Profesorado
Revista de currículum y formación del profesorado

VOL.24, Nº3 (Noviembre, 2020)
ISSN 1138-414X, ISSNe 1989-6395
DOI: 10.30827/profesorado.v24i3.8236
Fecha de recepción: 17/11/2018
Fecha de aceptación: 12/04/2020

2007-2017: A DECADE OF KEY COMPETENCES IN SPAIN.

2007-2017: Una década de competencias clave en España.

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Abstract:

The aim of this study was to determine Spanish teachers' perceptions about the competence-based curriculum model (CBCM) introduced by LOE (2006) and maintained by later legislation, ten years after its deployment. Participants were 1408 Spanish Primary and Secondary School teachers (719 women and 689 men). Participants answered an *ad hoc* questionnaire consisting of a 23-item, five-factor scale (beliefs about the theoretical model, level of implementation of the model, difficulties

in implementing the model, resources, and professional development). The questionnaire was sent through an on-line application to all Spanish Primary and Secondary Schools. The results show that teachers perceive the importance of curricular change although their expectations are negative regarding its implementation in classrooms. They are committed to the application of the CBCM but there is still a great demand for training and contextual conditions need to be improved. Regarding the factors analyzed, women have a better consideration of the degree of application of teaching strategies or the uniformity in the implementation of CBCM, while men score significantly higher in available resources. Primary school teachers have a more favorable perception in most of the items than secondary school teachers. It is necessary to address all these difficulties observed by teachers if educational reforms are intended to have a real impact on the results of the educational process.

Key words: ***competence; curricular reform; curriculum evaluation; professional development; teachers***

Resumen:

El objetivo de esta investigación fue conocer las percepciones del profesorado español sobre el modelo de currículo basado en competencias (MCC) introducido por la LOE (2006) y mantenido por legislaciones posteriores, diez años después de su implantación. Un total de 1408 docentes (719 mujeres y 689 varones). Los participantes contestaron un cuestionario diseñado *ad hoc*, consistente en una escala de cinco factores (creencias sobre el modelo teórico; grado de aplicación del modelo; dificultades para la aplicación del modelo; recursos; y formación del profesorado) con 23 ítems. El cuestionario fue enviado mediante una aplicación on-line a todos los centros españoles. Los resultados obtenidos muestran que los docentes perciben la importancia del cambio curricular, aunque sus expectativas son negativas respecto a su aplicación en las aulas; están implicados en la aplicación del MCC; sigue existiendo una gran demanda de formación; y es necesario que mejoren las condiciones contextuales. En cuanto a los factores analizados, las mujeres tienen mejor consideración del grado de aplicación de estrategias didácticas o la uniformidad en la implementación del MCC, mientras que los hombres puntúan significativamente más alto en los recursos disponibles; los docentes de Educación Primaria tienen una percepción más favorable en la mayoría de los ítems que los docentes de Educación Secundaria; las diferencias entre docentes de las diferentes áreas de conocimiento no son relevantes. Es necesario atender a todas estas dificultades observadas por el profesorado, si se pretende que este tipo de reformas educativas tengan un impacto real sobre los resultados del proceso educativo.

Palabras clave: ***competencia; modelo educativo basado en competencias; profesorado; reforma educativa***

1. Introduction

Countries' educational systems are frequently reformed in order to improve the quality of education. Two types of social and economic pressures often drive these reforms (Calderhead, 2001; Tiana, Moya & Luengo, 2011). First, we can find those that try to improve the performance of students and avoid school failure, as well as addressing different types of social challenges, such as unemployment or social exclusion. On the other hand, education is also linked to a country's prosperity, to provide better and more skilled workers, and ensure national competitiveness and economic development (Hargreaves, 1994).

Along these lines, the Organization for Economic Cooperation and Development (OECD), through the Project Definition and Selection of Competences: Theoretical and

Conceptual Foundations (DeSeCo, 1997), attempted to establish a transfer of competences from the business to the educational domain. The OECD also established a program called the Program for International Student Assessment (PISA) in order to assess the key competences of students. In 2006, the European Union, in line with OECD approaches, proposed the European Reference Framework for key competences for lifelong learning (OJEU, 2006). The eight key competences established by this European framework are: (1) communication in the mother tongue, (2) communication in foreign languages, (3) mathematical competence, (4) digital competence, (5) learning to learn, 6) social and civic competence, (7) sense of initiative and entrepreneurship, and (8) cultural awareness and expression. The role of these key competences is to provide a level of reference for policy makers, teachers and students from different EU member states (Pepper, 2011), although there are diverse formulations of key competences and the way in which they are being integrated into compulsory education curricula across EU member states (Haslász & Michel, 2011). In Spain, the competence-based curriculum model was introduced with the Organic Law on Education (Ley Orgánica de Educación, LOE) (2006) and has been maintained with the Organic Law for Improving the Quality of Education (Ley Orgánica de Mejora de la Calidad Educativa, LOMCE) (2013).

