

Teachers for the 21st Century: Academic profile, initial training and teaching practices of Spanish teachers. Introduction¹

Profesores para el siglo XXI: Perfil académico, formación inicial y prácticas docentes de los profesores españoles. Introducción

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Abstract

The paper presents a review of the initial academic characteristics, training and professional activity of Spanish teachers. It is framed within the current debate on teacher quality and its impact on the results of the educational system. Theoretical and conceptually, the study adopts the meta-research approach. Methodologically, a review of the literature on the subject is carried out to allow a well-founded reflection on the differential characteristics of Spanish teachers with respect to other teachers in other educational systems. In order to do that, some of the most relevant and high impact works published in recent years are considered. First, the academic profile of the aspiring teacher is characterized through a review of the literature and some data from the Spanish University System. Next, we present a comparative view of some formative elements and common teaching practices obtained, essentially, through the GTI and TALIS studies of the OECD. These include instructional practices (quality of discourse, quality of the subject matter presented and cognitive involvement of the student)

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and the formative profile declared by the teachers. The conclusions point to the fact that the differential profile of aspiring and practicing teachers is not clearly different from that of teachers in other educational systems, except in issues related to initial training in the disciplinary content of teaching and training in digital competence. The article closes with some reflections on possible challenges for the renewal of teacher training in the next decade and with a formal presentation of this monograph.

Key words: Teacher profession, professional induction, professional learning, teaching practices, TALIS, GTI, Spain.

Resumen

El trabajo presenta una revisión de las características académicas iniciales, la formación y la actividad profesional de los profesores españoles. El artículo se enmarca en el debate actual sobre la calidad de los docentes y su impacto en los resultados del sistema educativo. Teórica y conceptualmente el estudio adopta el enfoque propio de la meta-investigación. Desde el punto de vista metodológico, se lleva a cabo una revisión de la literatura sobre el tema que permita una reflexión fundamentada sobre las características diferenciales de los docentes españoles con respecto a otros docentes de otros sistemas educativos. Para ello se consideran algunos de los trabajos más relevantes y de mayor impacto publicados en los últimos años. En primer lugar, se caracteriza el perfil académico del aspirante a maestro, a través de la revisión de la literatura y de algunos datos procedentes del Sistema Universitario Español. A continuación, se presenta la visión comparada de algunos elementos formativos y de prácticas docentes habituales obtenidos, esencialmente, a través de los estudios GTI y TALIS de la OCDE. Estos incluyen a las prácticas instructivas (calidad del discurso, calidad del tema expuesto e implicación cognitiva del alumno) y el perfil formativo declarado por los profesores. Las conclusiones apuntan a que el perfil diferencial del aspirante a maestro y del docente en ejercicio no es netamente diferente al de docentes en otros sistemas educativos, salvo en cuestiones relacionadas con la formación inicial en el contenido disciplinar de la enseñanza y la formación en la competencia digital. El artículo se cierra con algunas reflexiones relativas a posibles retos para la renovación de la formación docente en la próxima década y con una presentación formal de este número monográfico.

Palabras clave: Profesión docente, iniciación profesional, aprendizaje profesional, prácticas docentes, TALIS, GTI, España.

Introduction

There is no article on the teaching profession that does not begin by citing Hattie (2008). In his review of the quantitative literature on the relationship between academic achievement and determinants of academic achievement, he highlights that “teacher factor” makes larger contributions to student learning than factors associated with home, curriculum, the student him/herself, or school. Along the same lines, Hanushek et al. (2002) note that having a high-quality teacher during elementary school can offset or even eliminate the initial disadvantage of a low socioeconomic background. Hanushek has calculated that students who have had teachers for one year whose relative efficacy places them at the 90th percentile or above learn the equivalent material 150% more than students taught by teachers who rank at the 10th percentile or below (Hanushek et al., 2016). The work of Sanders et al. (1997), through value-added models, point out teacher effectiveness once other factors are controlled for. They go so far as to assert that more can be done to improve education by improving teacher effectiveness than by any other single factor. And along the same lines, Attebery et al. (2015) reveal that early years of professional practice can more accurately predict teacher effectiveness than teacher characteristics, especially in the area of mathematics.

In Hattie’s logic, which highlights the factors that differentially impact performance, the teacher who “has a committed plan, who is aware of what his students know and think, who receives their feedback, who knows where he is and where he is going and who creates a climate of trust and can work in it”, in the words of Fernández-Enguita (2014, pp.53), is the one who contributes to his students’ learning above the usual.

Precisely because the teacher is the most determining factor in the development of student learning, there is a constant call for better prepared teachers. Reflections on the need for better teacher training are a constant in the research literature, and it has increasingly become a social concern and demand (to take some distance from the Spanish situation, the evolution of the Australian case can be seen in Gore, Barron, Holmes, & Smith, 2016).

