

Teachers of the 21st Century.

Professional Competencies in Catalonia Today

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Abstract

This study explores the competencies that teachers need and it aims at both determining whether teachers currently have them and proposing training strategies that can contribute to achieving them. The research is based on quantitative and qualitative methods, through the use of a survey answered by school leaders of schools (n=281) along with interviews to some of them that lead well known innovative schools (n=29). The results reveal how today's schools need teachers who can constantly acquire new competencies, particularly personal and relational ones. Thus, a teacher's professional development follows a progression in which both social-emotional competencies and sound classroom management are crucial. Another area of emphasis lies in joint efforts between schools and universities and the need to consult the educational teams at schools when devising educational policies or designing training plans. The results also show that teachers partly have these competencies, with implications for universities and continuing education. Thus, this study aims to be a major step towards improving the fitting between the educational needs of schools and the professionals graduated by universities.

Keywords: teacher education; teacher competencies; beginning teachers; job satisfaction.

Introduction

Over the past several years, substantial efforts have been undertaken to improve and transform educational systems worldwide so that they can respond to the rapid and significant changes occurring in society today. To this end, ensuring that teachers perform their jobs in this social and educational context has become a strategic priority for education (Darling-Hammond, 2006; Schleicher, 2016), and many studies have confirmed teachers' prominent role in whether educational success is accomplished (Dicke et al. 2015; Kunter et al., 2013; Goldschmidt & Phelps, 2010).

Consequently, we must focus on teacher effectiveness to improve educational outcomes (Donaldson, 2011; McKnight, Graybeal, Graybeal, & Yarbro, 2016; Schleicher, 2012), and this focus has implications for teacher training. In this regard, we can see that the number of studies focusing on teacher training has significantly increased in recent years (Prats, 2016; Esteban & Mellen, 2016; Imbernon, 2015; Eurydice, 2013). In this scenario, clarifying the competencies that a teacher currently needs is essential to teacher effectiveness and to empower change across the system (Pantic & Wubbels, 2010; Gairín, 2011). This task is one of the challenges facing pre-service teacher training and faculty programmes (Pantic & Wubbels, 2010; Landman, 2013; Prats, 2016).

This paper aims to determine the competencies that are needed for teachers today via the following objectives: (1) to delimit the competencies needed for schoolteachers today; (2) to determine whether recently graduated teachers have the competencies that they need to develop their profession; and (3) to propose strategies that could help to provide the professional competencies needed by teachers today.

The article uses 281 questionnaires and 29 interviews with school directors from Catalonia, Spain. This work is particularly timely given that Catalonia, like many other parts of the world, is undergoing a period of comprehensive school transformation inspired by social organisations and the Education Administration. Thus, the instructive case of Catalonia could be informative for other experiences of educational change worldwide, bearing in mind the cross-national dimension of the issues presented here.

Professional Competencies of Teachers and Teacher Training

Competencies are a set of capacities that the person puts into practice as he or she performs his or her professional, academic or social activities. For our purposes, competence implies knowledge, skills, attitudes and values, and it is acquired through education, profession or simply life experience (OECD, 2003). Therefore, a competence allows us to solve tasks autonomously and to adapt to different environments and situations (Perrenoud, 2004; Zabala & Arnau, 2007; Crick, 2008; Pantic & Wubbels, 2010; Gairín, 2011).

Competencies are crucial to the development of each individual (European Commission, 2013; OECD, 2003), and a proper development of them can prevent social problems, such as unemployment, health issues or social exclusion, which have great social and economic costs (Capsada, 2013). Consequently, an educational system oriented towards the achievement of competence has many benefits.

Recent reports on competencies have mentioned the need for cross-disciplinary skills, such as critical thinking, initiative, problem solving, cooperative work, and especially, entrepreneurship (Dam, Schipper, & Runhaar, 2010; Saavedra & Opfer, 2012). They have also attached importance to scientific skills and skills related to language learning (European Commission, 2013; OECD, 2015). In the case of teachers, there have been numerous studies

attempting to specifically delimit the competencies that the teacher of the 21st century must have (Delors et al., 1996; Perrenoud, 2004; Darling-Hammond, 2006; Gairín, 2011; Landman, 2013; Schank, 2013; Imbernon, 2015; among others). Significantly, most of these studies have confirmed that the point of convergence between teacher training and schools' needs often lies in teachers' competencies (Day, 2002; Landmann, 2013; Pantic & Wubbels, 2010).

