Polk, 2006), integrating formal and informal learning (Gerken, Beausaert, & Segers, 2016) [based on lessons, and learning from experience (Marsick, & Watkins, 2001)]. In fact, learning from experience is so broad that university teachers tend to learn how to teach by learning-by-doing processes while they are doctoral candidates or early career development (Healey & Jenkins, 2003; Knight & Trowler, 2001; Viskovic, 2006), which requires a higher use of learning strategies.

This situation raises two questions: (1) how Spanish university teachers learn in the workplace, and (2) how, that being the case, the place of residence influences their use of learning strategies. This paper analyses the use of learning strategies by university teachers using big data, and establishes the position of Spain compared to other European countries. The contribution is twofold: it explores university teachers' learning strategies in a European context, and it recognises the role of the informal workplace learning (Noe, Clarke, & Klein, 2014) of university teachers to compensate the lack of a common framework that regulates the educational programme to become a university teacher.

Lifelong Learning in the Workplace

Billett (2010) indicated the perils of confusing lifelong learning with lifelong education —'learning' and 'education' concepts are not equals (Rivera, 2009). In order to unify the framework, we start with Faure et al. (1972), who made visible the concept 'lifelong education' in their report. Even though they defined lifelong education as 'the master concept for educational policies in the years to come for both developed and developing countries' (p. 183), the concept remained marginal in practical terms (Nafukho, Amutabi, & Otunga, 2005), until the arrival of 1996 Delors report. Delors stated the need of rethinking about lifelong education as an essential alternative form for responding to the requirements of labour market. It encompasses learning at all ages and groups; covers formal, non-

formal and informal patterns of learning; and leads to improvement of personal and group quality life (Dave, 1976; Delors, 1996). On the contrary, lifelong learning is a socio-personal process and a personal fact. As such, 'it is conceptually distinct from an educational provision that constitutes an institutional fact' (Billett, 2010, p. 401).

The consideration of alternative models of education triggered the interest of many scholars who have tried to understand and explain informal learning (Coombs, 1985; Eraut, 2004; Fernández-de-Álava, 2014; Marsick & Watkins, 1990; Schugurensky, 2000; Straka, 2004). Informal learning is not new and it is usually defined in contrast to formal learning addressing the main differences regarding design, focus, credibility, or certification. Nevertheless, some authors (i.e. Billett, 2002) avoid this dichotomy by affirming that there is an overlap between formal and informal learning.

According to Fernández-de-Álava (2014), informal learning is acquired through professional practice and is propelled by challenges that appear in daily activities. That is why she maintains the closer relationship between informal learning and working, constituting a major part of the learning undertaken by professionals. The emphasis given to the unstructured workplace learning in organisational learning contexts (Arrow, 1962) promotes that the workplace is viewed as a rich environment for learning (Noe, Clarke, & Klein, 2014) where much informal learning at work is narrative, collaborative, and socially constructed (Boud & Middleton, 2003; Brown & Duguid, 1991; Fernández-de-Álava, 2014; Hager, 2001; Marsick, Fernández-de-Álava & Watkins, 2015) by means of discussion, mentor/coach interaction, Communities of Practice (CoPs), or collaboration (Cheetham & Chivers, 2005; Guile & Griffiths, 2010; Kirkman, Mathieu, Cordery, Rosen, & Kukenberger, 2011; Lave & Wenger, 1991; Wenger, 1998). Nonetheless, in each learning task individuals' beliefs, values, histories, and prior socialisation (Marsick, 2009) are involved. In searching for the perceptions of teachers regarding the workplace conditions for learning, Hodkinson & Hodkinson (2007) suggested that individual's positions and dispositions affect workplace learning. Fernández-de-Álava (2014), Hoekstra et al. (2009) and Marsick (2009) went back to this outcome stating that individual preferences for learning are influenced not only by individual perspective but also by organizational factors (i.e. leadership, culture, norms, resources, incentives).

Teaching and Learning Strategies

Kirby et al. (2003) stated the importance of doing research on informal learning in the workplace considering learning strategies as an employee's mechanism to learn informally. Then, a first step in recognising learning strategies in the workplace is to define them.