This situation of demand and social criticism is clearly linked to the visibility of the results of international evaluations on the functioning of educational systems. It seems that teachers and professors are the (almost) only ones responsible for the average (others would say weak)

performance levels of a country like Spain. The indicators that speak of the performance of the educational system show elements that manifest a behaviour with strong points or at least not distant from the environment and other elements that are perhaps more worrying. I will refer to three indicators: PISA results, some performance indicators in the educational system and education spending.

The latest edition of PISA, carried out in 2018, shows that any comparative indicator of the average level of performance of the Spanish educational system - from the reference the average score of the OECD, the distance in terms of magnitude of the effects, the estimated distances in terms of years of schooling or the stability of the Spanish scores throughout the different editions of PISA - show small differences (some significant) and with little practical significance. The location of the Spanish educational system in the PISA ranking is in the center of the classification, in a median position, which does not allow, in view of these data, to evaluate them as extremely negative, nor as extremely positive (Castro, 2020).

In another set of indicators of this international assessment, the minimal percentages of Spanish students who achieve high levels of performance are worrying. In mathematical competence, only 7% of Spanish students achieve level 5 or higher (only 1.1% of these students achieve the maximum level), compared to 11% of OECD students. In the case of science, only 4% are at level 5 or higher (compared to 7% of the OECD average) (MEFP, 2019b).

The State System of Education Indicators (2019c) summarizes in facts and figures the state and evolution of the education system. The “*early dropout from education and training*” is usually alluded to as the main exponent of malfunctioning of the education system. The 2018 data report that the percentage of early dropouts in Spain is 17.9%. This indicator has had a constant rate of decrease since 2008, when it stood at 31.7%. Spain is the country with the highest rate in the European Union, which sets its target for the EU at 10%, while for Spain it is set at 15% by 2020. Certainly, these are not data that should be ignored or underestimated, they are not good. Although the naming of this indicator is obviously unfortunate, the characterization of dropout as “early” does not refer to the moment of dropout but to the absence of a degree. The definition refers to the percentage of the population between 18 and 24 years of age without an upper secondary education degree. And the procedure

for obtaining a diploma at the end of a school year depends more on the architecture of the educational system than on the teaching action or the apparent difficulty of this group of students.

Finally, I will refer to spending on education. The analysis carried out by Professor Julio Carabaña (2020) clearly shows that spending on education does not seem to be a differential problem with respect to other European countries. Spending in Spain is around 89% of the OECD average. If Gross Domestic Product (GDP) is taken as a reference, Spain spends 3.6% on education, eight tenths of a percentage point below the OECD average. However, if total expenditure per pupil is studied in relation to GDP per capita, Spain devotes 26%, which is exactly the same as the average for the OECD and the 28 EU countries. Beyond the consideration of the sufficiency of these values, which evidence an adjustment to the level of income and an average dedication by the educational authorities, it is important to note that the incidence of spending per pupil on performance is significant below a threshold value, which is quantified at USD 50,000 of cumulative expenditure on schooling per pupil (Schleicher, 2019). In Spain, at age 16 it is 83,000 USD, placing it well above that threshold value.

These three sets of indicators reveal an educational system located in the middle range of performance, in the middle range of investment in education and with a structural problem that affects almost 18% of students who do not advance in the development and completion of upper secondary education.

However, can these circumstances be attributed to the actions and/or training of teachers and professors? The pessimistic discourse that pervades education in Spain points directly to the almost sole responsibility of teachers. Perhaps it is time to evaluate the functioning of the educational system, which is not as deficient as it is usually portrayed, as I have briefly tried to outline in the previous paragraphs, although it is among our desires to get out of this average. In this context of improvement, before considering how to optimize the teacher's influence on student learning, it may be pertinent to assess whether Spanish teachers are so different, so unique in their academic profile, initial training, and teaching practices to teachers in other educational systems. The problem facing the Spanish education system is complex and there are no "parsimonious" shortcuts that reduce the problem to teachers and the solutions to increased spending.

Theoretically and conceptually, this work adopts the meta-research approach. From the methodological point of view, a review of the literature on the subject is carried out to allow a well-founded reflection on the differential characteristics of Spanish teachers with respect to other teachers in different educational systems. Some of the most relevant and high-impact works published in recent years are considered. First, the academic profile of the aspiring teacher is characterized through a review of the literature and some data from the Spanish University System. Next, we present a comparative view of some formative elements and common teaching practices obtained, essentially, through the GTI and TALIS studies of the OECD. These include instructional practices (quality of discourse, quality of the subject matter presented and cognitive involvement of the student) and the formative profile declared by the teachers.