All of these contributions share the common denominator of going beyond the mere mastery of subjects and content to instead teach and further explore procedural and attitudinal competencies. On the one hand, interpersonal competencies, such as leadership or collaboration, personal management competencies, such as the ability to learn and act in new situations, or instrumental competencies, such as communicative skills, are among the procedural competencies. On the other hand, responsibility, trust and commitment are among the attitudinal competencies. Additionally, more teaching-oriented competencies have been described, such as those regarding classroom management -- evaluation, conflict management, and difficulties support – in addition to disciplinary competencies.

At the same time, these studies have described how these competencies should affect the capacity to design and nurture teaching and learning processes that are useful for today's society, with an emphasis on the ability to interact with people and the environment, as well as to adopt a clear, active commitment to society. In short, these procedural and attitudinal competencies emphasise personal and relational capacities (Delors et al., 1996; Echeverría, 2001).

Knowing what competencies teachers should have is tantamount to knowing how they should be trained. However, in today's socioeducational situation, we can sense a kind of fracture between what the university prioritises in the training of future teachers and what the educational system truly needs (Prats, 2016; Tiana, 2013; García, 2002). Teachers must perform

their jobs effectively, satisfactorily and with adequate recognition from society (Saavedra & Opfer, 2012) while responding to the increasing diversity in classrooms (Clayton, 2007) and in their surroundings. The global reality, which is rife with social and technological changes, is forcing us to reconsider the role of the school of the future and the profile that the teacher of the 21st century should have (Pantic & Wubbels, 2010; Gairín, 2011).

Consequently, more empirical research is needed. Therefore, numerous authors have emphasised that dialogue is needed between the university and the school (Day, 2002; Gilroy, 2005; Zabalza, 2012; Martínez, 2008; Pantic & Wubbels, 2010; Landmann, 2013; Imbernon, 2015; Postholm, 2016), necessarily entailing asking the schools about their needs, on the one hand, and reviewing teacher training, on the other hand, which is what this paper is about.

The Case of Catalonia

Within this context, the case of Catalonia is of interest because of the intense situation that its educational system is currently undergoing, with the educational community discussing the role of school today. There are numerous social actors related to educational innovation who are attempting to spur the process of educational change to propagate it to a greater number of schools. One protagonist is the Education Administration through the Agency for the Quality of the University System of Catalonia (AQU); another is the ‘Escola nova 21’ project, an initiative involving 480 schools, but we could also cite the Network of Innovative Secondary Schools or the ‘Xarxes per al Canvi’ (Networks for Change) programme of the Education Consortium of Barcelona, among others. The process implemented especially focuses on methodological changes concerning student protagonism, to a teacher role that switches from an instructive role to an accompaniment role or to an interdisciplinary focus on content. Therefore, within this

complex setting, it is essential to explore and determine the teachers' competencies to support this innovative educational direction in Catalonia.

In the Catalan university system, there are two teacher training degrees: the Preschool Education Teacher Training Programme (teachers of 0- to 6-year-old children); and the Primary Education Teacher Training Programme (teachers of 6- to 12-year-old children). The two programmes require four years of study and include both training at a university and in-school placement as an in-service teacher at a local preschool or primary school (on average, 24 weeks). On the other hand, those who want to teach at a secondary school must follow a master's course after they obtain their bachelor's degree. This master's course lasts for one year and includes in-school placement for six weeks. During the in-school placement, all pre-service teachers participate in the school activity under the supervision of a schoolteacher who has contact with the professor at the university in charge of the student.

Materials and Methods

The study is based on a mixed methodological design (Dellinger & Leech, 2007), which includes both quantitative and qualitative methods using a survey of the administrative teams of schools, along with interviews with school leaders.

