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9 IMPACT OF A SPANISH HIGHER EDUCATION TEACHER DEVELOPMENT PROGRAMME ON APPROACHES TO TEACHING. PSYCHOMETRIC PROPERTIES OF THE S-ATI-20 SCALE

(IMPACTO DE UN PROGRAMA DE DESARROLLO DOCENTE UNIVERSITARIO ESPAÑOL EN LOS ENFOQUES DE ENSEÑANZA. PROPIEDADES PSICOMÉTRICAS DE LA ESCALA S-ATI-20)

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ABSTRACT

The quality of teacher training at universities has been a never-ending debate among authorities and academics because of its impact on student learning. Learning to teach at the Higher Education level is not a straightforward path, and there are often few opportunities to learn how to teach at this level prior to taking on a teaching position. Universities should monitor the extent to which teachers accomplish their teaching duties and endeavour to improve their teaching skills and aptitudes, as well as their attitudes towards and commitment to students. Following the Students' Approaches to Learning (SAL) line of research, this study addressed teacher

training by analyzing the impact of a brief teaching development programme on teachers' approaches to teaching using a Spanish 20-item questionnaire (S-ATI-20), which is an updated and validated version of the Approaches to Teaching Inventory (ATI), and qualitative data. A pre-experimental design (pretest-posttest) with no control group was used. Data from 85 teachers were collected during three consecutive academic years: 2014-2015 (n = 48), 2015-2016 (n = 22) and 2016-2017 (n = 15). Findings showed that short development programmes can have a positive effect on teaching approaches; in addition, results supported a two-factor structure of the S-ATI-20, which implies that teachers may be Conceptual Change/Student-Focused (CCSF) or Information Transmission/Teacher-Focused (ITTF) while teaching. Finally, the theoretical discussion of the impact on teaching approaches gives us ground to (re)think the relation between different ways of handling teaching duties: Are approaches really on a bipolar continuum? Shall we think of approaches in terms of a matrioshka model?

KEYWORDS

Approaches to teaching, teaching approaches, teacher development programme, teacher training, higher education

RESUMEN

La calidad de la formación de los profesores en las Universidades ha sido un debate inacabado entre las autoridades y los académicos debido a su impacto en el aprendizaje de los estudiantes. Aprender a enseñar en educación superior no es un camino directo, existen pocas oportunidades para aprender cómo enseñar a este nivel antes de entrar a enseñar directamente. Las Universidades deberían monitorizar hasta qué punto los profesores cumplen con sus funciones docentes y se dedican a mejorar sus habilidades y aptitudes docentes, así como sus actitudes y el compromiso hacia sus estudiantes. Siguiendo la línea de investigación sobre enfoques de aprendizaje (SAL), este estudio atiende a la formación docente analizando el impacto de un breve programa de desarrollo en los enfoques de enseñanza a través del uso de un cuestionario en español (S-ATI-20) que no es sino una revisión y validada versión del Approaches to Teaching Inventory (ATI), así como de otra información de corte cualitativo. El diseño es pre-experimental (pretest-postest) sin grupo de control. Se recogió información de 85 profesores a lo largo de tres cursos académicos consecutivos: 2014-2015 (n = 48), 2015-2016 (n = 22) y 2016-2017 (n = 15). Los resultados muestran que los programas de desarrollo cortos tienen un efecto positivo en los enfoques de enseñanza. Además, los resultados corroboran la estructura de

dos factores del S-ATI-20, distinguiendo entre profesores que al enseñar se centran en el cambio conceptual y el estudiante (CCSF) o en la transmisión de la información y en el profesor (ITTF). Por último, la discusión teórica del impacto en los enfoques de enseñanza nos anima a (re)pensar la relación entre distintas formas de manejar las responsabilidades docentes. ¿Están los enfoques realmente en un continuo bipolar?, ¿deberíamos pensar en los enfoques como si fuera un modelo basado en una muñeca rusa (matrioshka)?