The academic profile of aspiring teachers

Aspiring teachers have been analyzed in the literature from many points of view. A frequent question is who enters the teaching profession and why? In this regard, Fray and Gore's (2018) review of empirical studies published between 2007 and 2016 addresses the question of what are the main factors affecting the choice of teaching as a career. Of seventy articles analyzed, it stands out that in most of them the weightiest factors have to do with intrinsic and altruistic motivations.

However, beyond motivations, special attention is paid to the academic and cognitive characteristics of aspiring teachers, due to the link with the results of various assessments of the performance of education systems. In 2006, the PISA program (OECD, 2008) surveyed students in all participating countries about what they saw themselves working on their 30th years old. Only 5% of those surveyed saws themselves working as teachers or professors, the most worrying fact being that these are precisely students whose results in reading and mathematics skills are below average.

Along the same lines, the study conducted by Han (2018) analyzes, among other things, the academic profile of PISA 2015 students who declare themselves aspiring to be teachers, who are those who, when faced with the question "What kind of job do you hope to have when

you are 30 years old?” answer teacher in general, primary school teacher, secondary school teacher or special education teacher. It is supported by the OECD study (2018) which reports that about 59% of science teachers and 68% of teachers of all other subjects have already chosen to go into teaching at the end of secondary education.

S.W. Han (2018) classifies the 50 countries included in his analyses into 5 groups based on the performance exhibited in PISA of the group of young people who declare an interest in teaching as a career versus students with interests other than teaching. In group 1, composed of Korea, aspiring teachers show higher performance in mathematics than the non-teaching interest group. In group 2, composed of Austria, teacher candidates achieve higher performance in reading comprehension and equal performance in mathematics. In group 3, composed of Canada and Finland, those interested in teaching perform as well in reading comprehension as the other group and perform worse in mathematics. Group 4 is larger, with 17 countries, and aspiring teachers achieve the same performance in reading literacy and mathematics as the other group. Finally, in group 5, composed of a total of 29 countries, those who wish to become teachers perform worse in both mathematics and reading comprehension than the group of students with interests other than teaching. This distribution is already an illustration of the weaker pre-university academic trajectory of aspiring teachers (for more detail, see Table 1, on page 146 of 2018 Han’s article).

Spain’s results are classified in group 5, in reading comprehension there is a difference between these two groups of 23.09 (standard deviation = 5.41) points on the PISA scale, placing the group of aspiring teachers (493) below the Spanish average and the OECD average. In mathematics proficiency, the difference between aspiring and non-aspiring teachers is 27.62 (standard deviation = 5.42) points on the PISA scale, placing the group of aspiring teachers (475.79) below the Spanish and OECD averages. As already highlighted, the Spanish case is not unique in the context of the Han teacher job, although it clearly shows that 15-year-old students who wish to become teachers tend to exhibit a weaker academic profile than those with other career aspirations.

This line of evidence is also supported by the results of the *Survey of Adult Skills PIAAC (Programme for the International Assessment of Adult Competencies)* (OECD, 2016), which shows that the low qualification of those who aspire to become teachers coincides with also low

performances obtained by practicing teachers in similar tests. And by Ingvarson's (2016) work in Australia, which uses as an indicator the score on the *Australian Tertiary Admission Rank* (ATAR) scale that reflects the student's academic trajectory in secondary education. However, also in Australia, Gore et al. (2016), who conducted a study with 6492 Australian primary, secondary and high school students, concluded that the significant differences between students who expressed their intention to pursue a teaching career and the others were not so much in prior performance but in intrinsic service and vocational motivations.

This data set seems to support the so-called negative selection hypothesis (Denzler and Wolter, 2009; Guarino, Santibañez and Daley, 2006; Hanushek and Pace, 1995) which holds that teacher candidates show weaker academic, cognitive and individual characteristics than students who choose other professional or knowledge areas.

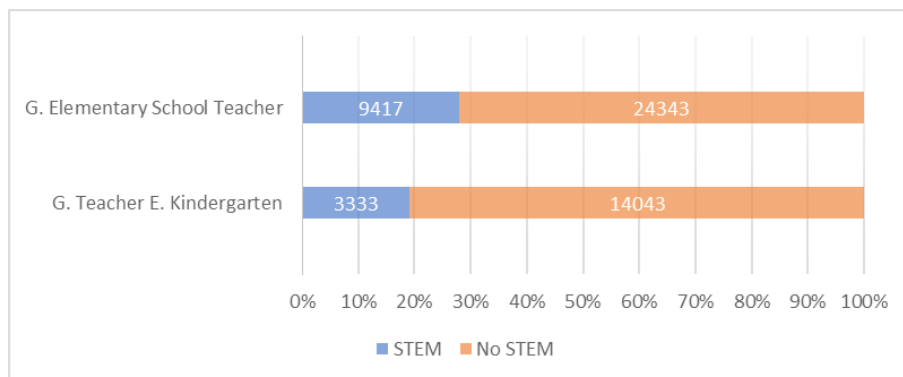
However, other authors (Roloff-Henoch, Klusmann, Lüdtke, & Trautwein, 2015) identify as sources of differentiation the science-type baccalaureate (or not) and vocational interests as the most relevant elements in determining the choice of aspiring teachers. In this study, the authors claim that the real differences occur between these two groups of students (science and non-science baccalaureate), while controlling for this academic background, the demographic and personal differences between aspiring teachers and others are neutralized. This is a relevant hypothesis that identifies a characteristic present and generalized in those students with an interest in the professional practice of teaching, since the majority come from a non-scientific baccalaureate.