The sample of this survey consists of 281 directors of public schools (227) and publicly subsidised private and wholly private schools (54) in Catalonia. The survey was conducted by AQU in 2014 on the schools' perceptions of recently graduated teachers (preschool, primary and secondary) and was addressed to all schools in Catalonia. It is the first study of this type performed in Catalonia and explores the suitability of university teacher training in Catalonia from the standpoint of employers. The survey was answered by 10% of the directors (58% primary school, 17% primary and secondary school and 25% secondary school). The survey

identifies the main characteristics of the schools (teacher and student number, educational levels, starting year of the school, degree of complexity of students and school ownership), and although there were more primary school responses, the sample was representative regarding the other characteristics. The survey encompasses five research categories: competencies of new teachers; collaboration with universities; onboarding and training of new teachers; innovation strategies; and hiring of new teachers. However, we focus here only on competencies.

In the category of competencies, the survey focuses on the directors' evaluations of the degree of importance of a set of competencies for teaching practices and their satisfaction with the extent to which teachers there who are recent university graduates have mastered these competencies. We can distinguish among the following categories of competencies: training for teaching practice; interpersonal competencies; personal management competencies; instrumental competencies; competencies involving attitudes and professional ethics; and competencies involving disciplinary and theoretical training. Each of the dimensions encompasses different items, as shown in the table below:

(table 1)

The survey was constructed by an expert panel in competence-based teacher training and was validated through the literature (Delors et al., 1996; Perrenoud, 2004; Darling-Hammond, 2006; Gairín, 2011; Landman, 2013; Schank, 2013; Imbernon, 2015; among others). Then, it was administered online and was managed using the SurveyMonkey survey software tool. To analyse the different relationships among the variables (correlation and regression), the quantitative analysis was supported using the IBM SPSS Statistics statistical software package, version 21.0 for Windows.

Similarly, the qualitative data were obtained via interviews. Specifically, 29 semi-structured interviews were conducted with a sample of expert school directors (following Serrats (2012) criteria): 16 from public schools and 13 from publicly subsidised schools. All of these directors were working professionals with more than four years as directors and were associated with innovation projects or educational revamping projects. They also had contact with the university, for example, through research groups, workshops or teaching. The interview questions, also validated through an expert panel, matched the following categories of analysis: socioeducational change and challenges; facilitators of change; purpose of teachers' jobs; key competencies of teachers; and strengths and weaknesses of pre-service training. These categories, based on what research says about the variables conditioning teacher's competencies, (Delors et al., 1996; Echeverría, 2001; Prats, 2016), sought to complement and triangulate the quantitative data obtained from the survey; this goal was accomplished by identifying the main competencies that teachers should have to meet today's socioeducational needs. These needs were identified by analysing the range of challenges that the schools and the system face.

The interviews were tallied, analysed and codified with the support of QSR N-Vivo software. The analysed data followed a deductive procedure in which we identified the reflections and arguments that fit within each category. At the same time, the content analysis was complemented by an inductive procedure as new categories emerged. To ensure the validity of the results, the analysis was performed based on consensus of the four team researchers.

An informed consent form was obtained from all of the participants, and the research instruments were applied concurrently.

Results

Quantitative Study

The descriptive analysis of the quantitative study revealed that the teams that lead the schools attach high importance to teachers' competencies, although their level of satisfaction with them in new teachers could be improved. The importance attached fluctuates between 7.4 and 9.4 out of 10. In the lead is *classroom management*, with a score of 9.2, followed by *promoting values and respect in the classroom* at 9.2, competence in the *Catalan language* at 9.3, and *responsibility at work* at 9.4. Less than a score of 8, we can only find the *ability to argue and negotiate* at 7.6 and *leadership* at 7.4. Conversely, overall satisfaction with the competencies of new teachers is lower, standing at 6.8. The competencies of the new teachers with which the directors are most satisfied are *responsibility at work* (7.5), *IT skills* (7.5), and the *ability to promote values and respect in the classroom* (7.5). We can see this trend in the following figure (*figure 1*).

