

OECD Education Working Papers No. 190

Early Career Teachers: Pioneers Triggering Innovation or Compliant Professionals?

Alejandro Paniagua,

Angelina Sánchez-Martí

https://dx.doi.org/10.1787/4a7043f9-en

OECD

Organisation for Economic Co-operation and Development

EDU/WKP(2018)26

Unclassified

English - Or. English

28 November 2018

DIRECTORATE FOR EDUCATION AND SKILLS

EARLY CAREER TEACHERS: PIONEERS TRIGGERING INNOVATION OR COMPLIANT PROFESSIONALS?

OECD Education Working Paper No. 190

Alejandro Paniagua, OECD
Angelina Sánchez-Martí, Universitat Autònoma de Barcelona (UAB)

This working paper has been authorised by Andreas Schleicher, Director of the Directorate for Education and Skills, OECD.

Alejandro Paniagua, Consultant, Alejandro.Paniagua@oecd.org

JT03440644

This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

OECD EDUCATION WORKING PAPERS SERIES

OECD Working Papers should not be reported as representing the official views of the OECD or of its member countries. The opinions expressed and arguments employed herein are those of the author(s).

Working Papers describe preliminary results or research in progress by the author(s) and are published to stimulate discussion on a broad range of issues on which the OECD works. Comments on Working Papers are welcome, and may be sent to the Directorate for Education and Skills, OECD, 2 rue André-Pascal, 75775 Paris Cedex 16, France.

This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgement of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org.

Comment on the series is welcome, and should be sent to edu.contact@oecd.org .

This working paper has been authorised by Andreas Schleicher, Director of the Directorate for Education and Skills, OECD.

---

www.oecd.org/edu/workingpapers

© OECD 2018

Acknowledgements

We want warmly to thank the guidance, support and valuable feedback of Tracey Burns throughout the process of preparing this paper. Initial conversations with David Liebowitz and Hannah Von Ahlefeld were very helpful to define the approach to new teachers and innovation. We would also thank to Nóra Révai and Anna Woznicka for their comments and feedback on earlier drafts of this paper, and other colleagues within the OECD Secretariat who have aided in developing this work. In particular, Kenna Aoife, who drafted the section on substitute teachers, Noémie Le Donné and Pablo Fraser, who helped with managing data from the TALIS survey, Marc Fuster, for his continuous input and comments, and again Hannah Von Ahlefeld and Nóra Révai, who developed a text box for sections 4.1 and 4.2, respectively.

We would like to further extend our thanks to Matthew Gill, who contributed to both editing and preparing the working paper, and EDU Communication colleagues for their helpful editorial advice. Esra Salim and Charlotte Mayard kindly helped with the translation of the abstract into French.

Our thanks also to David Istance for conceptualising, launching and leading the Innovative Pedagogies for Powerful Learning project. The aims and main outputs of this project were the starting point of the analysis on innovation and early career teachers presented here.

Abstract

New teachers entering the profession are said to bring with them enthusiasm, idealism and recent training – a promising combination for innovative teaching. However, these early career teachers are also commonly portrayed as professionals facing exceptional challenges, with fragile identities who leave the career in high proportions. Can these new teachers help schools to innovate while trying to perform as effective teachers during their initial years? This paper argues that the difficulties most early career teachers encounter, which have largely remained unchanged over the last 50 years, are embedded characteristics of the teaching profession. Further, it discusses the importance of the first five years of the teacher career in acquiring critical professional skills, and highlights the importance of context over experience *per se*. The paper concludes by making the case that these first five years could work as a residency for early career teachers – similar to that of medical training – where they could receive support to experiment in sheltered environments. This professional residency might represent a policy milestone in the building of a continuum of teachers' professional growth and development.