Some preliminary analyses along these lines are being carried out in the ProTeacher² Project led by Castro and Gaviria. In an essentially descriptive way, some data from the Integrated University Information System (SIIU) of the Ministry of Universities of the cohorts corresponding to 2014-15, 2015-16, 2016-17 and 2017-18 of the entire Spanish University System (SUE) are presented. In those four academic years, there have been 51,136 students who have been admitted to the degrees of Teacher of Early Childhood Education and Primary Education. As can be seen in Graph 1, most students come from non-science baccalaureate degrees (No Stem), being 80.81% of the students in the case of the Degree in

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Early Childhood Education and 72.10% in the case of the Degree in Primary Education.

CHART I. Distribution of teacher degree students according to the baccalaureate at origin (frequencies and percentages relative to each degree).



Source: Prepared by the author based on data from SIIU.

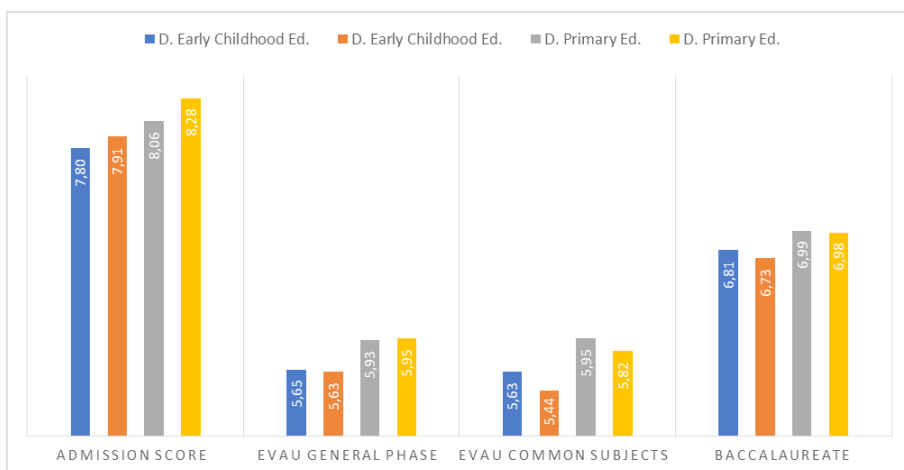
Students who access the teaching degrees in the SUE do so with an average grade of 7.88 for the Degree in Early Childhood Education and 8.22 for the Degree in Primary Education. These values represent 56.3% and 58.7% of the maximum possible score for access to Spanish universities, respectively. The access score to the degree weigh the baccalaureate scores and the various electives that each student has chosen to take in the University Entrance Examination (EvAU). It is therefore an indicator of the demand for these studies and of the difficulty of accessing them in relation to other university degrees. And what it shows is that the possibility of accessing teacher training is at a level of demand located around the arithmetic mean of the scale.

The study of academic qualifications prior to entering teacher training in Spain is also revealing. Figure II shows four indicators of academic performance prior to university entrance for students who choose the Degree in Early Childhood Education and Primary Education: admission score to the degree (weighted EvAU score), score in the general phase of the EvAU (average results in the unweighted university entrance exam),

average in the three common subjects of the EvAU (Spanish Language and Literature, Foreign Language and Spanish History) and grade in the baccalaureate. The averages are shown segmented according to the scientific (STEM) or non-scientific (non-STEM) baccalaureate of origin.

Regardless of the scale on which they are measured, these four indicators show a common tendency, the academic average of those who enter the teaching studies, with certain differences being observed depending on the baccalaureate of origin. The population data show that students entering the Degree in Early Childhood Education who have taken a non-scientific baccalaureate only have a higher level of previous performance in the grade for admission to the degree, while in the common subjects of the EvAU and in the average of the Baccalaureate, students whose baccalaureate was scientific have higher scores. Something similar occurs in the students who access the degree of Primary Education, since those who show a higher level of performance in the three common subjects of EvAU are the students who have taken a scientific baccalaureate. It is also observed that the overall levels of performance in any of these four indicators are higher for Primary School students.