Similarly, we would like to emphasise that the competencies with the broadest gap between the importance attached to them and the administrative teams' satisfaction with them are *classroom management* (2.7-point difference), *conflict management* (2.6), *foreign language* (2.3), and *innovation and research* (2.1). In contrast, *negotiating and arguing skills* (1.2-point difference), *working independently* (1.3), and *music, art and physical education* (1.3) are the competencies for which this gap is the narrowest.

Furthermore, the inferential analysis in which we studied the significant relationships among all of the variables (categories and items) brought three main results. The first shows that satisfaction with *personal management* competence (which encompasses the ability to learn and act in new situations and the ability to work independently) is an indicator that the teacher training master's course provides sufficient training, given that we found a significant relationship when we asked schools ($t_{(15)}=2.24$, $p=0.041$).

It is also important to note that there is a negative relationship between the degree of satisfaction with the competencies and the number of recently graduated teachers in publicly subsidised or wholly private schools. Therefore, the number of recently graduated teachers bears an inverse relationship with the degree of satisfaction with their competencies. We can see this relationship below (*table 2*).

The analysis also shows that we can find relationships among competencies and the schools that conduct onboarding and training of new teachers. In this sense, the proportion with a mentor as an onboarding action is significantly related to the degree of importance attached to the competencies: TeachingPractice ($t_{(130)}=2.76$, $p=0.007$); InterpersSkills ($t_{(128)}=2.26$, $p=0.025$); PersonalMagmt ($t_{(132)}=2.70$, $p=0.008$); Instrumental ($t_{(132)}=2.42$, $p=0.017$); ProfessEthics ($t_{(132)}=2.28$, $p=0.024$); and DisciplTr ($t_{(105)}=2.25$, $p=0.027$).

Finally, we should underscore that no relationships were found between competencies and educational stages (preschool, primary or secondary) or between competencies and school ownership.

Qualitative Study

The competencies that emerged in the interviews with the school directors were grouped into five categories: community competencies (involving relationship between school and the environment); critical competencies (reflexive competencies); instrumental competencies (methodological and action-oriented competencies); interpersonal competencies (competencies involving relationship with others); and personal competencies (involving disciplinary and social-emotional ones). Of all of them, instrumental competencies is the category with the most nodes, as shown in the table below (*table 3*).

Below, we describe the most noteworthy results, bearing in mind the number of nodes, the frequencies and the interviewees' voices.

The *personal competencies* are the most important (with a frequency of 279, 50%), and within them, the *social-emotional competencies* (frequency of 206) are reflected in quotes such as the following:

One of the competencies that a teacher must have is the willingness to learn new things, to be able to analyse the social context, and to be able to adapt to new contexts [...] think that I have to change too and adapt to changes. (Interview 19)

Be fair people with solidarity, committed to the world. (Interview 13)

... and you must abide by the passion, love, esteem, and commitment to be attentive, active, and present and to be a person willing to know. (Interview 27)

Next in importance comes *instrumental competencies* (123, 26%) such as communication or methodological competencies:

The most important competence of a teacher is communication: knowing how to communicate with families, with pupils, and among teachers. (Interview 6)

We teachers give a performance every day in the classroom, and you must have many communication resources. (Interview 27)

[...] the teacher is a designer of a curricular and learning experience environment that allows every pupil to follow their own itinerary and to reach their top performance without losing motivation. (Interview 15)

Third is *interpersonal competencies* (91, 17%), such as teamwork:

One of the most important competencies that an innovating teacher needs is collaboration.

Barriers must be broken in the classroom. (Interview 6)

Teachers cannot face these changes on their own [...] therefore, teamwork competence is indispensable today. (Interview 19)

Critical competencies and *community competencies* were only mentioned 15 (4%) and 12 (3%) times, respectively, with statements such as, ‘A teacher must be a person with a great capacity to think and constantly wonder about what they are doing, what the sense of what they are doing is “This is like this but would it be better if done otherwise?”’ (Interview 21) or ‘What a teacher has to do is to collaborate, connect with a thousand agents outside the school; with those inside the school it is already taken for granted. Connecting with exterior agents is an emergency because it is a part of teaching’ (Interview 4).