PALABRAS CLAVE

Enfoques de enseñanza, programa de desarrollo docente, formación docente, educación superior

INTRODUCTION

For decades, the quality of teacher training in the European Higher Education Area (EHEA) has been a never-ending debate among authorities and academics. Universities are eager to increase the quality of research competences and outcomes as well as of teaching. This scenario contrasts sharply with widely extended conceptions among academics summarized in mottos such as "publish or perish" and "share or shame" (González-Geraldo, 2015). Nevertheless, being an academic involves undertaking roles beyond pre-established ones such as a teacher, researcher, academic, professional and manager (see Rosewell & Ashwin, 2018), and academic development courses should go beyond improving research (Harland, 2010).

Learning to teach at the Higher Education level is not a straightforward path (Baume, 2006), and there are often few opportunities for learning how to teach at this level prior to taking on a teaching position. In fact, most European universities do not require their teachers to hold a teaching qualification (Parsons et al., 2010; Zabalza, 2009), thus it is up to teachers' own initiative to seek for training courses on teaching.

The Bologna Process initiated the creation of the EHEA which was meant to be a strategic move towards student-centred scenarios, where innovative teaching methods should activate students' learning skills (Bucharest Communiqué, 2012; Yerevan Communiqué, 2015). In addition, universities should monitor the extent to which teachers accomplish their teaching duties and endeavour to improve their teaching skills and aptitudes, as well as their attitudes towards and commitment to students.

This study addressed this topic by analyzing the impact of a brief teaching development programme on teachers' approaches to teaching following the Students' Approaches to Learning (SAL) line of research. The SAL framework was initiated by qualitative research led by Marton (1976) and the Göteborg research group in the 1970s on how students approached a learning task. Based on results, quantitative instruments were developed by scholars such as Biggs (1979) and Entwistle et al. (1979). Research gave rise to parallel studies on teachers' approaches to teaching led by Trigwell and Prosser (1996). In the following sections, a brief account of the students' approaches to learning and teachers' approaches to teaching frameworks, as well as of the relationship between approaches, training courses, and learning outcomes, will be presented.

Approaches to learning

The term 'learning' is often misused because it is not so much learning as it is 'studying' when researching into this blurry concept. In other words, the emphasis is on the process rather than on the product because student approaches to learning '… are not 'stable traits' of individuals, but 'processes' adopted during learning' (Cano & Berbén, 2009, p. 135). A person may display an array of approaches in different learning situations without changing his/her conception(s) of teaching and learning. The relationship between approaches, and between approaches and conceptions has been fully analyzed elsewhere (see Monroy & González-Geraldo, 2017).

As previously mentioned, the SAL theory originated in the research conducted by the Göteborg group, particularly thanks to the work of Ference Marton (1976). This group of researchers implemented a phenomenographic methodology which has been criticized recently because of its inaccuracies and widespread misunderstanding of initial findings (see Richardson, 2015). However, those first qualitative studies set a cornerstone for the development of instruments that would allow measuring of approaches to quantitative learning. The two most widely known instruments are the Approaches to Studying Inventory (ASI) developed by Entwistle et al. (1979) and later versions (RASI, ASSIST, see Duff & McKinstry, 2007), and Biggs's (1987) Study Process Questionnaire, subsequently followed by a revised two-factor version (R-SPQ-2F), developed by Biggs et al. (2001).

Data gathered with quantitative instruments confirmed earlier qualitative findings and identified two approaches to learning: deep and surface. In fact, these two approaches are different types of levels of processing information (Richardson, 2015): one in which the student focuses on understanding meaning when learning, and relates to and engages in the

task (Deep Approach), and one in which the student shows little commitment to his/her work and memorizes content in order to pass a course (Surface Approach) (Biggs & Tang, 2007). Research also identified a third approach (Achieving Approach) characterized by student's performance based on competition and ego-enhancement and an organization of available time targeted at achieving high grades regardless of whether contents are interesting or not (Biggs, 1987). This approach was previously coined as strategic (Entwistle & Ramsden, 1983) but was later discarded because of a lack of sufficient empirical evidence (Biggs et al., 2001).