Key competences imply a paradigm shift that goes beyond the legislative reference. First, it is necessary to understand that they should be conceived as a change in educational culture which should impact on different levels of teaching processes. With this approach, the student should not only acquire knowledge, but should be able to apply it in real, practical situations. Therefore, the competences integrate a cognitive dimension, an instrumental dimension and an attitude that allow a new approach to problem solving (Valle & Manso, 2013). Second, talking about competencies is talking about lifelong learning (Gordon, Halasz, Krawczyk, Leney, Michel, Pepper et al., 2009). Individuals should develop the ability to adapt to new learning situations that arise during their professional and personal lives.

Pedagogical innovations that follow the top-down model (the proposal arises from the political class and must be applied later in the classroom) risk ending up as no more than a terminological and bureaucratic change, without having real effects on classroom practice (Tiana et al., 2011; Valle & Manso 2013). To avoid this, the curricular reform must enact a real change in daily practice in schools, Monarca & Rappoport (2013) describe a series of actions that must be applied simultaneously at several levels: (1) the prescriptive curriculum, actions related to regulations and related documents; (2) the role of policy makers, i.e. actions regarding information, training, counseling and support of the teaching staff by the corresponding educational administration; and (3) the teaching and learning processes, i.e. actions promoted by schools, such as the elaboration of operative documents, information, training, etc.

1.1. The prescriptive curriculum

Perrenoud (2012) states that curricula should be established in terms of procedures, to be a guide for educational practices and thus avoid being a list of abstract objectives. If this change in the process is not developed, teachers may

consider that they are implementing a change which involves little more than different terminology, or, at the very best, they appreciate a novel approach but are unable to put it into practice (Monarch and Rappoport, 2013).

Moreover, we agree with Coll and Martín (2006) that the existing approach to the curriculum design in Spain acts as a brake on improving the quality of education. It is therefore necessary to place the notion of competence as the backbone of the identification of basic learning, giving it greater importance than other concepts such as standards and assessment criteria, which, although necessary, should not become the pivotal factor in the learning process.

1.2. The role of policy makers

The curricula proposed by public administrations are the basis on which teachers should work, hand in hand with support from administrations, allowing a progressive and sustained change in appropriate training (Adelman and Walking-Eagle, 2003; Caena, 2014). However, in the case of the CBCM in Spain, the results do not support this situation, something that was already highlighted by the Autonomous and the State School Councils (2008). The lack of teacher training is a constant in the research on the CBCM in Spain, as reflected in the perceptions of management teams in the study by Hortiguela Alcalá, Abella García and Pérez Pueyo (2015), or of primary school teachers in the study of Ramírez (2011).

In most cases, the results are consistent with those of Monarca and Rappoport (2013), who indicate that legislation has not been accompanied by the necessary counseling, information and training actions; there has been an absence of opportunities for participation in the process of construction of the regulations; and the educational inspection service has focused on regulatory supervision rather than advisory services.

In the field of teacher training, isolated proposals have been developed for teaching activities that promote the development of basic skills among schoolchildren. Examples can be found in the study by Sierra-Arizmendiarrieta, Méndez-Giménez, and Mañana Rodríguez (2013), in relation to programming from an interdisciplinary perspective, or in the work of Rico and Lupiáñez (2008), regarding the treatment of mathematical competence.

1.3. Teaching and learning processes

Results from the two previous sections emphasize the idea that educational reforms need to be sequenced in order to be gradually accepted, with the development of processes of reflection generating real pedagogical change (Perrenoud, 2012). The absence of this sequence leads to a lack of commitment to change, which is necessary for any complex process of reform (Fullam, 2002), with different consequences in the programming and teaching and assessment processes carried out by teachers.

One of the major challenges in the implementation of an educational curriculum is the design of concrete proposals to address in the classroom (Penuel et

al., 2009). The design of these teaching strategies focuses more on complex approaches than those based solely on content teaching (Benarroch & Núñez, 2015). In this sense, it is important to emphasize the relevance of moving away from traditional teaching strategies (Martín, Prieto & Jiménez, 2015). However, there seems to be a disconnect between the demands of the CBCM and teaching practice (Mendoza & Rodríguez-Pineda, 2009; Sharp, Hopkin & Lewthwaite, 2011), conditioned by a persistence of a traditional view of teaching, as in the case of Natural Sciences (Martínez Galáz & González Weil, 2014).

Other studies (Méndez-Alonso, Méndez-Giménez and Fernández-Río, 2016; Monarca and Rappoport, 2013) describe how teaching staff have fully incorporated competences in their lesson planning, although in practice their level of development is low. On the other hand, assessment poses great difficulties for teachers within the CBCM, which they usually resolve by implementing traditional assessment strategies, but using the new terminology (Monarca and Rappoport, 2013).