(figure 2)

In terms of the equivalency with the categorisation on the quantitative questionnaire, we can see that the content analysis caused new categories to emerge, such as *community competencies* and *critical competencies*, along with several competencies that brought further nuance to those contained in the questionnaire, including *empathy*, *capacity to use different languages* and *active listening*. Conversely, the remaining competencies appear in both classifications, although differently organised and slightly more clustered together in the interviews. In the next table, we can see the comparison and equivalence between the two classifications (**table 4**).

We can also see that the *instrumental competencies* are those with the most associated competencies (18), followed by *interpersonal competencies* (10). Nevertheless, *personal competencies* are the most important; they have two macro competencies, the *social-emotional*

competencies being the most frequent ones (with *flexibility*, *desire to learn*, and *involvement* having the greatest impact).

Thus, among the *instrumental competencies*, we can see that the most important are the *capacity to develop learning strategies*, *capacity for oral and written communication* and *capacity to manage groups*. Notably, when discussing group management, directors sometimes emphasise the need to have previous experience with children. In addition, among the *interpersonal competencies*, the most important are clearly *working cooperatively* and the *capacity to mentor, tutor, guide and motivate*.

(figure 3) (figure 4)

If we examine the competencies cited by most interviewees, we find that *social-emotional* competencies are unquestionably referenced by almost the entire sample (29 interviewees), along with *disciplinary* competencies (27), although the frequencies are much higher for *social-emotional* competencies. *Cooperative work and teamwork* is the next most frequently cited (29 interviewees), followed by *capacity to mentor* (21). Thus, we can see that the *personal* and *interpersonal* competencies are those with the most frequently cited capacities.

Furthermore, we should note that although some items were not mentioned very frequently, they did make relevant contributions, specifically *seeking to transform the environments* (community competencies), *capacity to research* and *emotional education* (instrumental competencies), *assertiveness* (interpersonal competencies), and *humanistic training* (personal competencies).

Finally, although the inductive procedures of the content analysis allowed many categories, nodes, items and nuances to emerge, we can see that some ideas were not clearly

present, such as managing uncertainty or accepting challenges and managing complex problems, along with teachers' social capital. We should also note our surprise at some ideas appearing less frequently than we expected, including innovation, ICT, leadership, and entrepreneurship.

As we can see, the results show coherence between the quantitative and qualitative studies, conferring greater consistency on the data presented. Similarly, the results of a questionnaire with predefined categories were enriched by the possibility of creating new categories based on the interviews, causing new categories or nuances to be added to the existing categories.

Discussion

The results show two main types of competencies in both the qualitative and quantitative studies, in agreement with the literature (Delors et al., 1996; Echeverría, 2001). These categories consist first of the *personal competencies* (including curricular competencies, instrumental competencies referring to teaching practice, critical competencies, and competencies associated with personality and attitudes), all of which are linked to individual capabilities, and second the *relational competencies* (including community competencies and interpersonal competencies), associated with the interactive dimension of teachers. Thus, the classification reflects and integrates the proposals by different authors cited in the introduction who emphasise going beyond mere mastery of knowledge. In this sense, it is illustrative to mention that in the interviews, school directors often named the competencies related to content and disciplines in passing, assuming that the teachers already had them, and they particularly emphasised other issues related to 'non-cognitive skills' (Marina, Pellicer, & Manso, 2015) or 'general pedagogical knowledge' (König & Pflanzl, 2016).

With regard to personal competencies, they are generally considered the most important, with a particular emphasis on the *social-emotional* and *instrumental* competencies. Similarly, we should underscore the correlation between the teachers' preparation and the personal management competence as a clear indicator of learning how to learn, which all teachers should have (and nurture in their students). Conversely, the competencies that require improvement are those related to classroom management.