At their heart, learning strategies are intentions that are adopted, personally or professionally, in order to acquire knowledge, skills or attitudes (Curry, 1983; Gutiérrez, García, & Vieira, 2012; Lozano, 2000; Sadler-Smith, 1996). They are the basis of lifelong learning (Artelt et al., 2003). According to Bernardo (2004), learning strategies are cognitive tools that every person uses to solve or complete a certain task, and that consequently encourage learning and provide knowledge. Likewise, learning strategies are metacognitive abilities that help to structure the individual learning process (OECD, 2011) underpinned in self-regulated learning theories (Kolb, 1984).

In organisational settings, learning strategies are used as indicators of informal learning due to the lack of studies measuring the time spent on informal learning and its impact on employees' performance, causing that the benefits of employees' knowledge and skill acquisition are usually attributed to their participation in formal learning activities (OECD, 2011).

Although research on learning strategies has been in place for many centuries, and in many settings (i.e. language, digital age), fewer studies have been conducted in the sphere of teachers' learning (Bell & Gilbert, 1996, 1999; Biggs, 2011; Hoekstra et al., 2009; Kember, 1998; Marcelo, 1994) and even less focused on learning acquired by Spanish academics. Previous research showed that the different ways of learning: (a) have an impact on active teachers, (b) increase teachers' responsibility for acquiring training (Marcelo, 2001), and (c) 'are able to consider and modify their thinking processes while engaged in a learning task' (Spruce & Bol, 2014, p. 2). According to Monereo et al. (1994), teachers and learners must stop thinking about the state of their knowledge and skills, and adapt their actions aimed at resolving problems or their daily working activity. In fact, these authors highlighted that the concept 'use of learning strategies' applies to the permanent adaptation to the changes demanded by work, in order to respond successfully to these changes.

Bernardo (2004) suggested that teachers must be willing to: (a) learn permanently by selecting, preparing and organising the information to be

learnt; and (b) reflect on the how, when and to what end they should use the learning strategies available to them. In this regard, learning strategies are used depending on the activity involved, for example: reasoning or thinking; tackling a task successfully; identifying a problem; solving this problem; comparing; or analysing information (Bernardo, 2004; Nisbett & Shucksmith, 1987; Resnick & Beck, 1976; Sternberg, 1983).

It is worth noting that an intelligent behaviour consists of strategies, and it is mainly characterised by the frequent use of these in order to understand and solve problems (Baron, 1985). For Derry and Murphy (1986) strategies are the procedures for performing a learning task and for acquiring the required knowledge to overcome each phase. However, four fundamental barriers may be encountered: (1) failure, i.e. feelings of insecurity and negative attitude that produce de-motivation and which lead to abandonment; (2) success, i.e. a result which involves the assumption of greater responsibility and which can lead to the avoiding of obligations that would have positive results; (3) differences, i.e. adapting to the other colleagues and reflecting on the avoidance of being different; and (4) change, i.e. resisting changing behaviour to fear stepping outside the comfort zone (Hunt, 1997).

Therefore, overcoming these barriers leads to a situation where learning has no limits because only when teachers 'become increasingly aware of the complexities involved in teaching and learn how to think systematically about them so they can better assess their own performances' they will be effective teachers (Hammersness et al., 2005, p. 375). Understanding how teachers learn is the first step to help teachers to improve their practice (Hammersness et al., 2005), in order to get an effective practice (Billett, 2001).

Teacher Training in Spanish Universities

In 1999, European countries set up the European Higher Education Area (EHEA) to promote European citizens' mobility and employability considering universities' involvement. In order to follow the requirements of the EHEA, some Spanish universities and colleges implemented their own strategic training plans; considering that the location of courses and faculty developers or education experts depends on objectives, topics and organisations (ICED, 2014).

We include some examples to get a slight idea of these distinctions. The University of Deusto has its own Plan for Teacher Training and Development in order to implement the educational model of competences and values. According to Elexpuru et al. (2009), this plan is based on adult learning, experienced learning and research conducted by teachers. Likewise, the Autonomous University of Barcelona or the Open University of Catalonia are in charge of their staff training, through their own staff developmental units.

Situating academic development in the Autonomous University of Barcelona, its staff developmental unit developed a unique course aimed at those university teachers with a 5-year (or less) experience. The aim is to increase teaching competences (i.e. interpersonal, communication, scheduling, work group, and innovation), the use of instructional materials, and different assessment systems.