The main agent of any educational change is the teacher, especially if the change must be methodological. This is one of the conclusions of the European Commission study carried out by Gordon et al. (2009). Previous studies from different countries have shown that teachers' initial beliefs (Brown, Chaudhry, and Dhamija, 2015), attitudes (Zhao, Chee Mok, and Cao, 2016) or its previous relationship with the administration (Hardy, 2015) determine to a large extent the real actions in favour, against or passively towards the proposed change.

2017 marked the tenth anniversary of the introduction of the CBCM in Spanish schools in 2007, one year after the LOE (2006) was published. Curricula are a means for States to address educational reforms, allowing them to organize the educational intentions associated with a specific context with specific demands (Gimeno, 2006). Those proposed by the LOE (2006) and LOMCE (2013) in Spain have been no exception. The present research shows the study in the Spanish context; however, its conclusions are important at an international level since the curriculum reform oriented towards competence learning is a global movement. We believe that the Spanish case, with more than ten years of experience, can increase the understanding of this process in the educational community.

The aim of this study is to determine Spanish teachers' perceptions of the curriculum change in Spain in the last decade, in terms of competence-based teaching. It is examined if these perceptions differ by age, experience, gender, educational stage and speciality. Using insights from previous Spanish and international studies results are discussed.

2. Method

2.1. Participants

A total of 1408 teachers (719 women and 689 men) working in Spanish schools participated in this study. The questionnaire was sent to all schools in this country (17,747 at the time of data collection). The mean age was 43.49 years (± 8.94), and

the mean educational experience was 17.11 years (± 9.71). A total of 43.60% of teachers worked in primary schools and 56.40% in secondary schools. As regards the type of school, 78.90% of the teachers were working in a public school, while 20.00% and 1.00% did so in a charter or private school, respectively. Finally, 83.20% of the participants had a permanent contract, 16.60% had a temporary contract and 0.20% were temporarily unemployed.

2.2. Instrument

Data were collected using an online survey (García-López, Gutiérrez, Pastor-Vicedo and Romo, 2018), which had two parts. The first provided descriptive information on the teachers (age, gender, experience, type of school, educational stage and teaching specialty); the second part comprised 23 items reported on a 5-point Likert scale (items 1 to 19: (1) Strongly disagree, (2) disagree, (3) Neither agree nor disagree, (4) Agree, (5) Strongly agree; items from 20 to 23: (1) Very low, (2) Low, (3) Neither high nor low, (4) High, and (5) Very high). This second part included five factors: (1) Beliefs about the theoretical model; (2) Level of implementation of the model; (3) Difficulties in implementing the model; (4) Resources; and (5) Professional development. The scale had a good internal consistency (Cronbach's alpha of .892). In the exploratory factor analysis (EFA), the great majority of factorial loads reach high values, higher than .80, and in the confirmatory factor analysis (CFA) the data suggest that the fit of the model is acceptable: Chi-Square, χ^2 (220, N=1408) = 1056,184, p<0.001, Tucker-Lewis index (TLI) = 0.935 and comparative fit index (CFI) = 0.924, root mean square error of approximation (RMSEA) = 0.066, 90% CI (0.062-0.071) and standardized root mean square residual (SRMR)= 0.054.

2.3. Procedures

Once the questionnaire was created in "Google Forms" application, it was sent twice to all Primary and Secondary Schools in Spain by email. Addresses were obtained from the Ministry of Education, Culture and Sport (http://www.mecd.gob.es/portada-mecd/). Data were collected throughout the 2015-16 school year.

2.4. Data analysis

The IBM SPSS 23.0 statistical package was used for data analysis. In the case of means comparison between two factors, Student's t-test was used. When the comparison was established across three or more groups, the Bonferroni Post Hoc Variance Analysis was applied. In order to avoid type I error (incorrect rejection of a true null hypothesis), the Bonferroni adjustment was applied with a probability level in the significance that considered the applied tests (p <.01). In all cases, effect size with Cohen's d was calculated. To analyze the results by age and experience, the data were grouped into five segments. Ages ranged from the youngest participant (24 years) to the oldest (67 years). The range of experience was from 0.2 to 43 years.