Résumé

Les nouveaux enseignant(e)s qui débutent dans la profession sont considérés comme porteur d'enthousiasme, d'idéalisme et de compétences modernes - une combinaison prometteuse pour un enseignement innovant. Pourtant, ces enseignant(e)s en début de carrière sont généralement représentés comme des professionnels aux identités fragiles qui sont confrontés à des défis exceptionnels, et qui quittent leur carrière en proportions élevées. Ces enseignant(e)s seront-ils capables d'aider les écoles à innover tout en essayant d'accomplir leur travail d'enseignant(e)s de manière effective au cours de leurs années initiales? Cet article soutient que les difficultés rencontrées par la majorité des enseignant(e)s en début de carrière, étant largement restées inchangées durant les 50 dernières années, sont des caractéristiques ancrées dans la profession d'enseignant. De plus, cet article traite de l'importance des cinq premières années dans la carrière des enseignant(e)s pour acquérir les compétences professionnelles essentielles, et souligne l'importance du contexte par rapport à l'expérience elle-même. Pour conclure, nous soutenons que ces cinq premières années devraient fonctionner comme une résidence pour les enseignant(e)s en début de carrière - semblable à la résidence de la formation médical- où ces enseignant(e)s devraient recevoir du soutien pour expérimenter dans des environnements abrités. Cette résidence professionnelle pourrait représenter une étape politique importante pour la construction d'un continuum de croissance et de développement professionnels des enseignants.

Table of contents

Acknowledgements **3**

Abstract **4**

Résumé **4**

1. Introduction **7**

2. Early career teachers: the importance of the first years **9**

2.1. Approaching the diverse experiences of early career teachers 9
2.2. The particular challenges of early career teachers: moving beyond deficit views 14
2.3. Teacher's effectiveness and early experiences 21

3. Thousands of new teachers enter classrooms annually, but the schools appear to change very little. Why? **23**

3.1. The gap between identifying innovative practices and validating innovative pedagogical knowledge 23
3.2. Early career teachers and school culture: the limits of individual action 27

4. Promoting support for early career teachers: insights from induction programmes **31**

4.1. Early career teachers support within a continuum of teacher learning 32
4.2. Induction as innovation: towards a new understanding of early professional development 35

5. Early career teachers as *de facto* teacher residency: concluding remarks and the way forward **39**

References **42**

Tables

Table 1. Substitute Teacher Concentration across OECD Countries 11
Table 2. Percentage of new teachers who used alternative pathways in OECD countries 12

Figures

Figure 1. The relationship between teacher professionalism and innovation 8
Figure 2. Proportion of early career teachers in TALIS 2013 in lower secondary schools 10
Figure 3. Average years of working experience outside teaching 13
Figure 4. Feelings of preparedness of new vs. experienced teachers 16
Figure 5. Differences between early career teachers and experienced teachers in schools with at least 30% students coming from socially disadvantaged homes 19
Figure 6. Teachers envisaging looking for another job in the future 21
Figure 7. Improvements in Maths Student Achievement Attributable to Additional Teacher Experience in New York City (NYC) 22
Figure 8. Institutional Habitus at the crossroad of agency and structure 29
Figure 9. Proportion of early career teachers in lower secondary education who took part in formal induction programmes. 32
Figure 10. OECD Teacher Education Pathway Model 34

Figure 11. Overview of the main issues regarding early career teachers and innovation 39
Figure 12. Early Career Years as a form of Teacher Residency 40

Boxes

Box 1. The challenges of building evidence-based innovative practices 25
Box 2. Addictive presentism: innovation as a barrier for innovation 27
Box 3. Institutional habitus and the conditions of the possible for teachers 29
Box 4. The TALIS Initial Teacher Preparation Study 34
Box 5. Leadership and enquiry for early career teachers in the Fern Federation, Wales 38

1. Introduction

> *A much larger number of new teachers will enter the profession in the next 5-10 years than in the past 20 years. The entry of substantial numbers of new teachers with up-to-date skills and fresh ideas has the potential to substantially renew the schools.*
>
> "Teachers Matter" *(OECD, 2005[1])*