Nevertheless, questions have risen in the literature and in practice as to how these training programmes respond to the needs of university teachers. Feixas, Fernández, Lagos, Quesada and Sabaté (2013) and Ion and Cano (2012) concluded that Spanish university teachers' training and their professional development is determined in part to lack of time and motivation. There is no paradox to this question when we know that due to these few chances of developing their profession, teachers opt for learning informally (Marsick & Watkins, 2001), which led us to think about the differences between extrinsic and intrinsic motivation.

Studies of teachers confirm this relation of intrinsic motivation in the learning and workplace (Hoekstra et al., 2009). In this regard, some specific researches illustrate how teachers learn through reflection and action (Diesel & Colbert, cited in Marsick & Watkins, 2001); through interactions (Jurasaite-Harbison, 2008); by getting ideas from others and reflecting on their practice (Hoekstra et al., 2009); and through relationships (McNally et al., 2004).

Given that university teachers have more opportunities to enrol in formal professional development programmes, we formulate this study hypothesis: there are significant differences in the use of learning strategies between Spanish university teachers and the rest of the European countries.

Methodology

This paper analyses university teachers' learning strategies, establishing the position of Spain compared to other European countries. To this end, we use the abovementioned hypothesis to contrast the existing scientific literature. It draws on quantitative data from the 2012 Programme for the International Assessment of Adult Competencies (PIAAC) survey, aimed at assessing reading comprehension, the capacity for calculation and problem solving in computer-based environments of the adult population (MECD, 2013). Especially we considered two key variables: (1) the use of learning strategies in an organisational context; and (2) the 'index of learning at work', measured by learning from others, learning-by-doing, and keeping up to date.

Sample

The population range embraces all persons aged between 16 and 65 inclusively, with residence in the country, regardless of their citizenship, nationality or mother tongue. 23 countries participated in the PIAAC, 11 of them are EU members. The sample was stratified in two stages, which in the case of Spain includes firstly the selection of 1,200 census sections –list of registered voters–, and secondly, the residents of these sections (12 persons from each of these). Overall, the sample was composed of 157,000 responses. Spain obtained a final sample of 6,055 Spanish respondents. An 8-month schedule of data collection took place, that is, from September 2011 to May 2012.

Table I shows the sample distribution by EU countries of university teachers who participated in the 2012 PIAAC survey. After removing those cases with missing values and teachers in other educational stages rather than higher education institutions, the sample is constituted of 276 participants. There is a greater presence of university teachers from Denmark (21.7%) and England (13.8%), whereas Spain is one of the countries in which university teachers participated less (5.1%). The sample shows a balanced distribution from a gender perspective: 47.1% men and 52.9% women.

TABLE I. Distribution of the university teachers participating in the 2012 PIAAC according to gender and EU country

Country	Gender	University teachers % (n)	Total (n = 276)
Cyprus	Male	15.2% (10)	4.3%
	Female	1.1% (2)	
Czech Republic	Male	20.8% (10)	6.5%
	Female	6.1% (8)	
Denmark	Male	14.2% (26)	21.7%
	Female	10.6% (34)	
France	Male	9.6% (8)	5.8%
	Female	6.2% (8)	
Italy	Male	18.4% (7)	5.8%
	Female	7.1% (9)	
Netherlands	Male	16.2% (12)	8.7%
	Female	7.5% (12)	
Poland	Male	21.7% (10)	8.0%
	Female	5.6% (12)	
Slovak Republic	Male	14.3% (5)	2.5%
	Female	1.4% (2)	
Spain	Male	7.8% (6)	5.1%
	Female	5.2% (8)	
England	Male	35.1% (13)	13.8%
	Female	23.4% (25)	
Northern Ireland	Male	25.6% (11)	9.8%
	Female	21.9% (16)	
Flanders	Male	13.3% (12)	8.0%
	Female	5.8% (10)	

In addition, the average age of the teachers was 44.66 years (SD=12.28) while Flandes has the lowest average (M=38.64 and SD=13.73) and England the highest (M=49.37 and SD=9.85). Lastly, it should be mentioned that the proportion of university teachers with university studies (bachelor degree, master's degree or higher) is very high (94.2%)

compared with those who have post-secondary studies or less; this is a typical situation if we consider that university teachers require at least a doctoral degree in order to teach in higher education institutions.