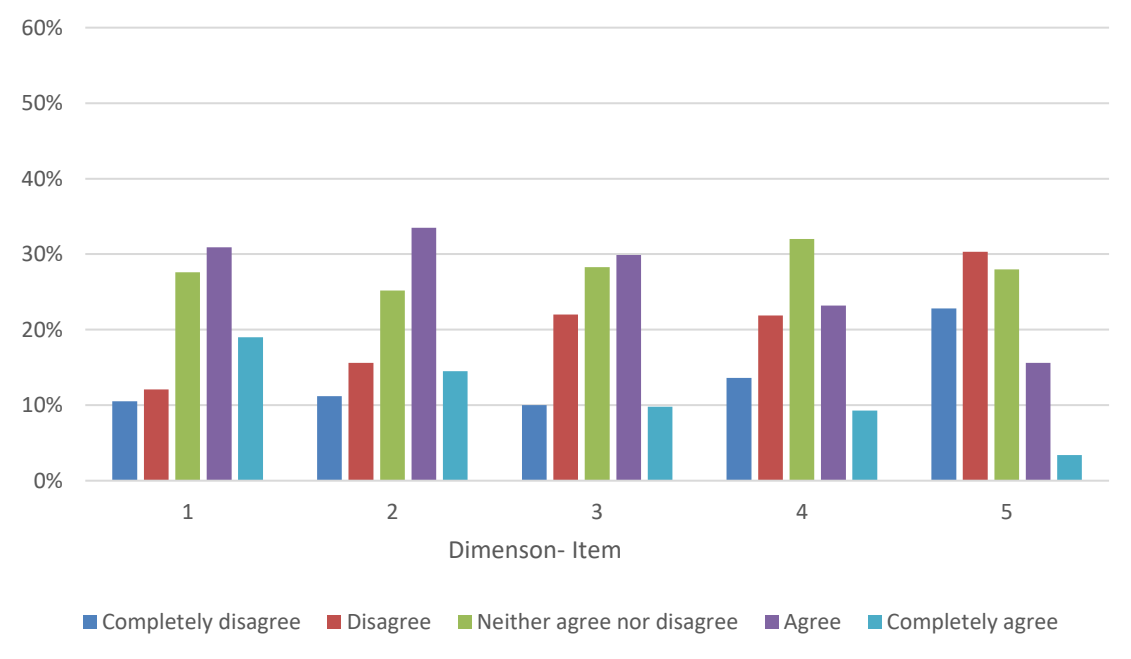
3. Results

3.1. Analysis of the results according to the dimension of the questionnaire

a) Beliefs about the theoretical model

Most of the participants agree (30.9%) or completely agree (19.0%) that the reform towards a competence-based curriculum model was necessary (I1), although 27.5% report neither agreeing nor disagreeing (Figure 1). When asked about the potential of the new model to improve on the previous approach (I2) the most common response was that teachers agreed (33.5%). However, there was an increase in the percentage of teachers who reported disagreeing (15.6%) and completely disagreeing (11.2%), which, when added to the number of those who reported not knowing, reflects that the majority of teachers do not clearly perceive the advantages of the new model. This view is confirmed by I3 (The competence-based model presents a realistic approach which can be implemented in the curriculum) and I4 (The competence-based curriculum model is improving the previous curricular approach), in which the percentage of teachers who disagree or are undecided reaches 60.3% and 67.5%, respectively. In I5, most teachers disagree (30.3%) that the benefits obtained from the CBCM balance the workload involved, while a further 22.8% completely disagree and 28% do not know. Thus, it can be considered that, despite a majority of teachers recognizing the need for a change in the curriculum, their expectations of this change being truly implemented and generating tangible improvements are negative.

Figure 1. Beliefs about the theoretical model.

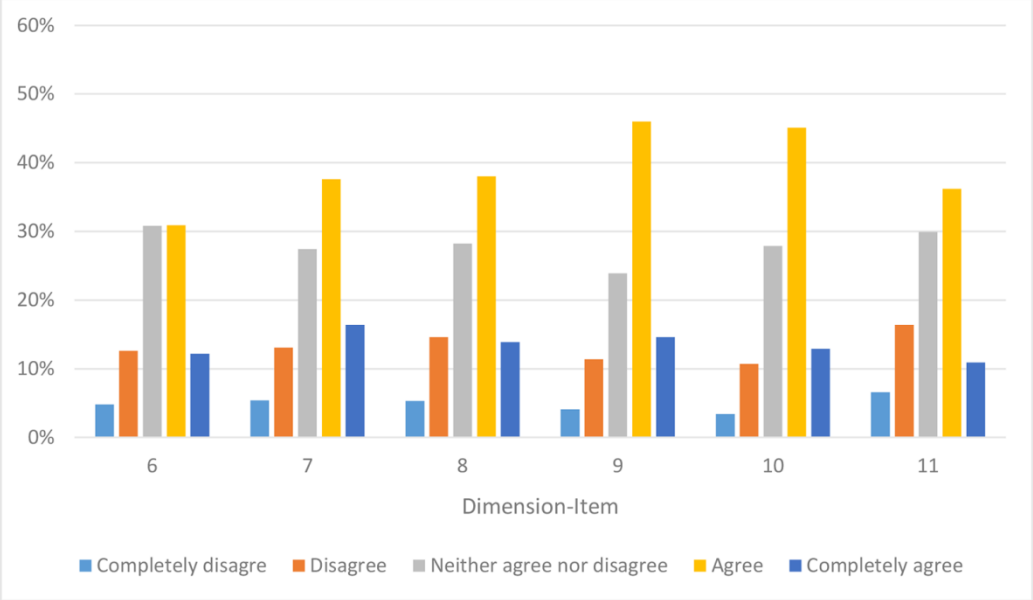


Note. 1: A competence-based reform was necessary; 2: The competence-based curriculum model has the potential to improve on the previous curricular approach; 3: The competence-based model presents a realistic approach which can be implemented in the curriculum; 4: The competence-based curriculum model is improving the previous curricular approach; 5: The workload involved in implementing the competence-based model is in balance with the benefits obtained.