Despite the increased reporting of teachers and schools that are innovating the teaching of new skills and learning goals (e.g. Winthrop, Barton and McGivney, 2018[2]), schools continue to struggle with innovation. Faced with the persistent challenge of improving the engagement of learners, addressing educational gaps or becoming more efficient, there have been increasing calls to prepare teachers to become change agents (Pettersson and Molstad, 2016[2]). As expressed by Schleicher, "initial teacher education programmes have to prepare new teachers to play an active role in the design and running of education, rather than just following standardised practices" (2011, p. 13[3])

As the opening excerpt shows, the interest around new teachers potential in bringing new blood to schools is nothing new. And yet the analysis of their potential remains under researched. Existing research on early career teachers has placed a significant attention on the challenges and difficulties they encounter. During their initial years, teachers have to adapt and make sense of the specific school(s) context and culture where they start their careers, learn how to navigate the traditions and particular 'staffroom politics' and to negotiate divergent views about the most appropriate teaching methodology. Further, they have to learn quickly how to manage conflicts between personal perceptions and public expectations, or how to make sense of the idiosyncratic practices derived from experience used by their colleagues (Schatz-Oppenheimer and Dvir, 2014[4]; White and Moss, 2003[5]; Rots, Kelchtermans and Aelterman, 2012[6]).

The emphasis on the challenges that early career teachers face has framed our understanding of them through a deficit perspective (Martinez, 1994[7]). As a result, initiatives are made focusing mainly on helping novice teachers adapt to their new workplace – which in practice means to help them conform to the existing system (Shayshon and Popper-Giveon, 2016[8]). Of special relevance here is the question of *how desirable is it that early career teachers can be quickly induced and well adapted to the reality of most schools which are not innovative environments?* In other words, what is the best way to enter a profession that still struggles with building a strong professional knowledge base (Guerriero, 2017[9]) and that still needs to improve the evaluation and agreement upon the impact of innovative pedagogies (Paniagua and Istance, 2018[10]).

The analysis of early career teachers (defined as those teachers with less than five years of experience) presented here interrogates existing tensions inscribed in the practice of teaching during the first years. Between what teachers learn in initial teacher education[1] and the classroom practice they encounter in real settings; between pressures to perform according to established standards and their own agency and professional responsibility; and between their ideals and the institutional realities of schools. In particular, one question that this paper aims to answer is *how realistic it is to expect that new teachers entering the profession could become both good professionals and innovative at the same time*, as the

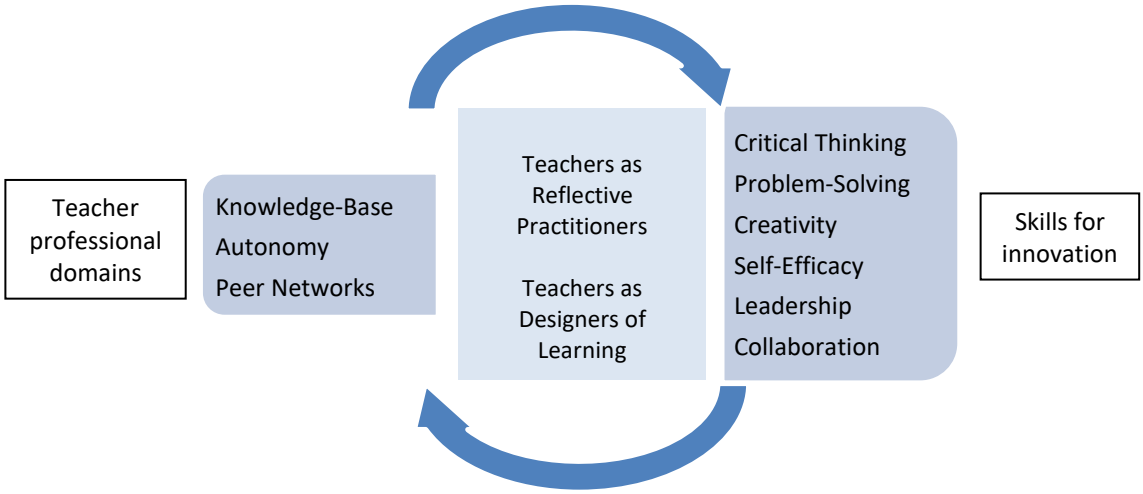
[1] Also known as undergraduate teacher education, or pre-service training, is defined as the required level of qualification prior to entering service as a teacher.

opening excerpt suggests. In other words, is experience a prerequisite for innovation, or is innovation a condition to create meaningful teaching experiences?