While there is no background that supports the decision to analyse data from a comparative perspective based on the country of residence of the university teachers in the EU surveyed, we believe that it is important to understand the situation in Spain compared to the other EU countries, thereby a more international overview of the learning strategies used by university teachers can be useful to verify differences.

Instruments

The PIAAC survey is presented as a Computer-Based Assessment (CBA), like a computerised adaptive test, which should be answered in two phases and with a response time of approximately 90 minutes in total. The Background Questionnaire (BQ) involved questions such as the interviewee's educational, work and family background, as well as other issues related to the use of reading, mathematics and other professional or everyday skills. It was made up of 249 items (open, multiple-choice, Likert scale, etc.). Additionally to the profile variables, PIAAC examines different types of informal learning, 'as these contribute highly to skills acquisition' (OECD, 2011, p. 17), represented by:

– Respondents' metacognitive abilities to structure the learning process (OECD, 2011), in particular the type of use of different learning strategies in an organisational context (organisational learning). They are six items (see Table II) underpinned in student-approaches learning (OECD, 2003, 2011) and learning at work approaches (Kirby et al., 2003); items are rated on a 5-point Likert scale (1: not at all; 5: to a very high degree), initiated with the following question: 'To what extent do the following statements apply to you?'

– Item 'index of learning at work' used as a result of combining three questions regarding: learning from co-workers or supervisors, learning-by-doing from the tasks performed, and keeping up to date with new products or services. The 'index of learning at work' ranges from 0 to 5 (0: not at all; 5: to a very high degree) and is based on Arrow's (1962) idea of unstructured workplace learning.

Data analysis

The data obtained with the PIAAC 2012 survey were analysed with the statistical program SPSS v.17 Inc. using descriptive and inferential statistical analysis. This latter analysis was conducted with statistical tests for nonparametric samples: Chi-square (for pairs of nominal variables), Mann-Whitney U (for pairs of nominal-ordinal variables with two response options and as a post-hoc Kruskal-Wallis test), and Kruskal-Wallis (for pairs of nominal-ordinal variables with more than two response options). To perform inferential analysis involving the 'index of learning at work', we used One-Way ANOVA statistic. In addition, effect sizes of the significant inferential tests were reported.

Results

The outcomes presented refer only and exclusively to those data of the 2012 PIAAC survey for those university teachers that work or have worked in those European countries that participated in the survey.

Learning and learning strategies

Taking the six items on learning strategies as a single factor, it can be seen that the teachers from the different EU countries participating in the 2012 PIAAC use them to a high degree (M=4.18, SD=0.58) whereas the band of responses oscillates between using them to some degree (3.60) or to a very high degree (4.76). Also, on analysing learning strategies separately (Table II) it can be seen that in the most used strategy, 'I like learning new things' (M=4.45, SD=0.67), intrinsic motivation is part of the answer. On the contrary, 'When I hear or read about new ideas, I try to relate them to real life situations to which they might apply' is the strategy least used as a learning mechanism (M=3.87, SD=0.86), suggesting far transfer process.

TABLE II. Learning strategies use, and its usage depending on the country of residence