Thus, personal competencies for the 21st century have a strong cross-cutting social-emotional and instrumental impact, with the capacity for lifelong learning at the core.

With regard to the *relational* competencies, we can see that they are less highly valued, and some of them, such as leadership, are surprisingly at the tail end of the evaluations.

In this sense, we should note that the consulted literature states that in addition to going beyond the mere mastery of subjects and content, which emphasises procedural and attitudinal competencies, the ability to interact with people is also essential (Schleicher, 2012; Zabalza, 2012; MECD, 2015; Schank, 2013; among others), in clear reference to these relational competencies. The results revealed fewer mentions of these competencies, matching what was found in other studies (Admiraal et al., 2011), highlighting the lack of fit between theory and practice. Increasing numbers of experts and studies have noted the importance of social capital in education (Smethem, 2007; Daly et al., 2010; Liou et al., 2016), but this study – and others – do not clearly capture this topic.

However, if there is one relational competence that is very highly valued, it is *classroom management*. Moreover, this competence is the one that, along with *conflict management*, shows the greatest gap between importance and satisfaction. This finding matches the concern in previous and current studies regarding the importance of classroom management – with its

diversity – and conflicts in teachers’ success and in students’ performance (Dicke et al., 2015; Geeraerts et al., 2015; Niemi, Nevgi, & Aksit, 2016; Postholm, 2016; Wolff et al., 2015).

Similarly, we can see how the *importance* attached to the competencies is greater in general than *satisfaction* with them, with a gap ranging from 2.7 to 1.2 and a mean of 1.8. Consequently, we could pinpoint a shortcoming in the training, although we must also consider the demands of the directors, who always want well-prepared teachers, not to mention the so-called ‘ceiling effect’.

Conversely, the results also show a lack of fit in relation to the literature. Thus, while recent studies have emphasised the crucial importance of cross-disciplinary aptitudes, such as critical thinking, initiative, entrepreneurship, coping with complex problems, and cooperative work (OECD, 2015; World Economic Forum, 2016; Dam, Schipper, & Runhaar, 2010; Saavedra & Opfer, 2012), the results have only shown clear references to the last topic. This issue points to a shortcoming in the praxis compared to what the experts say, and it might indicate that although discourse evolves, practice is left behind.

Similarly, we should be heedful of the information that tells us that there is a negative correlation between the degree of satisfaction with the competencies and the number of recently graduated teachers. This information points to a type of discontent with pre-service training and is targeted directly at the faculties of education and curricula in teacher training degrees, forcing them to undertake a critical review of their educational projects.

Also noteworthy are the results regarding the significant relationship between onboarding actions for new teachers and the importance of competencies. We should recall that onboarding actions, regardless of their format, become the guarantors of the cohesion and coherence of each school’s educational endeavours.

Conclusions

The goal of this study was to identify the competencies that school teachers need today, to determine whether teachers currently have these competencies, and to explore training strategies that could contribute to achieving them. The results and discussion have allowed us to analyse and compare the opinions of the school directors regarding both the desirable competencies and the current competencies of recently graduated teachers. These reflections, along with suggestions from the directors and contributions from the literature, allow us to reach the conclusions below, which first identify key competencies and their acquisition and then the resources and strategies to contribute to their development and attainment in both pre-service training and in the development of the profession.

Hence, the study brought to light a large set of competencies that entail the need to understand the teacher's professional career as a learning continuum; however, as Schleicher (2012) and Geeraerts et al. (2015) claimed, it is virtually impossible for pre-service training to supply all of the competencies needed to work in the profession. From our perspective, this finding means that pre-service training should stress the **competencies that allow teachers to acquire the competencies needed during their profession** (Darling-Hammond 2006; Schleicher, 2012; Niemi, Nevgi, & Aksit, 2016; Forde et al. 2014). In fact, this process is essentially 'learning how to learn' transferred to competencies: 'having sufficient competencies to acquire the competencies needed'.