CHART II. Academic profile of students in teaching degrees before entering university by baccalaureate of origin.



Source: Prepared by the author based on data from SIUU.

Only performance in the three common subjects of the university entrance exam can provide a directly comparable indicator of teacher's achievement before university entrance. The study of mean differences in the three common subjects of the EvAU in the Degree of Early Childhood Education between students coming from scientific (mean = 5.63**, standard deviation =1.28) and non-scientific (mean = 5.44, standard deviation =1.27) baccalaureate shows statistically significant differences ($\alpha = 0.01$), in favor of the former. The same occurs when comparing the scores in the Primary Education Degree for those with a scientific (mean = 5.95**, standard deviation =1.31) and non-scientific (mean = 5.82, standard deviation =1.31) itinerary. It can be affirmed that students coming from a scientific baccalaureate obtain better grades in these three common subjects than their classmates who chose the same studies and came from a non-scientific baccalaureate, confirming the importance of this variable. Note that the subjects that make up this average have an essentially "lettered" academic content.

At initial teacher education, there is a higher proportion of students who have taken a non-scientific baccalaureate, they also have a significantly lower comparative performance in the three common subjects of the university entrance exam than their undergraduate classmates who opted for a scientific pathway. This shows the relevance of this variable, especially in teacher training studies, since it seems that in addition to a comparable low initial performance in university entrance exams, there is also a majority presence of students from a non-science baccalaureate who systematically obtain a lower performance.

Thus, the academic profile of Spanish applicants to teaching studies would be characterized by significantly lower performance in the reading and mathematical competencies evaluated by PISA; in university entrance and baccalaureate performance, they are students with results at an average level, whose academic trajectory comes mostly from a non-scientific itinerary during baccalaureate, being also those who have lower performance in the common elements of the university entrance exam compared to those who come from a scientific baccalaureate.

Training and common teaching practices: what do teachers say what they do and do what they do in the classroom?

It is important to know what practicing teachers say about their training, what they say about their teaching and what they do in the classroom. Two OECD studies focus specifically on teachers: TALIS (*Teaching and Learning International Survey*), which, as a large survey, focuses on what teachers say, and *Global Teaching Insights*, which, as a study of teaching practice, focuses on what teachers do. Both studies are cross-national in nature, one and the other with Spanish samples.

Global Teaching Insights (GTI) (OECD, 2020a) is a study on teaching practices observed and assessed in a comparative way, defined as a “video study”. It is based on a pretest-posttest design, includes a varied set of measures on teaching (classroom management, socioemotional support and instructional practices in the classroom), obtained with a wide set of data collection techniques such as observation, questionnaires, tests and analysis of teaching materials in 700 classrooms in eight different countries (including Spain, with classrooms in the Community of Madrid). There were 85 teachers per country, which is not a small sample for this type of study. The teaching area is mathematics in 2nd ESO (8th grade). The final objective is to assess the quality of teaching (OECD, 2020b).

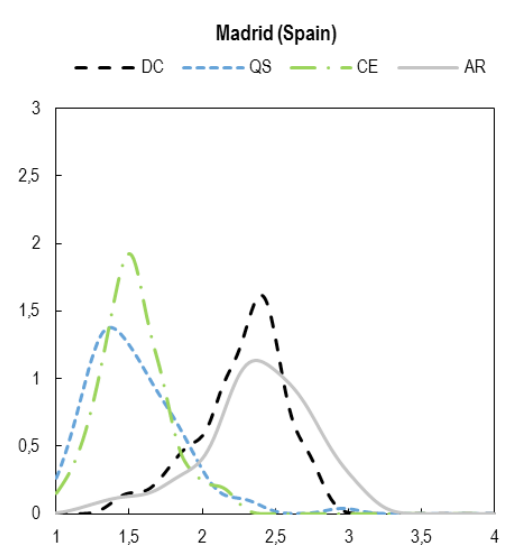
The general results show different behaviour in the three major factors studied. It is observed that teachers manage their classes well (averages between 3.49 and 3.81 on a 4-point scale) and offer social and emotional support (averages between 2.62 and 3.26 same scale) in all the countries studied. Compared to these two, the weakest factor in all of them is the assessment of the quality of instructional practices, with an average of less than 2.25 (moving from 1.74 to 2.24) on a 4-point scale (OECD, 2020a).

The instructional quality factor is a complex factor (for a detailed description, see Chapter 5 of OECD, 2020a) that assesses elements such as the quality of discourse and reasoning, the quality of the topic explained (through explicit connections, explicit patterns, and generalizations), the cognitive involvement of the task for the student, and the evaluation of responses.