	Relate new ideas into real life		Like learning new things		Attribute something new		Get to the bottom of difficult things		Figure out how different ideas fit together		Looking for additional info		Learning strategies (total)	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	**M**	**SD**
Cyprus	4.08	0.79	4.33	0.65	4.08	0.90	3.58	0.90	3.75	0.97	4.50	0.52	**4.06**	**0.60**
Czech Republic	3.44	0.98	4.22	0.73	4.56	0.62	3.78	0.88	4.06	0.73	4.17	0.79	**4.04**	**0.53**
Denmark	3.82	0.85	4.67	0.48	4.43	0.67	4.18	0.83	4.22	0.78	4.37	0.71	**4.28**	**0.49**
France	4.13	0.89	4.38	0.72	4.06	0.44	4.06	0.77	4.06	0.68	4.25	0.77	**4.16**	**0.59**
Italy	4.13	0.62	4.69	0.48	4.69	0.48	4.31	0.70	4.44	0.51	4.69	0.48	**4.49**	**0.39**
Netherlands	4.08	0.72	4.21	0.78	4.54	0.51	3.29	0.95	4.00	0.78	4.00	0.72	**4.02**	**0.55**
Poland	3.91	0.61	4.36	0.58	4.18	0.59	4.18	0.66	4.00	0.76	4.36	0.58	**4.17**	**0.47**
Slovak Republic	4.43	0.79	4.43	0.79	4.57	0.53	4.29	1.11	4.43	0.79	4.57	0.53	**4.45**	**0.65**
Spain	3.64	0.93	4.43	0.65	4.07	0.47	4.21	0.58	3.77	0.73	4.64	0.50	**4.14**	**0.32**
England	4.03	0.82	4.50	0.69	4.37	0.67	4.32	0.74	4.32	0.70	4.42	0.76	**4.32**	**0.58**
Northern Ireland	3.44	1.19	4.19	0.96	3.85	1.03	3.93	1.14	3.89	1.25	4.15	1.17	**3.91**	**0.96**
Flanders	3.82	0.66	4.59	0.50	4.14	0.56	4.00	0.82	3.82	0.85	4.41	0.59	**4.13**	**0.47**
Total	3.70	0.84	4.26	0.73	4.07	0.76	3.83	0.91	3.80	0.88	4.16	0.76	**4.18**	**0.58**

Note: M: Mean, SD: Standard Deviation

Despite the high use of learning strategies, university teachers do not seem to learn at work as much as they could because the 'index of learning at work' achieves a medium-low level (M=2.32, SD=0.95) -being 0 the minimum and 5 the maximum. We consider then that learning strategies used by university teachers are not as much as linked with their informal workplace learning as they could; thus, university teachers may use the learning strategies in other settings such as non-formal training activities or even personal situations.

Learning and learning strategies from a country of residence perspective

From a perspective of comparative education, Table II also shows the type of use of the different strategies. Whereas the aim of this article is to compare Spain with the rest of the EU countries, Spain is situated, in

general, very close to the average of the use of strategies, having a central position compared to the other countries.

In Table III figures about university teachers' 'index of learning work' according to their country of residence are provided. It is possible to observe that Spain has the highest index (M=2.95, SD=1.09) indicating that even Spanish university teachers use learning strategies frequently but not more than other countries, their informal workplace learning is more frequent than other countries.

TABLE III. Index of learning at work depending on the country of residence

	Index of learning at work	
	M	**SD**
Cyprus	2.15	1.10
Czech Republic	1.66	0.52
Denmark	2.50	0.84
France	2.27	1.02
Italy	2.61	0.97
Netherlands	2.31	0.96
Poland	2.14	0.80
Slovak Republic	2.51	1.07
Spain	2.95	1.09
England	2.38	1.14
Northern Ireland	2.21	0.91
Flanders	2.12	0.86

Note: M: Mean, SD: Standard Deviation

Nonetheless, with the aim of analysing in greater depth whether these differences are statistically significant, inferential statistics were applied. Regarding university teachers' learning strategies only two showed significant differences in their scores (see Table IV).

TABLE IV. Kruskal-Wallis statistics for the learning strategies depending on the country of residence

	Chi-Square	p	η^2
When I hear or read about new ideas, I try to relate them to real life situations to which they might apply	17.05	.098	--
I like learning new things	16.50	.118	--
When I come across something new, I try to relate it to what I already know	28.84	.002*	.105
I like to get to the bottom of difficult things	28.10	.002*	.102
I like to figure out how different ideas fit together	15.97	.134	--
If I don't understand something, I look for additional information to make it clear	13.98	.234	--

Note: statistics were computed with 11 degrees of freedom; *significant differences

Once we identified that the strategies 'When I come across something new, I try to relate it to what I already know' and 'I like to get to the bottom of difficult things' perform differently depending on the university teachers' country of residence, the Mann-Whitney U test was conducted to each pair of countries, with one of them being always Spain (see Table V).