Throughout the discussion, we have highlighted two types of competencies identified as necessary for teachers: **personal** and **relational**. In addition, we have shown that both are crucially important, going beyond knowledge without ignoring it. Similarly, we should stress the

importance attached to **social-emotional** competencies, which fall within the personal competencies, and **classroom management**, which falls within the relational competencies.

In this sense, we can point to a certain deficiency in the training, given that satisfaction with the competencies resulted in fact in scores less than the importance attached to them, a circumstance accentuated in some cases, such as English, innovation, research, classroom management, and conflict management. Thus, we recommend that teacher training programmes underscore these competencies, with particular emphases in three directions: first, improvement in language competence in English, which is essential for CLIL models, which are becoming increasingly more common in non-English-speaking countries; second, innovation and research, given that, as Schleicher stated, ‘teachers need to be agents of innovation not least because innovation is critically important for generating new sources of growth through improved efficiency and productivity’ (2012, 36), at the base of which is research, often under the guise of action research; and most importantly, classroom management, which not only shows the greatest gap between importance and satisfaction but is also among the most highly valued competencies, fully dovetailing with the literature, not to mention being one of the most complex competencies for novice teachers (Wolff et al., 2015).

This latter issue leads us to posit the need to improve training in terms of **classroom management and working with children**, which would entail reconsidering the model of practices. These competencies are crucially important in teacher training, and international research has confirmed that the ability to transfer the theoretical aspects to practice is what helps students transition into being novice teachers (Dicke et al., 2015). This importance, to our mind, has many implications. We believe that only university professors who have worked actively at schools and in the classroom should tutor and supervise practices, just as only teachers at schools who have had training in mentoring students should tutor trainee teachers in schools.

Additionally, more coordinated work between the students' schoolteacher mentors and the professors in the faculty is needed, meaning co-supervision and co-evaluation. It is also essential to design a model of practice that places students in situations of real educational intervention adapted to the reality of the school in which they are applying their practices and not limiting these situations to carrying out occasional teaching interventions, while also ensuring rigorous observation that can offer the trainees meaningful leaning and reflective practices both at school and in the university (Caires & Almeida, 2005).

The study also reveals the added value that comes with having previous experience with children; this result is consistent with the literature (Dicke et al., 2015; Niemi, Nevgi, & Aksit, 2016). We should not discard the possibility of making this experience a requirement to graduate -- asking that new generations of teachers have experience with children in free-time activities, sports, extracurricular activities or remedial tutoring. Finally, we must seriously rethink the role of onboarding models (Dicke et al., 2015; Geeraerts et al., 2015), bearing in mind that evidence has shown that there is greater learning in this phase than at the university (Massengill, Mahlios, & Barry, 2005; Schleicher, 2012). Quite a few countries are already changing their training programmes in this direction (Schleicher, 2012). Hence, the possibility of a residency, which has recently begun to appear in numerous educational fora (Marina, Pellicer, & Manso, 2015; López, 2015; AQU, 2015), makes total sense, indicating that after finishing the teacher training degree, new teachers should pass an exam and follow a full year at a school in an induction programme, assuming the role of internship teacher and being paid for it.

In this regard, although it was not a part of a dominant discourse among directors, recent studies (Daly et al. 2010; Liou et al., 2016; Civís et al. 2016) have revealed the importance of **social capital** in teachers' professional performance. This term refers to relational competencies, not only in terms of students and families but also in relation to all of the other professionals and

agents who come into play in education. The greater that the relational capacity is, the greater that the social capital is, and the greater that the social capital is, the greater that the efficacy in education is (Graham, 2007; Moolenaar, Slegers, & Daly, 2012; Liou et al., 2016). Social capital refers to the ability to share resources that allow us to more successfully attain our goals. Thus, the position that a person occupies in his or her network of professional relations and the way in which he or she interacts with all of the agents can have a multiplying effect on resources and therefore on success, or on the contrary, it can have an inhibiting effect (Daly, 2010).

Along the same lines and capturing the importance of connections, it is essential for **schools and universities to work together more**, engaging training needs and school and educational needs in a constant dialogue. This cooperation would allow all of them to move towards finding answers based on action research and applied research. Research should be introduced more to schools and practice to faculties, linking more evidence-informed practices and transforming knowledge into action (Best & Holmes, 2010).