The GTI results reveal that teaching (mathematics) occurs, in general terms, through a repetitive practice in which teachers use technology essentially as a means of communicating with students and scarcely to

deepen conceptual understanding. The report also highlights that few teachers provide feedback to students on why their reasoning is correct or incorrect (rates below 20% in most of the countries analyzed). Great variability is observed in the quality and depth of teachers' discourse, which shows differences in the length and depth of their explanations to students (from 56% of teachers in China (Shanghai) or Japan, to 19% in Spain (Madrid), and reaching the lowest values in Colombia or Mexico of 7%). The lowest scores for instructional practices were obtained in the assessment of subject quality (with differences from 1.36 to 1.97 on the 4-point scale) and cognitive involvement (ranging from 1.48 to 2.07 on the same scale) in all eight countries/economies included in this report. Figure III reproduces the distribution of the Spanish sample in the four subdimensions of instructional quality and allows us to observe the weak quality of the subject matter taught and of the classroom processes that promote the cognitive involvement of the student.

CHART III. Distribution of classes in Spain (Madrid), by mean scores in the sub-domain scores: observed quality of discourse (DC), quality of the subject matter (QS), cognitive engagement (CE) and assessment of and responses to students understanding (AR) in the classroom.



Source: OECD (2020a). Global teaching insights: a video study of teaching. Paris: OECD Publishing, pg. 121.

If the GTI report were to be taken as a reference for the adoption of measures to optimize the teaching activity, most of them should be related to instructional quality: improvement of the practices proposed to students, depth of the reasoning and knowledge presented and development of strategies and activities to improve the cognitive involvement of students, as well as the expansion of the world of learning through the incorporation of technology beyond communication facilities, which, on the other hand, students already use to learn in this context of the information and learning society.

What teachers say about their training and performance in practice has been studied more profusely. Following the OECD studies, the reference is TALIS (OECD, 2018), which is a large survey aimed at Primary and Secondary Education teachers about their initial training, professional development, teaching practices and professional satisfaction. In the 2018 edition, a representative Spanish sample of 7246 Primary E. teachers and 7407 Secondary E. teachers participated (MEFP, 2019a and 2019b).

In relation to teaching practice, TALIS asks for various indicators. We will focus on the teachers' stated description of their teaching practice in the same elements observed in the GTI study, as judged through the external and direct evaluation of teaching practice.

As a teaching practice, teachers report that they let students practice with similar tasks until they understand the subject matter. The Spanish sample of primary school teachers indicates that 84% of them do this "frequently" or "always". Of the 9 countries responding to this survey, only Denmark (63%), France (58%) and Japan (56%) are below. Consistently, only 32% of Spanish primary school teachers assign students projects once a week, Spain being the country with the highest percentage in this indicator, and 42% let students use ICT resources to carry out class projects or exercises, with three countries above (Denmark (58%), Turkey (57%) and Sweden (51%)). According to this study, these last two indicators are associated with the teaching enrichment construct.

TALIS also measures the cognitive activation construct through four indicators: presenting tasks for which there is no obvious answer, presenting tasks that require critical thinking, having them work in small groups to find a joint solution, and inviting them to decide which procedure to use to solve complex tasks. In Spain, primary school teachers report doing this "frequently" or "always" in 45%, 65%, 63% and 55% respectively.

The profile of secondary school teachers is like that of primary school teachers, except for the decrease in practice with similar tasks (77%) and the increase in the possibility of students using ICT resources (51%).

All these practices declared in the TALIS study are consistent with those evaluated through the GTI study, i.e., essentially the same recommendations could be made on teaching processes aimed at improving learning.

It is reasonable to think that the instructional quality described by Spanish teachers has a certain correlation with the training received. Eighty-five percent or more of the primary school teachers in TALIS state that they have received formal education in the content (86%) and pedagogy (85%) of the subjects they teach, general pedagogy (96%) and teaching practice in the subjects they teach (86%). These percentages are not far from the rest of the countries participating in the study. In this sense, Spanish teachers have received training like that of the rest of the teachers participating in TALIS. Although there are some differences. The specific note on Spain points out that, during their initial education and training, 48% of teachers in Spain have studied their own subject content, specific and general didactics and classroom practice, a proportion that is lower than the average in the OECD countries and economies participating in TALIS (79%). However, in the last 5 years, the Spanish percentage rises to 68%.

This data may be particularly relevant to understand the Spanish situation. Looking at results of the systematic review Coe et al. (2014) there is strong evidence of a direct relationship between the level of knowledge of a teacher regarding the content they are teaching, and the gains obtained by their students. The most effective teachers have a deep knowledge of the subjects they teach and that a lack along these lines will have negative effects on their students. And this knowledge of one's subject matter has to be compatible with an understanding of how their students will process that information, how they will best understand it, what the most common misconceptions are, etc.