In addition, two subscales (motives and strategies) were identified under each approach: 'The learning process complex is presumed to refer, primarily, to students' motives and strategies for learning' (Biggs, 1987, p. 19). However, recent literature suggests a more parsimonious version with two factors (Biggs et al., 2001; González-Geraldo et al., 2011; Justicia et al., 2008; Merino & Kumar, 2013). Currently, the R-SPQ-2F (Biggs et al., 2001) identifies an individual's deep and surface approach, and is one of the most frequently used questionnaires to measure approaches to learning. Nevertheless, recent research (Lindblom-Ylänne et al., 2018) warns about the latent complexity of a surface approach which could be assumed to be theoretically found within a deep approach to learning.

Approaches to teaching and pedagogical implications

It was just a matter of time before the SAL theory would influence research on teaching by introducing the concept of approaches to teaching, which gained ground in the 1990s (Soler-Contreras et al., 2017).

The first study was conducted by Prosser et al. (1994) who, after analyzing interviews with 24 science teachers, identified five different approaches to teaching: (A) a teacher-focused strategy with the intention of transmitting information, (B) a teacher-focused strategy with the intention of students acquiring the concepts of the discipline, (C) a teacher/student interaction strategy with the intention of students acquiring the concepts of the discipline, (D) a student-focused strategy aimed at students developing their conceptions, and (E) a student-focused strategy aimed at students changing their conceptions. Only the two end categories (A and E) were relevant to the subsequent development of the Approaches to Teaching Inventory (ATI) and, 'like students' approach to learning, teachers' approaches to teaching were constituted in terms of the strategies they adopt for their teaching and the intentions underlying the strategies' (Trigwell & Prosser, 2004, p. 413).

The ATI questionnaire was constructed from an initial pool of 104 items and reduced to 16 (ATI 16), later revised to 22 items (ATI 22, also called ATI-R). ATI 22 contains 14 of the original items of the ATI 16 (Trigwell et al., 2005). Similar to Biggs et al.'s (2001) R-SPQ-2F, the authors recommended using the two-scale version rather than the four-subscale one (Prosser & Trigwell, 2006). Nowadays, the ATI is a sound instrument which has been translated into many languages (see Aksoy et al., 2018; Harshman & Stains, 2017; Monroy et al., 2015). However, some serious criticisms have been raised (see Meyer & Eley, 2006). As suggested by Harshman and Stains: 'we are left to severely question both the notion of only two types of approaches to teaching and the existing tools used to measure these constructs' (2017, p. 15).

The link between approaches to teaching and approaches to learning is beyond their methodological origins as 'there is a relation between approaches to teaching and the quality of student learning outcomes' (Trigwell et al., 1999, p. 66). In addition, the relationship between surface approaches to learning and lower learning outcomes has been confirmed (e.g., Christie, 2015; Ramsden, 1992), while previous research has identified a direct association between teacher training courses and teachers' approaches to teaching (e.g., Gibbs & Coffey, 2004; Monroy et al., 2014).

If improving teachers' approaches to teaching results in better learning outcomes, then teacher training courses should focus on how teachers approach their teaching, which teaching practices are implemented, and what steps teachers take to improve their students' approaches to learning. Administering questionnaires to measure teachers' teaching approaches has some pedagogical implications, as it would enable identifying teachers' preferred approaches in specific teaching contexts and, if necessary, modifying them. Specially regarding early career academics (Ibrahim et al., 2020). Following this rationale, this study is aimed at measuring the impact of a brief teacher development programme on teachers' approaches to teaching, which was in fact one of the main uses proposed by the authors of the questionnaire (i.e. Prosser & Trigwell, 2006). In addition, the basic psychometric properties of the inventory administered (S-ATI-20) were also analyzed as it was recently adapted to a Spanish-speaking context.

MATERIALS AND METHODS

Design

A pre-experimental design (pretest-posttest) with no control group was used. The sample was selected non-randomly as participants were volunteers who attended the development programme on their own initiative.