TABLE V. Mann-Whitney U statistics for those learning strategies significantly different depending on the country of residence

		Spain-Cyprus	Spain-Czech Republic	Spain-Denmark	Spain-Italy	Spain-Netherlands
Attribute something new	U		69.50	278.00	48.50	95.50
	z		-2.425	-2.173	-3.013	-2.542
	p		.018	.030	.003	.012
	r		-.475	-.426	-.590	-.498
Get to the bottom of difficult things	U	48.50				71.00
	z	-1.979				-3.079
	p	.049				.001
	r	-.388				-.604

Results suggest that the strategy 'When I come across something new, I try to relate it to what I already know' is the least used by Spanish university teachers in relation to those of Italy, the Czech Republic, the

Netherlands and Denmark. In the case of the strategy 'I like to get to the bottom of difficult things', it can be seen that Spanish university teachers make a greater use than those in Cyprus and the Netherlands.

Lastly, in order to analyse if the 'index of learning at work' is different depending of where university teachers live, One-Way ANOVA tests were conducted. Statistics show that learning strategies used by university teachers are different according to the country of residence, $F(11, 251)=1.95$, $p=.034$. Tukey's post-hoc test results indicate that Spanish university teachers (M=2.95, 95% CI [2.32, 3.58]) have a significantly higher 'index of learning at work' than Cypriot university teachers (M=2.15, 95% CI [1.45, 2.85], $p=.008$, $\omega^2=.04$).

To sum up, we cannot completely accept the hypothesis because not all of the learning strategies show significant differences in their frequency when comparing Spanish university teachers and the rest of the participant European countries.

Discussion

This article is an exploratory study that crosses national boundaries – Cyprus, Czech Republic, Denmark, England, Flanders, France, Italy, Netherlands, Northern Ireland, Poland, Slovak Republic, and Spain– with the aim of examining more robustly how Spanish university teachers learn in the workplace and how, that being the case, the place of residence influences their use of learning strategies.

How university teachers learn in the workplace? Without overlooking the fact that today's society requires people to maintain an attitude of lifelong learning in order to respond successfully to the challenges encountered, it does not seem odd that the most commonly strategy employed by university teachers is 'I like learning new things'. In fact, it is linked to the desire for learning and for improving the quality of its implementation (Sarramona, 2002). It is also important to relate this result to voluntary nature of self-directed learning, which is usually based on intrinsic motivation. As Delors (1996) indicated, we must understand the educational society as 'an opportunity to learn and develop the capacities of the individual' (p. 35).

The 'When I hear or read about new ideas, I try to relate them to real life situations to which they might apply' strategy probably fails to obtain greater support due to the difference between reflecting on the application of new ideas in the workplace and their real and effective transfer (Baldwin & Ford, 1988; Draper et al., 2014; Yamnill & McLean, 2001), overall when this transfer is closer to a 'far transfer' process (Karbach & Kray, 2009). Nonetheless, Feixas, Fernández, Lagos, Quesada and Sabaté (2013) evidenced that activities for teacher training that develop integrated teaching skills promote higher learning and transfer. For this reason, the strategy 'transfer of new learning', and its connection with personal and organisational intend to modify the praxis, can be examined and considered in future research.

For example, the study conducted by Moreno, Quesada, and Pineda (2010), with a group of primary and secondary school teachers in Spain, showed that using work groups as a method of learning 'strengthens the effectiveness of training while inherently presenting factors that are catalysts for the transfer of learning to the professional performance of the participants' (p. 292). Other researchers have also shown specific interventions for creating situations for learning. CoPs, examined by McLaughin and Talbert (2001), are a good strategy for reforming teaching practices. Barnett (2001) indicated that the richness of university teachers must include inquiry, empathy, and reflection. Or even Elmore and Burney (1999), and Young and Kim (2010) highlighted the potential effects of coaching in university teachers; as a strategy for improving the use of competence-based assessment. Zimmerman (2002) and van Beek et al. (2014) indicated that greater use of learning strategies is often characterised by a learning-oriented person (self-regulation of their learning), which enables them to adapt their learning strategies to the immediate needs linked to particular situations. Considering these authors along with Monereo et al. (1994), the results of this study suggest that university teachers use more frequently learning strategies due to their capacity to adapt or to respond quickly to everyday work challenges. However, the medium-low level of learning work demonstrated by them makes us think that university teachers do no actually learn knowledge, skills and attitudes to their full potential even though their rapidly capacity of adaptation. Therefore, is capacity to adapt to changes [through learning strategies] one of the best university teachers' ability, or should it be their ability to learn at work?