Differences with the countries included in the study are also found in the indicators on formal education in the use of ICT (49% in the Spanish sample, although in the last 5 years 90% of teachers say that they have received formal education in the use of ICT), student behaviour and classroom management (58%) (which does not seem to be a difficulty, according to GTI) and supervising student development and learning

(72%). In all cases, Spanish teachers are in third to last position a total of 9 countries, with the difference being particularly marked in the case of ICT use.

The profile declared by Secondary Education teachers in the first four indicators mentioned is like that of Primary Education and like the OECD and EU averages. The greatest differences are found in the indicators of formal education in the use of ICT, where 38% of the teachers in the sample report having received such training in secondary education, although if we differentiate between teachers in the last 5 years, this value exceeds 80%. This last figure is in line with the averages obtained for the OECD and the EU. Another figure that illustrates the differences in the training of secondary school teachers in Spain is related to the supervision of student development and learning, where only 50% of teachers report having received formal education on this point, although among teachers in the last 5 years this percentage rises to 75%, which is a value more in line with the OECD and EU averages.

The data collected in both OECD studies reveal an internal consistency that is noteworthy, as it reveals weaknesses and strengths in teaching practice reflected both in the study of teaching practice *in situ* and in the study of practices and training reported by practicing teachers. It is also noteworthy that the behaviour of Spanish teachers does not differ greatly from that of the countries studied as a whole. In this sense, teaching performance and training received is comparable to that of teachers in the countries studied, except for training in disciplinary content, which is clearly inferior in the OECD context.

So, are Spanish teachers unique?

The synthetic answer to this question is no.

When entering university studies, aspiring teachers in Spain have a discrete academic trajectory, which is similar in their performance to that of many other future teachers in OECD countries. Their majority profile comes essentially from a non-scientific baccalaureate, in which they show lower performance levels than their fellow aspiring teachers who take their baccalaureate in the scientific branch.

In the description that practicing teachers give of their initial training, there are no differences with the rest of the OECD countries. The absence

of training in the disciplines they teach, and the ICT training reported by teachers is noteworthy, with the Spanish value being at a great distance from the OECD average. Nor are there major differences in teaching practices (both declared and externally evaluated). Even in the most deficient area, instructional quality, Spanish teachers' evaluations are similar to the rest of the practices observed in the OECD context. This improvable instructional quality could be focused on the type of stimuli and practices proposed to students for learning, on the depth of the reasoning exposed and on the generation of specific feedback to each student on the successes and mistakes they make in the learning process.

So no, they are not very different. Perhaps it is good to bring here the general sense of Hattie's (2008) findings, which is that in education almost everything works, and therefore it is important to look for those teaching interventions that are more effective than others. In view of the studies analyzed, Spanish teachers do not stand out negatively either in their training or in their intervention compared to those of other educational systems. However, given their differential position, located in the centre or at the limit of the lower third of the distributions (in training or in some elements of teaching practice), their impact on school performance may not be particularly noteworthy, at least in comparison. In other words, teachers perform their work like the rest of the elements of the Spanish educational system (academic performance, international performance indicators, educational spending, etc.), in an average range with room for improvement.

Presentation: Teachers for the 21st Century: Access to Studies and the Teaching Profession

To get out of this middle ground, there is a wide menu of proposals for improving teacher training and practice. The definition of the set of actions for better prepared teachers in our classrooms involves identifying the origin to which the area of improvement is related. If it is located at the time of access to studies and the entry profile of aspiring teachers, the proposals are related to improving the mechanisms and requirements for access to studies. If it is related to the weak training received (whether of a disciplinary or pedagogical nature or of a professionalizing nature), the proposals are related to the university training offer. If it is attributed to

access to and maintenance in the teaching profession, the proposals are usually related to optimizing teacher training, diversification of access systems and improvement of working conditions.

I bring here the reflection of M. Fernández-Enguita (2020) which, although debatable and in need of empirical research support, outlines a plan for joint updating in all the formative and professional milestones of teachers:

“It is now commonplace that the teaching profession must change, but how? First, with more demanding initial training and selection, which must and can go hand in hand. Second, that this initial training should be more solid and more scientific, not “in the truth” or anything like that, but as the necessary, though not sufficient, basis for reflective professionalism and lifelong learning. Third, with a high level of digital competence, since this is today what literacy was yesterday, indispensable for teaching and learning management. Fourth, a sufficient period of induction by employers and colleagues, and not by the university, prior to full qualification. Fifth, collaborative working conditions, in the field, based on co-teaching and also on non-teaching activity.”

And this is the central question addressed in this monograph, which offers research results and reflections supported by evidence on the teachers we want and need in the 21st century. This volume contains 13 contributions that provide diverse evidence and reflections for the optimization of the teaching career from its beginnings to in-service training.