Sample

Data from 85 teachers were collected during three consecutive academic years: 2014-2015 (n = 48), 2015-2016 (n = 22) and 2016-2017 (n = 15). Participants were recruited following ethical principles and informed about the aim of this study. All participants gave informed consent to participate. The programme was run on various occasions during the same year: three times in 2014-2015, twice in 2015-2016 and once in 2016-2017. Seventy-five percent of the sample (n = 64) was present at both pretest and posttest measures. There were 49 females (63.6%; males: 36.4%), and 61.2% of the sample had over ten years of teaching experience, while 29.4% had over 21 years of teaching experience. The mean age was 42.75, and there was multimode of 39. 41 and 47 with 6 cases each. As to whether participants had attended teaching training courses before, 42.4% reported to have never participated in such types of programmes. Since participation was voluntary and participants came from different backgrounds (engineering, social sciences, medicine, education, etc.), it was not possible to identify a shared, common discipline to all of them.

Teaching development programme

The teaching development programme subject to study lasted 20 hours and was called 'Educating at university: Keys to success'. It was introduced as a result of the strategic plan for development of a Spanish university in year 2014-2015 along with other courses with and without pedagogical contents, such as introduction to the use of specific IT programmes or research techniques and tools.

Apart from some minor changes in each edition, instructors focused on three general pedagogical contents which divided the programme into three parts, namely Problem-based Learning, Cooperative Learning, and Reflective Learning. These three parts had the same weight in terms of credits.

On the first day, instructors asked participants to complete the Approaches to Teaching Inventory (S-ATI-20) while thinking about the course they best identified with. Then, a brief introduction was given, where participants shared their interests. Next, participants split into three groups according to the three contents covered (Problem-based Learning, Cooperative Learning, and Reflective Learning) and worked together for one or two hours. Finally, they returned to the general group to hold a whole-class discussion. Each group chose a representative who shared conclusions with the rest of the group. Before the end of the session, participants were given instructions as to what to do next.

The second part of the programme comprised an online task. For 7-10 days, participants worked individually on various aspects of their subjects bearing in mind the Constructive Alignment framework posited by Biggs (2011). They had to analyze their teaching, identify one or two key aspects which would be subject to improvement, think about what they usually do in their classes and what kind of results they obtain, and reflect upon what they could do to change their routine and what kind of outcomes they could expect from such a hypothetical change. The task was supervised by course instructors who gave participants online feedback.

The third part of the programme was a face-to-face session in which instructors brought up some of the questions and topics which had arisen in the online task. They also discussed the extent to which assessment may influence students' learning practices. At the end of this session participants were asked to complete the S-ATI-20 again under the same conditions as on the first day.

A few weeks after the end of the programme the university asked participants to fill out a 'happy sheet', which is one of the most widely spread instruments to evaluate teacher development programmes (Chalmers & Gardiner, 2015). Unlike the S-ATI-20, this institutional satisfaction instrument was mandatory.

Data collection instruments

A revised version of the ATI translated into Spanish which supports the two-factor structure (S-ATI-20, by Monroy et al., 2015) was used to measure teachers' approaches to teaching. Unlike other Spanish versions of ATI, which are translations from the original ATI (e.g., Jiménez et al., 2020; Jiménez, Tornel, González et al., 2019; Montenegro & González, 2013), the Spanish version used in this study was adapted and tested for the Spanish context in a previous study (see Monroy et al., 2015). This was done in

accordance with the recommendations given by Prosser and Trigwell, as approaches to teaching (and approaches to learning) are context-dependent. These authors even suggested that 'administrators modify the items to reflect [the] context' they work in (Prosser & Trigwell, 2006, p. 416). S-ATI-20 is a 20-item hybrid inventory derived from the 16-item version (Trigwell & Prosser, 2004) and the 22-item version (Trigwell et al., 2005), where 10 items make up the Information Transmission/Teacher-Focused (ITTF) dimension and 10 items compose the Conceptual Change/Student-Focused (CCSF) dimension.

The institutional satisfaction instrument was a 12-item questionnaire within a 0-10 scale in which the participants reported their perceptions about various elements of the course: programme in general, objectives accomplished, learning activities, pedagogic resources, assessment, contents, general satisfaction, communication, quality of the materials given, attention given to participants, expertise of instructors, and instructors' ability to convey information (transmission of knowledge). Finally, the participants had the opportunity to complete an open-ended question with suggestions.