The place of residence influences the use of learning strategies?
Specific data analysis allowed us to explore whether Spanish university teachers show significant differences in their results compared to university teachers from other European countries. Indeed, figures obtained do not confirm the hypothesis because only four of the 12 European countries show significant differences compared to Spain.

On the one hand, findings indicate that even though universities require trained teachers, Spanish university teachers update less frequently their own knowledge, skills and attitudes compared to Italian, Czechs, Netherlanders or Danish. Nonetheless, after exploring university teacher qualifications systems, neither Italian nor Czechs have specific national requirements (Eurydice, 2015b, 2015c) whereas Netherlanders or Danish are forced to attend a teaching qualification (Eurydice, 2015d, 2015e). Therefore, does the qualification system provide the answer for these differences? In what ways countries' cultural differences affect teaching qualification?

On the other hand, the learning strategy 'I like to get to the bottom of difficult things' is more used by Spanish university teachers than Cypriot or Netherlanders. Likewise, exploring the university teacher qualifications systems of these countries, we observe than even the Netherlands require a basic teaching qualification (Eurydice, 2015d), Cyprus only demands teaching experience (Eurydice, 2015f). Again, we are faced with a challenge that will meet the needs of geographic and cultural borders. Future research could be focused on exploring these differences using data provided by big dataset such as the OECD Teaching and Learning International Survey (TALIS).

Regarding the 'index of learning at work', figures only show significant differences between Spain and Cyprus -Spanish university teachers learn more than Cypriot. It is both surprising and not considering two factors. Firstly, Cypriot university teachers are hired based on their teaching experience more than qualifications what would suggest a higher 'index of learning at work'; however, there are external quality assurance agencies in Spain that regulate the Spanish university teaching profession and one requirement consists on undertaking teacher training (ICED, 2014). Furthermore, in Spain 'there is a modest economic incentive to increase the salary for those who, at the end of every six years, can evidence engagement in training or a relevant initiative with respect to their teaching activity' (ibid, p. 7).

Limitations and future perspectives

Administering an international survey with representative samples of the countries in which it applies, as the 2012 PIAAC survey, provides both empirical and theoretical framework for understanding and delving deeper into characteristics, traits, skills, etc. of involved people.

This paper has been possible as a result of the data provided by 2012 PIACC survey. Nevertheless, final outcomes obtained are not representative of the university teachers in the countries of the EU that the 2012 PIAAC included in its administration. This is, in fact, the major methodological limitation of this sort of studies; even though for some researches there are very few differences between these outcomes and those obtained from studies that use representative samples of all the EU countries.

The 2012 PIAAC survey did not collect information regarding the quality of the use of learning strategies, nor the results in terms of workplace learning and transfer of learning (see Eraut, 2008; Marsick & Watkins, 1999). This lack of information regarding the quality of the processes is one of the main problems of using overall surveys designed by others, even though they allow researchers to contrast theoretical hypotheses, because they leave out contextual and educational data important to others researchers.

It has been shown some differences between Spanish university teachers towards a greater use of learning strategies in their work environment and some of the other European countries. Although the reasons may be due to the professional training received in their country or to the socio-political and cultural context of the educational centres they operate in, or the country's own culture, the causes are not clearly identified. A promising future line would be to analyse in depth the organisational context of university teachers, and to identify those aspects that could be transferred to the rest of the EU countries which use learning strategies to a lesser extent, in order to promote greater use of learning strategies. A first step would be to extend the TALIS survey not only to pre-school and primary education teachers, but also to other educational stages such as university teachers, thereby aiding the collection of international data by researchers.

Furthermore, we wonder whether university teachers' learning is more important that their capacity to adapt to the work changes in order to

achieve a higher performance. Thus, studies regarding this topic could be a good first step forward.

Lastly, and given the methodological limitations of the 2012 PIAAC survey to this kind of analysis, it is essential to take into account for future research the use of learning strategies and their impact at an individual, group and organisational level, considering the option of identifying the individuals in order to conduct a qualitative study based on their responses. Moreover, there is a need to focus the object of study on the quality of use of learning strategies as part of the learning in the workplace (educational context), where the teacher becomes the focus of attention.

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