b) Level of implementation of the model

Despite the participants' negative expectations reflected in the first dimension of the questionnaire, most of the teachers follow the competence-based model (I6, 39.6% agree, 12.2% completely agree), and 30.8% do so partially (neither agree nor disagree) (Figure 2). When asked about specific aspects of implementing the model, we find their responses related to lesson-planning (I7) and designing units of work (I8) yield percentages like those in the previous categories. As regards more specific curricular aspects, the percentages of responses on assessment through evaluation of competence achievement (I11) are similar (36.2% agree, and 10.9% completely agree). However, in the design of activities (I9) and teaching strategies (I10), there is a substantial increase in the level of implementation of the CBCM (46.0% agree and 14.6% completely agree in I9; 45.1% agree and12.9% disagree in I10). These data show that teachers are committed to the implementation of the CBCM, and that the closer the interaction is to the pupils (designing teaching activities and teaching strategies), the greater is the commitment (except in the case of assessment).

Figure 2. Level of implementation of the model.



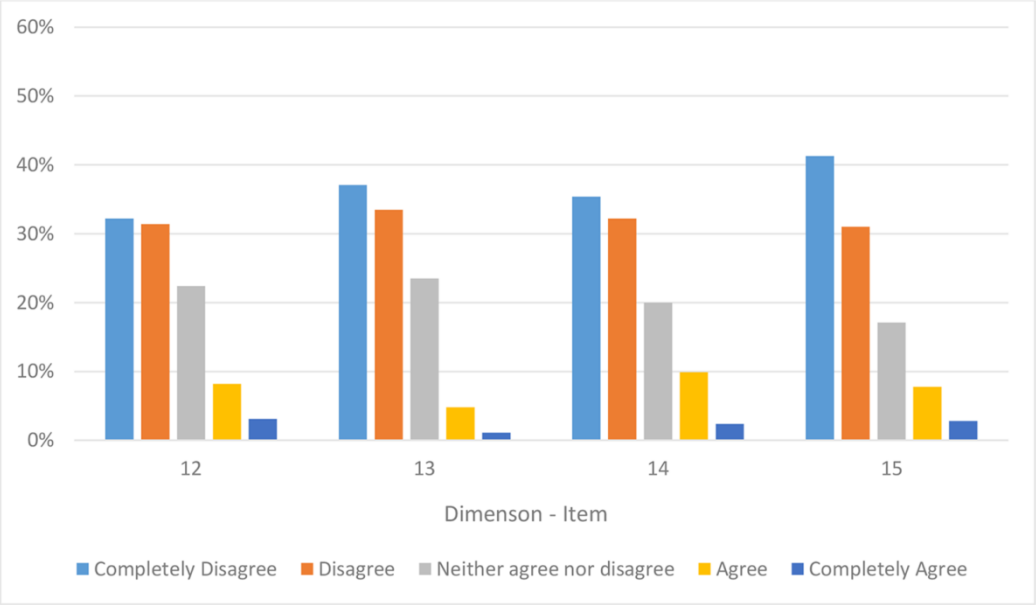
Note. 6: I use the competence-based curriculum in my teaching; 7: My lesson planning follows the competence-based curriculum model; 8: I take into account the competence-based curriculum when designing units of work; 9: I design teaching activities which aim to develop the key competences; 10: The teaching strategies I use are in line with the competence-based curriculum model; 11: I evaluate my students' achievement of competences when assessing their learning.

c) Difficulties in implementing the model

Participants clearly perceive that the CBCM is not uniformly implemented across all the teaching staff (I12, 34.1% disagree and 32.2% completely disagree) and across all schools (I13, 33.5% disagree and 37.1% completely disagree) (Figure 3). Teachers are even more critical with regard to the clarity of the guidelines set by the educational authorities (I14, 32.2% disagree and 35.4% completely disagree) and the lack of access to appropriate advice on competence-based teaching (I15), with 31%

reporting they disagree and 41.3% reporting they completely disagree. Consequently, we can state that teachers are dissatisfied with how the model has been put into practice and are especially discontent with the support and advice provided by the educational authorities.

Figure 3. Difficulties in implementing the model.