Data analysis

Data collected with the S-ATI-20 were analyzed with IBM SPSS statistical package v.22. The authors intended to conduct a Confirmatory Factor Analysis (CFA) in order to check the internal consistency of the S-ATI-20. However, the final sample (*n = 85)* was far from the 120 cases suggested as a minimum number of cases for a model with two latent factors (Wolf et al., 2013). Thus, an exploratory factor analysis (Maximum Likelihood with oblique rotation) was conducted, followed by another exploratory factor analysis forcing the solution to two factors. Reliability of the S-ATI-20 was calculated with Cronbach's alpha. Comparison of pretest-posttest measures was conducted by a dependent t-test. All analyses were run with pretest data *(n = 81)* in order to use data from the largest sample available.

RESULTS

The analysis of basic psychometric properties of S-ATI-20 showed that KMO and Barlett values were acceptable (.618 and $p < .000$, *respectively)*. The results of the first default factor analysis revealed seven factors, the first two explaining 31.15% of the variance and the other five amounting to 33.73%. The forced two-factor solution showed the following results (Table 1).

Table 1
Factor structure of S-ATI-20 forced to two factors*

	Factors	
	1	2
Item 1		.205
Item 2	.272	.409
Item 3	.364	
Item 4		.166
Item 5	.596	-.385
Item 6	.324	.202
Item 7	.441	
Item 8	.588	-.310
Item 9	.257	.250
Item 10		.474
Item 11		.623
Item 12	.437	.630
Item 13	.530	-.384
Item 14	.321	
Item 15	.214	.339
Item 16	.393	
Item 17	.681	
Item 18		.349
Item 19	.359	
Item 20	.466	

Note. Extraction Method: Maximum Likelihood. Rotation Method: Oblique. Loadings below .150 omitted. See Monroy et al. (2015) for item wording of S-ATI-20. Items in ***bold italics*** belong to the CCSF scale while the rest belong to the ITTF scale

Reliability (Cronbach's alpha) of the CCSF scale was .749 and of the ITTF scale was .655. Correlation between the CCSF and ITTF scale showed a non-statistically significant low coefficient ($r = .107; p < .000$).

Comparison of pretest-posttest measures showed a positive, non-significant increase in the CCSF scale mean score from 3.95 to 4.00, while

there was a statistically significant decrease in the ITTF scale with a medium effect size (t[63] = 2.709, *p = .009, r = .32)*.

Regarding the 'happy sheet', all 12 items showed very good results with scores ranging from a minimum of 8.4 (objectives accomplished) to a maximum of 9.2 (expertise of instructors). Taking all items and all three courses together, the mean result was close to an outstanding performance (8.7 out of 10).

The qualitative data gathered with the final open question were analyzed descriptively. There were 21 written comments ranging from brief comments such as 'I loved the course, thanks!' [T19-16/17] to more complex reflections with sound suggestions. Comments were grouped and categorized by meaning while some (*n = 12)* fell into various categories. Fourteen comments emphasized the relevance of the course, ten comments highlighted the need to increase the duration of the course or restructure the schedule according to time available, eight comments showed how important the contents and the environment were for reflection, five comments pointed at the excellence of the instructors, and two comments suggested that this kind of courses may also be of interest to students.

In addition, participants suggested changing online activities in order to improve the teaching process in aspects such as meeting students' needs more effectively, fostering a connection between teaching and professional activity, and using evaluation rubrics, among others.

DISCUSSION

Although the factor structure of the S-ATI-20 could not be replicated using a default (non-forced) exploratory factor analysis, the two-factor solution confirmed the expected two-factor structure. There were, however, two issues on the ITTF scale worth discussing. First, the reliability of the CCSF scale is acceptable (> .7) if following George and Mallery's (2003, p. 231) classification, while the reliability of ITTF is questionable (> .6). This supports earlier results (e.g., Monroy et al. 2015) where CCSF was acceptable (.746) and ITTF was questionable (.600). In both studies, the correlation between factors was insignificant, which suggests that the two scales are not related to one another in contrast to results from some studies (e.g., Goh et al., 2014), and points at using orthogonal rotation methods. The weak reliability of the ITTF scale in comparison to the CCSF scale also confirms findings from studies which administered earlier versions of the ATI (Prosser & Trigwell, 2006).