We also wanted to stress that although we detected the claim that schools are not responding sufficiently efficiently to the changes occurring in society (Landman, 2013; Schleicher, 2016), the role of schools and teachers should be to **intervene in society critically** (Perrenaud, 2004; Martínez, 2008; Donaldson, 2011) and not only to follow the changes and adapt to them. Thus, anything that can favour their critical and contextualised contribution will help to achieve this goal. In some cases, this goal means that teachers receive training that hones the critical spirit more, but in others – as confirmed by several experiences (Clayton, 2007; Forde et al., 2014; Decree on School Autonomy, 2010) – it calls for greater autonomy for teachers and schools, so they can respond to their own contexts as efficiently as possible by designing fully contextualised curricula and practices. Autonomy in hiring guarantees better faculties, and autonomy in action guarantees more critical, stronger projects that fit the circumstances better,

constructed based on active participation instead of being implemented from above by the administration or being imposed by regulations.

Thus, the study has allowed us to determine the competencies that are needed for teachers today, confirming that teachers partly have them. This finding has clear implications for universities and continuing education, and this study aims to be a major step towards improving the fit between the educational needs of schools and the professionals graduated by universities. As several international reports have emphasised, the importance of identifying the competencies needed to successfully embark upon a teaching career is one of the challenges of pre-service teacher training (Pantic & Wubbels, 2010; Landman, 2013; Prats, 2016). In addition, since competencies in people's development have come to the fore (OECD, 2003; Saavedra & Opfer, 2012; World Economic Forum, 2016), teachers are key players in teaching these competencies. Consequently, ensuring that teachers have the appropriate competencies also guarantees that they can teach them to students and they can achieve them.

As we stated above, although this study was performed in Catalonia, the conclusions that we reached are not only applicable to Catalonia but can easily be transferred to other contexts, considering the similarities with other countries, thus contributing to determining the competencies that teachers everywhere need to train the citizens of the 21st century.

Finally, we would like to stress the importance of **listening more to teaching teams** at schools and, ultimately, to administrators when designing policies and curricula. We agree with Day (2002) and Pantic and Wubbels (2010) when they say that this issue is critical to improving teachers' competencies. The compartmentalisation that still steers our professional logic often disconnects issues that are closely related and that we can only know how to act on through an understanding of these connections and ties. The school can certainly provide more guidelines on

how these training plans and policies should be and how they can respond better to the needs and realities of schools, exactly like in the world of academia, in which we note that schools are lacking greater awareness of the potential of social capital in education and the importance of initiative and entrepreneurship when addressing educational challenges. Furthermore, the world of politics can articulate the supports that would make it possible to manage uncertainty and transfer complex problems into challenges to ensure that our educational endeavours culminate in success.

Limitations and Prospects

This study is not free of limitations, which we would essentially identify in the level of response to the questionnaire sent to all of the schools in Catalonia. Additionally, we must consider that the study is only based on employers as stakeholders, disregarding families, teachers, students, or the administration. Conversely, for future studies, we could consider a factorial validation of the questionnaire so that it could become a standardised and more reliable tool to evaluate teachers' competencies, exactly like other studies have done (Landman, 2013). Similarly, we would also suggest a critical review of the contributions of this study by the university, which would entail a process of redesigning the curriculum based on national and international evidence, also bearing in mind that university professors should have sound mastery of the competencies in which they are training their students.

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Data availability statement

The data that support the findings of this study are openly available in AQU Catalunya at http://www.aqu.cat/estudis/ocupadors/ocupadors_ensenyament.html#.W7imeGgza1s.

Declaration of interest statement

We confirm that this article is original and has not been published elsewhere, nor is it currently under consideration for publication elsewhere. All of the authors approved the manuscript and this submission. Furthermore, the study followed ethical standards and was conducted according to the guidelines established in the Declaration of Helsinki. Written informed consent was obtained from all of the subjects. The authors have no conflicts of interest to disclose.

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