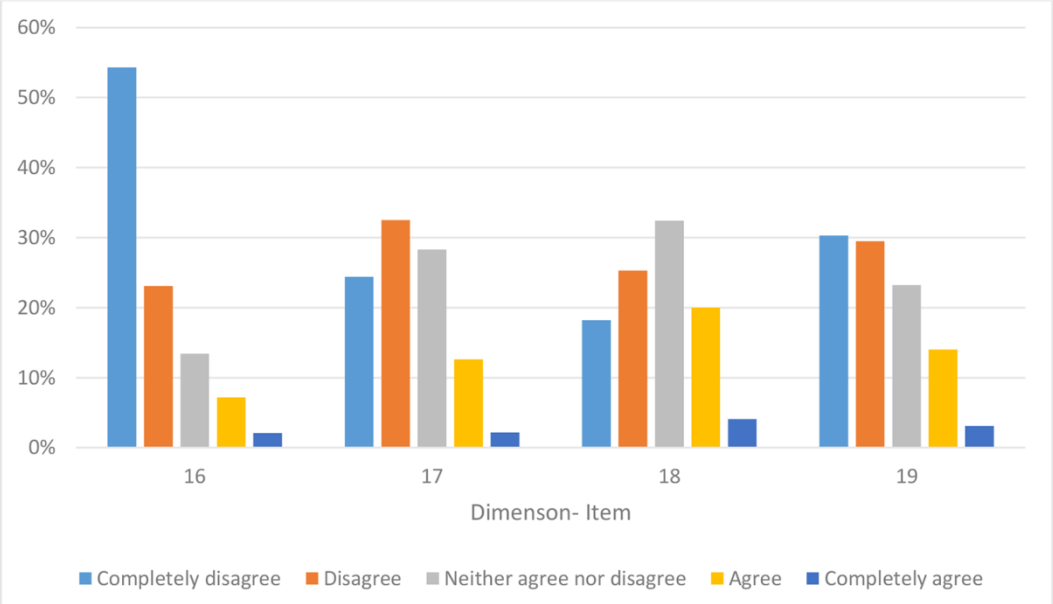


Note. 12: The level of implementation of the competence-based curriculum is similar across all the teaching staff; 13: The level of implementation of the competence-based curriculum is similar in all schools; 14; The educational authorities set clear guidelines for developing a competence based curriculum 15: When I am unsure about something related to competence-based teaching, I have access to appropriate advice.

d) Resources

The teachers are clearly critical of the financial resources dedicated to the model, especially as regards the teacher-student ratio (I16), where disagreement is 23.1% and complete disagreement is 54.3% (Figure 4). The economic resources available at the schools to implement the CBCM (I19, 29.5% disagree and 30.3% completely disagree), and the classroom materials available for competence-based teaching (I17, 35.5% disagree and 24.4% completely disagree) are two aspects on which the teachers also manifest their discontent. In this section, the only item for which the majority perception is not negative is that related to the facilities at the schools (I18), where 18.2% of teachers disagree and 25.3% completely disagree. In short, according to teachers, the amount of human and material resources is one of the limiting factors of this educational reform.

Figure 4. Resources.

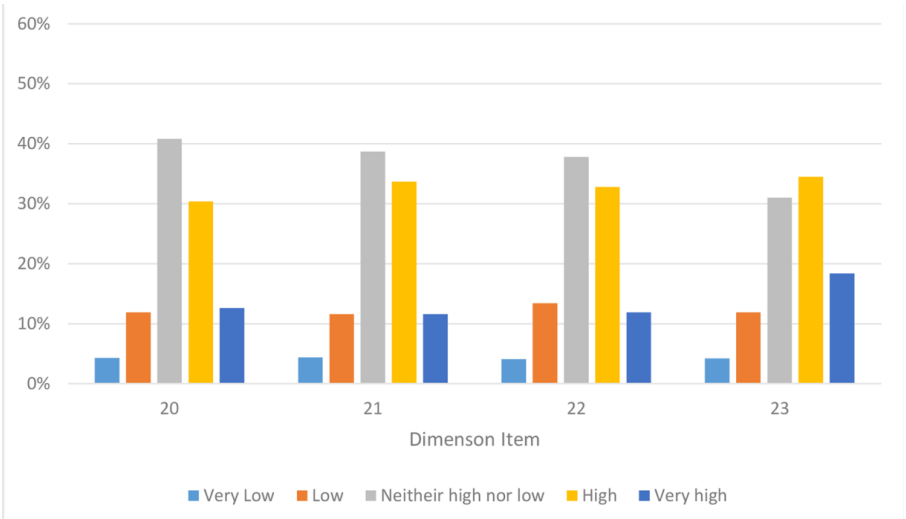


Note. 16: The number of pupils per class is suitable for competence-based teaching; 17: The classroom materials available are suitable for competence-based teaching; 18 The facilities at my school are suitable for competence-based teaching; 19: The economic resources available at my school are sufficient to implement a competence-based curriculum.

e) Professional development

Most teachers still claim there is a medium need for training in lesson planning (I20, 40.8%), in linking key competences to the specific competences of curricular areas (I21, 38.7%) and in designing activities (I22, 37.8%). In all three cases, the second largest group is that perceiving a major need for training. In the case of the training in assessment (I23), most teachers perceive the need is very high. Thus, ten years after the change to a CBCM, teachers continue to demand further training in how to correctly implement the model.

Figure 5. Professional development.