Second, some items loaded weakly and/or on the two scales simultaneously. Researchers usually discard items with loadings below .3 when running default exploratory FA (Touliatos et al., 2001). The results of the present study revealed three ITTF scale items (1, 6 and 9) with loadings below .3 and one with loading below .2 (item 4). CCSF item 6 ('In this subject I concentrate on covering the information that might be available from key texts and readings') and item 9 ('In this subject I structure my teaching to help students to deal with the assessment') appeared in both factors, which suggests a discrepancy as to how to interpret their underlying meaning. In addition, item 4 ('It is important to present a lot of facts to students') and item 6 behaved incongruently in Monroy et al.'s (2015) proposal and reached loading below .3. Thus, terms such as 'facts' or 'information' should no longer be considered transmission of concepts and might theoretically be a '… starting point for more complex teaching processes in which imparting and transmitting information is the first step' (Monroy et al., 2015, p. 178).

In light of these results framed under the SAL research, an inclusive model that envisions approaches as matrioshka dolls, in which there may be a positive and significant correlation between approaches rather than on a bipolar continuum (González-Geraldo et al., 2011), may be worth considering. Yet, neither the bipolar continuum nor the matrioshka model fits the results of this study, which might point at a third scenario, one where the matrioshka dolls are next to one another (and not embedded one inside another). This scenario would show that approaches are independent and may better reflect the reality under study (Monroy et al., 2015). Nevertheless, the fact that some items have loadings above .3 under both factors (i.e. approaches) requires further analysis and possibly a rewording of the Spanish version. In contrast, item 2 did not show unusual loadings while prior research (e. g., González-Geraldo & Monroy, 2017) recommended rewording.

Special attention should be given to items 6 and 9, both with low and double loadings yet with the highest loading on the wrong scale (i.e. CCSF, while they are in fact ITTF items). In particular, item 9 refers to assessment ('In this subject, I structure my teaching to help students to deal with the assessment'), which very often is the procedure many students focus on solely, as their main study goal is passing a course (González-Geraldo & Del Rincón, 2013). It is noteworthy that an item which conveys the idea of 'passing tests' is found under the CCSF scale in this study. A question that arises is: Can a complex approach to teaching be developed when teaching focuses mainly on assessment?

As to the effects of the programme on teachers, the findings reveal a statistically significant support of what might be considered a quality

improvement of teaching approaches because the ITTF score decreased after participation in the development programme. That is, teachers were less focused on transmitting information – and on themselves – after learning some pedagogical contents and having the opportunity to share teaching experiences with peers and experts in education. This result supports other studies (e.g., Gibbs & Coffey, 2004) that showed a direct and positive relationship between participation in a teaching programme and an improvement of approaches to teaching measured with the ATI.

It is, however, striking that such a short programme (20 hours) indeed fostered reflection among academics about how and why they teach, changed their perception of key participants in the process (i.e. students and themselves), and modified the role that transmission of information plays in their teaching. Furthermore, if the 20-hour duration of this programme is compared to the minimum of one year recommended by Parsons et al. (2012), it is indeed a very positive outcome. Nevertheless, 'any impact on teachers tends to flourish after an incubation period and it is unusual to detect changes as quickly as those found in this study' (González-Geraldo & Monroy, 2017, p. 130).