The work of Egidio Gávez focuses on effective policies to support the professional induction to teaching, analyzing the well-known educational MIR from an international perspective that allows him to identify the features that characterize the induction programs to teaching based on the clinical approach that have obtained better results in other countries, as well as the main recommendations of two International Organizations, the OECD and the EU in order to infer the possibility of its application and the requirements that should be met to successfully implement this model in the Spanish educational system. In this same area of reflection, the essay by López Rupérez focuses on the analysis and impact of two models of access to the teaching profession, the models by delegation and the models by cooperation, linking it to the professional development of teachers as the central axis of teacher-centered policies.

The bulk of the contributions are related to teacher training. The article by Arnaiz, Escarbajal, Alcaraz and de Haro starts from the premise that a well-trained professional committed to the postulates of inclusive education. The article gathers the results of research on the so-called “*open classrooms*” to analyze the training of teachers and other professionals to meet the special educational needs of students who require extensive and generalized support. The article by Sánchez-Serrano, Alba-Pastor and Zubillaga del Rio, on the insufficiency of initial training in educational attention to diversity, examines the training of teachers and other professionals to meet the special educational needs of students requiring extensive and generalized support. They carry out an examination of the training on inclusive education by reviewing the curricula of the curricula of the Primary Education Teacher degrees of the 39 Spanish public universities, showing the variability in the contents and approaches as well as the strengths and weaknesses of the same. Montoro Medina’s work analyzes the inclusion of STEM education in the initial training plans for Primary Education teachers in force in Spain. A documentary analysis of the 236 teaching guides of basic or compulsory subjects related to STEM areas in Spanish public universities is carried out.

The contribution of Otero-Meyer, Velaz de Medrano and Expósito-Casas studies classroom activities in Early Childhood Education in order to suggest changes and improvements in university training in this degree, through a set of empirical data collected through a controlled observational study in a large sample of classrooms and centers that teach the first cycle of Early Childhood Education in 4 Autonomous Communities of Spain. The work of Martínez Izaguirre, Yániz Álvarez de Eulate and Villardón Gallego analyzes teachers’ perception of the degree of relevance of the competencies attributed to their professional profile, as well as their level of application in practice based on their active reflection in a large sample of Primary and Compulsory Secondary Education teachers.

The work of Rodríguez, González and González uses the 2019 Labor Market Insertion Survey of University Graduates, which collects data from a large sample of graduates in Spanish universities to study in a comparative way the degree of acquisition of ICT and language skills by teachers, given the relevance in the labor market. The results show that, although teachers have a higher level in both skills than other

professionals in the social welfare system, the values are lower than those expressed by STEM professionals.

Azpillaga, Bartau, Aierbe and Intxausti link school improvement in the Basque Autonomous Community with teacher training, linking student results with the school as an organization and teacher training. The research incorporates mixed methodology by applying multilevel models and focus groups to a wide range of schools. The results show that in all the centers, teacher training and professional development is important and there is a relevant investment for its promotion, differentiating measures for high and low efficiency centers.

Oliver-Trobat, Rosselló, Comas, Calvo y Sureda's work focuses on the processes of improvement in the access to teaching studies. It presents the process of design, elaboration, implementation, and validation of ad-hoc admission tests for the admission of students to the Teacher's Degrees in Early Childhood and Primary Education in a participatory context. Manso and Garrido-Martos analyze the perceptions on initial training and access to the profession of active teachers of Compulsory Education in Spain through the perceptions of a large sample of teachers. Within the heterogeneity of the group, teachers show a negative evaluation of the current systems of both initial training and access to the profession, pointing out differential measures by groups.

Jiménez, Arroyo, Hurtado, Ruiz, Sánchez, Illana and González-Barbera studied the vocational and performance profiles of student teachers (as opposed to other care professions) in a large sample of students in the first year of university studies at the Complutense University of Madrid. It is observed that the previous academic trajectory is a strong determinant of success in the first year of university, when the highest level of dropout occurs.

Finally, the paper by Navarro, López-Martín, Asencio, Expósito, Carpintero and Ruiz deals with the use and characteristics of the most widely used test worldwide to measure teacher motivation, the FIT-CHOICE (Factors Influencing Teaching Choice) instrument. The reliability of the different scales used and their variability among the works that use it are analyzed, with the reliability generalization meta-analysis technique, pointing out the good reliability of most of the subscales, with some exceptions, and the great variability of this psychometric indicator among studies, being linked to the characteristics of the FIT-Choice used and to the type of teacher.

In 1937, Freud wrote that, until the advent of psychoanalysis, there were two impossible professions: governing and educating, considering the permanent insufficiency of the results. There is always something that will not be achieved. Psychoanalysis added the third one. However, let us not cease to aspire to good government, good health, and good education.

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