Note. 20: My need for training in lesson planning for the development of the key competences is; 21: My need for training in lesson planning to link key competences to specific competences of an area/areas of curricular knowledge is; 22: My need for training in the design of tasks to develop the key competences is; 23: My need for training in the design of tasks to develop the key competences is.

3.2. Analysis of the results according to age, experience, gender, educational stage and speciality

No differences were found in the dimension of beliefs about the theoretical model. However, in level of implementation, the results revealed significant differences in some items. Specifically, the differences were found between the first age group, that of the youngest teachers (aged under 30 years) and the other groups, with regard to designing units of work and activities in line with the CBCM (I8 and I9, $p<.01$). This scenario is repeated in the difficulties in implanting the model dimension, in which the youngest group perceive fewer difficulties in implementing the model compared to the other groups in all the items (I12, I13, I14 and I15, $p<.01$). No age-related differences were found for the RESOURCES dimension, but differences were found, however, in the professional development dimension regarding lesson planning for specific competences, designing tasks and assessment (I21, I22 y I23, $p<.01$) in the oldest age group (61 years and over).

Despite the ANOVA revealing significant differences ($p<.05$) in items 7, 9, 12, 14, 21, 22 and 23 (many of which coincided with items showing age-related differences), the post hoc Bonferroni and Tukey tests found no between-group differences.

As regards comparison by gender, differences were found in only six items. The women consider they have a higher level of competence-based teaching strategies ($p=.029$, $d=0.11$), and perceive a more uniform implementation of the CBCM ($p=.012$, $d=0.14$). The men, in contrast, score significantly higher on all the items measuring the perceptions of resources available at schools: number of students per class ($p=.020$, $d=0.13$), appropriate materials ($p=.004$, $d=0.15$), appropriate facilities ($p=.001$, $d=.18$) and sufficient availability of financial resources ($p=.013$, $d=0.13$).

Educational stage is undoubtedly the factor in which the greatest differences are found. There are significant differences in all the dimensions. In beliefs about the theoretical model, primary teachers exhibit more positive attitudes across all the items, as is the case in the following dimension, the level of implementation (in all these items, $p=000$, except in I5 where $p=.001$, and $d=0.022$ in I1). Despite both primary and secondary teachers reporting disagreement in the items related to the difficulties of implementing the CBCM, primary teachers perceive a higher level of uniformity across school and teaching staff as regards implementation of the CBCM, and they also rate higher the guidelines provided by the educational authorities ($p=.000$ in I12 and I13, and $p=.012$ in I14). Finally, the primary teachers have a better perception of the number of students per class (I16, $p=.000$) and demand more training in all aspects related to the curriculum (I20 and I23, $p<=.001$; I21 $p=.002$; I22 $p=.003$).

In none of the cases does the effect size exceed d=0.2. This finding further confirms the difficulties experienced in implementing the competence-based curriculum, regardless of age, experience, gender, educational stage and curricular speciality.

4. Discussion

The aim of this study was to determine teachers' perceptions of the shift towards a CBCM. Broadly speaking, the results reveal the strengths and weaknesses of the curriculum reform process, which are analyzed according to the dimensions established in the questionnaire we administered.

In the first dimension, beliefs about the theoretical model, the respondents coincide in the need for a change in the curriculum, but their expectations as regards its successful implication and subsequent improvements in education are negative, which is consistent with previous studies (Álvarez, 2008; Bolívar, 2008; Lleixà, Gónzalez-Arévalo, and Braz-Vieira, 2016; Monarca and Rappoport, 2013). This is easily understood if we consider the continual changes in regulations, the lack of political consensus on these reforms and their probable short-lived nature (Monarca and Rappoport, 2013).

In the second dimension, level of implementation of the model, teachers reveal their commitment to the CBCM as regards lesson planning, and this engagement with the curriculum is greater in areas involving closer interaction with students: designing teaching activities and strategies, but not in assessment. With respect to this last aspect, assessment, our results complement those obtained by Polo (2011) and Lleixà et al. (2016). These authors found that the concepts teachers decide to assess drive the lesson planning process, while also being a reference point in the introduction of competence-based teaching. This approach marks an instructional alignment in objectives, content and assessment, as proposed by Cohen (1987). Nonetheless, how to assess competences is one of the greatest obstacles teachers face when putting the CBCM into practice. This is partly consistent with the findings of Méndez-Alonso, Méndez-Giménez, and Fernández-Río (2016), who coincide in that primary school physical education teachers have fully incorporated competences in their planning, but the level of implementation is lower in practical aspects. Mateos Jiménez, García Fernández and Bejarano Franco (2016) and Sharp et al. (2011) highlight similar findings in the learning of science competences.

One of the reasons many teachers still find difficulties in integrating the key competences in aspects of task design and application of strategies and assessment may lie in the contradiction between the nature of the competences and that of the subjects themselves. Coinciding with Monarca and Rappoport (2013), the logic of the traditionally established subject areas has now to be matched to the logic of the key competences.