Qualitative results show that the participants thought the programme was very interesting and relevant: 'Much needed course' [T1-14/15]; 'This is an essential course for any university teacher… very useful… '[T16-15/16], although also quite short for its aims. Participants agreed that the programme should be longer: '…it deserves a whole academic course…' [T3-14/15]; 'It was too short. It will be of great interest to plan a longer course, maybe 50 hours…' [T20-15/16], or restructured: 'Too much content for such little time' [T1-14/15]; '… content should be restructured to fit available time' [T15-14/15]. These findings pose the question as to whether a longer teacher programme would bring about more dramatic changes to teaching approaches. Considering the comments made by two participants who suggested adapting the programme to students (T17-15/16 and T18-15/16), would approaches to teaching be related to approaches to study/learning and, therefore, to learning outcomes (see Prebble et al., 2004)? How does deep reflection by teachers on their own approaches to teaching influence the advice they give to their students (Päuler-Kuppinger & Jucks, 2018)? As suggested by some researchers in relation to approaches to teaching, pedagogical training of university teachers should include an interaction between academics and students (Cao et al., 2018).

Finally, it is worth mentioning that the S-ATI-20 gives information on what teachers think (and their attitudes) but not on what they really do (their actions). If the embedded matrioshka model is a likely model of approaches, the only desirable outcome after implementing a teaching

programme is an increase in CCSF scale values. In contrast, an increase in the ITTF scale (assuming that it is not the opposite of the CCSF scale) would make teachers' approaches less complex and therefore they would be worse professionals. Fortunately, the results in this study point towards a non-embedded matrioshka model, where approaches are independent and not related to one another.

CONCLUSIONS

There are some limitations in this study that should be taken into account, such a low sample size and non-random sampling, which do not allow generalizing of the results. Also, teaching approaches are not the same as teaching styles, as the former are more flexible and context-dependent. Although in this study participants were asked to think about the subject/module they felt most comfortable with or liked best when completing the questionnaire (which allowed comparison because of a common starting point for all), approaches to teaching could vary more than teaching styles depending on the teaching-learning situation. The institutional culture of the university under study, deeply rooted in the Bologna pedagogical changes (Del Rincón, 2006, 2009), might have influenced the results because many participants may have taken previous courses that promoted reflections on teaching.

One of the main conclusions of this study is that even short development programmes can make a difference on teaching approaches. In this respect, there are clear positive pedagogical implications derived from this course, yet in order to expand on such implications a more detailed presentation of the programme contents would be needed, which is not the aim of this paper. In addition, the theoretical discussion of the impact on teaching approaches gives us ground to (re)think the relation between different ways of handling teaching duties: Are approaches really on a bipolar continuum? Shall we think of approaches in terms of a matrioshka model? The results of this study should be of interest to academic instructors and university staff, and could improve the quality of university teaching skills and attitudes.

The results showed a statistically significant decrease in the ITTF scale value after participating in the programme, i.e. participants were less focused on transmitting information and/or did not see themselves so much as the centre of the teaching-learning process. This suggests that programmes like the one analyzed here, which gave participants the chance to think deeply about their teaching intentions and actions, may have a direct impact on teachers' attitudes towards teaching. This finding was also confirmed by the qualitative data, which showed that participants not only

welcomed this kind of initiatives but also suggested an extended version of the programme or student involvement. In contrast, results from other studies (e. g., Stewart, 2014) suggest paying more attention to the impact that long-term teaching programmes may have for universities.

The results of this study support the two-factor structure of the S-ATI-20 by showing acceptable reliability coefficients and a non-statistically significant correlation between scales (CCSF and ITTF). Notwithstanding, future research should examine the loading and wording issues raised in this study. Recent findings regarding a professional learning seminar on higher education (e.g., Cassidy & Ahmad, 2019) also show the two-factor structure of this scale (English version).

Finally, deeper qualitative research may help academics to identify which teaching changes – if any – show how perceptions turn into actions. Questionnaires such as the ones used in this study give information on what teachers perceive that they think and do, but not what they really think and do. Thinking and doing do not always point in the same direction. This does not imply that participants consciously lie, but suggests that questionnaire data are only a point of view; a very important and relevant one, but just one of the many sides of the complex picture of the teaching-learning reality.

NOTAS

1 Qualitative data were numbered to keep participants anonymity while allowing identification of comments. In this case, this statement is comment number 19 made by a participant in 2015-2016.

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