This situation is exacerbated by a series of stumbling blocks (including specific content, lack of integration of "knowing" and "know-how" and attitudes …), which

clash conceptually with the new curriculum model. Possibly due to this, teachers continue to find it difficult to deliver learning in an interdisciplinary manner (Lleixà et al., 2016; Pérez-Pueyo y Casanova, 2009).

In the third dimension of difficulties in implementing the model, the teachers are clearly discontent with the way the curriculum model has been put into practice, especially regarding the support and advice provided by the educational authorities. In Spain, this finding is consistent with the studies by Monarca and Rappoport (2013) and Roselló Ramón and Pinya Medina (2014). Monarca and Rappoport (2013) also found that the excessive urgency with which teachers and schools were required to generate documents, means the change has been reduced simply to a process of creating documents. Roselló Ramón and Pinya Medina (2014) observed a certain hastiness in policies and a lack of coherence between policy makers and the services they offer. On the other hand, the school management teams surveyed by Hortigüela Alcalá, Abella García and Pérez Pueyo (2015) also condemned the lack of specific, coherent information from the educational authorities. Consequently, teachers demand guidance, training and collaboration and advice, training and rail against supervision and mistrust (Adelman and Walking-Eagle, 2003; Fullan, 2002; Hargreaves and Fink, 2008; Ramírez García, 2016).

In the opinion of teachers, Human and material resources (the fourth dimension) is one of the limiting factors of this curriculum reform. This aspect has not been addressed in previous research and reflects teachers' deep concern about the excessive student-teacher ratio. In this sense, the 2015 OECD report on education showed that the mean number of students per class in Spain is 22 in primary and 25 in secondary education, while the mean number across the European Union is 20 and 21, respectively. This undoubtedly supports school management teams' perception of teaching staff lacking time to implement the new curriculum model (Hortigüela Alcalá et al., 2015). It is essential to provide the support required to create an appropriate learning environment if the authorities intend the reform to be successful (Halász and Michel, 2011). The lack of financial and material resources that has accompanied the implementation of the CBCM unquestionably impacts on teachers' uncertainty regarding the effectiveness of this change in the curriculum.

Although ten years have passed since the challenge of the key competences entered the Spanish curriculum, teachers continue to demand more personal development (fifth dimension) in order to be able to implement the CBCM correctly. Halász and Michel (2011) highlight the intensive training offered to teachers as a key factor in the countries which have successfully adapted to the competence-based model. Teachers consider training and advisory services as core to the success of the new model, as suggested in a number of works such as those by Dąbrowski and Wiśniewski (2011), Lleixà et al. (2016), Méndez-Alonso et al. (2016) and Méndez-Giménez, Sierra-Arizmendiarrieta, and Mañana-Rodríguez (2013).

In our study, the youngest group of teachers exhibited the most positive perception of the CBCM, which coincides with the findings of other studies such as those by Méndez-Alonso et al. (2016) and Lleixá et al. (2016). However, our results are

in contrast to those of Sharp et al. (2011), who found that the most experienced teachers were those who had a most positive perception of the reform.

As regards gender, in contrast to studies such as those by Haney, Czerniak and Lumpe (1996), Mateos Jiménez et al. (2016) and Méndez-Alonso et al. (2016), all of which found a more positive attitude to the curriculum reform in woman compared to men, our findings reveal a somewhat different perspective. The current study shows a more equal perception in most aspects, although the female respondents exhibit a greater tendency to apply a competence-based approach in teaching strategies while male teachers insist more on the need for improved resources.

Primary school teachers show a more positive attitude towards the change in the curriculum compared to secondary school teachers. This coincides with the findings of Mateos Jiménez et al. (2016), who found that primary teachers had a more positive perception of a functional approach to learning sciences, while secondary teachers gave higher ratings to the importance of the different dimensions involved in developing scientific competence.

5. Conclusions

Ten years of the key competence-based approach in Spain have led to a major change in teaching-learning processes. However, if the intention is for these changes to be genuine and long lasting, there is a need for a greater consideration of the teachers tasked with implementing the reform. The current study clearly evidences that teachers perceive the importance of the curriculum change involved in the introduction of the CBCM. However, their expectations of its implementation in the classroom and the improvements it might generate are negative. Teachers are seen to be committed to the implementation of the CBCM in lesson planning, activity design and the use of teaching strategies, but find it difficult to apply the competences in learning assessment. In any event, the cornerstone for achieving the success of the CBCM appears to be the much-demanded training of teachers, which necessarily involves increased support and advice from educational authorities. Finally, the contextual conditions of the teaching process need to be improved, especially as regards the excessive student-teacher ratio.

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Cómo citar este artículo:

García López, L. M., Gutiérrez, D., García Fernández, B., Lupiañez, J. L., Romo- Perez, V., Eirín Nemiña, R. y Mateos Jiménez, A. (2020). 2007- 2017: A decade of key competences in Spain. *Profesorado. Revista de Currículum y Formación de Profesorado, 24*(3), 381-399. DOI: 10.30827/profesorado.v24i3.8236