One possible answer to the question posed in the title of this paper is that teacher policies now aim at training effective teachers – according to a set of well-established standards of practice and pedagogical knowledge – that would be capable of advancing or, at least, suggesting innovations working collaboratively with other teachers (Schleicher, 2011[3]). If we understand teaching innovation as a set of skills and professional knowledge that derives its importance from the changing nature of classrooms, students and broader social and cultural context of schooling, the apparent dilemma about innovation *or* professionalism of early career teachers becomes blurred. Simply put, in order to become reflective professionals capable of design effective learning environments teachers need to develop skills for innovation. Conversely, these processes for innovation do not start in a vacuum, but are based on teacher knowledge, the capacity to take decisions and to interact with other colleagues - see Figure 1.

Figure 1. The relationship between teacher professionalism and innovation

Reflective practice and design thinking are underpinned by innovation and professionalism.



Source: Based on Paniagua and Istance (2018[12]), *Teachers as Designers of Learning Environments: The Importance of Innovative Pedagogies*, Educational Research and Innovation, OECD Publishing, Paris; OECD, (2016[13]), *Supporting Teacher Professionalism: Insights from TALIS 2013*, OECD Publishing, Paris; OECD, (2011[14]), *Skills for Innovation and Research*, OECD Publishing, Paris; Carlgren (1999[15]), "Professionalism and teachers as designers", *Journal of Curriculum Studies*, Vol. 31/1, pp. 43-56.

This paper argues that the nature of the difficulties that most early career teachers encounter in schools, and which have largely remained unchanged over the last 50 years (Schuck et al., 2018[11]; Cherubini, 2009[12]), are connected to the cultural, social, personal and institutional nature of teaching. By reflecting on these issues this analysis aims to contribute to a better understanding of teacher initial years in the career and to provide key insights that can help improve teacher policies more generally.

The paper is organised as follows:

- Section 2 overviews the diverse experience of early career teachers, and explores the challenges they face. It also provides insight into the genuine importance of the first years in the teaching profession.

- Section 3 discusses the main barriers for innovation in teaching, i.e. the lack of innovative pedagogical knowledge and the impact of the institutional context on individual actions.
- Section 4 details the potentials of induction programmes and the importance of developing a continuum of teacher training. It also describes existing challenges when implementing induction initiatives and presents some critical literature about the absence of professional learning in the form of enquiry communities and networks.
- Section 5 overviews the main arguments discussed to argue for the need to look at early career years as a form of teacher residency.

2. Early career teachers: the importance of the first years

This section offers an overview of early career teachers and the main issues that characterises their diverse experiences as described in the literature. Under the notion of early career teachers this report include other related definitions that are commonly used to refer exclusively to the very first year – e.g. new, novice or beginning teachers – or the first three years – newly qualified teachers. Since early career teachers works as an encompassing term, the discussion includes topics that are specific to new/beginning teachers, and thorough the analysis at times these terms are used these terms explicitly. The report argues that the challenges early career teachers face do not derive from the condition of 'unexperienced' professionals, but instead are connected with contextual and institutional variables of teaching (e.g. the existence of schools and classrooms that are more challenging, or the problem of indeterminacy of teacher's professional knowledge that should be the base of their practices).

Section 2.1. presents existing data on early career teachers. This is complemented with data from research on substitute and second career teachers. Following this, there is a summary of their challenges (as presented in literature) and a discussion about the specificities and commonalities between early career teachers and experienced teachers (focusing on the role of experience, the indeterminacy of teacher's professional knowledge and practice, the allocation of beginning teachers in the most challenging schools, and attrition during these early years). The section ends with a brief discussion on the literature, which highlights the importance of early experiences to improve the effective of teachers, and their subsequent influence for teaching development throughout their career.

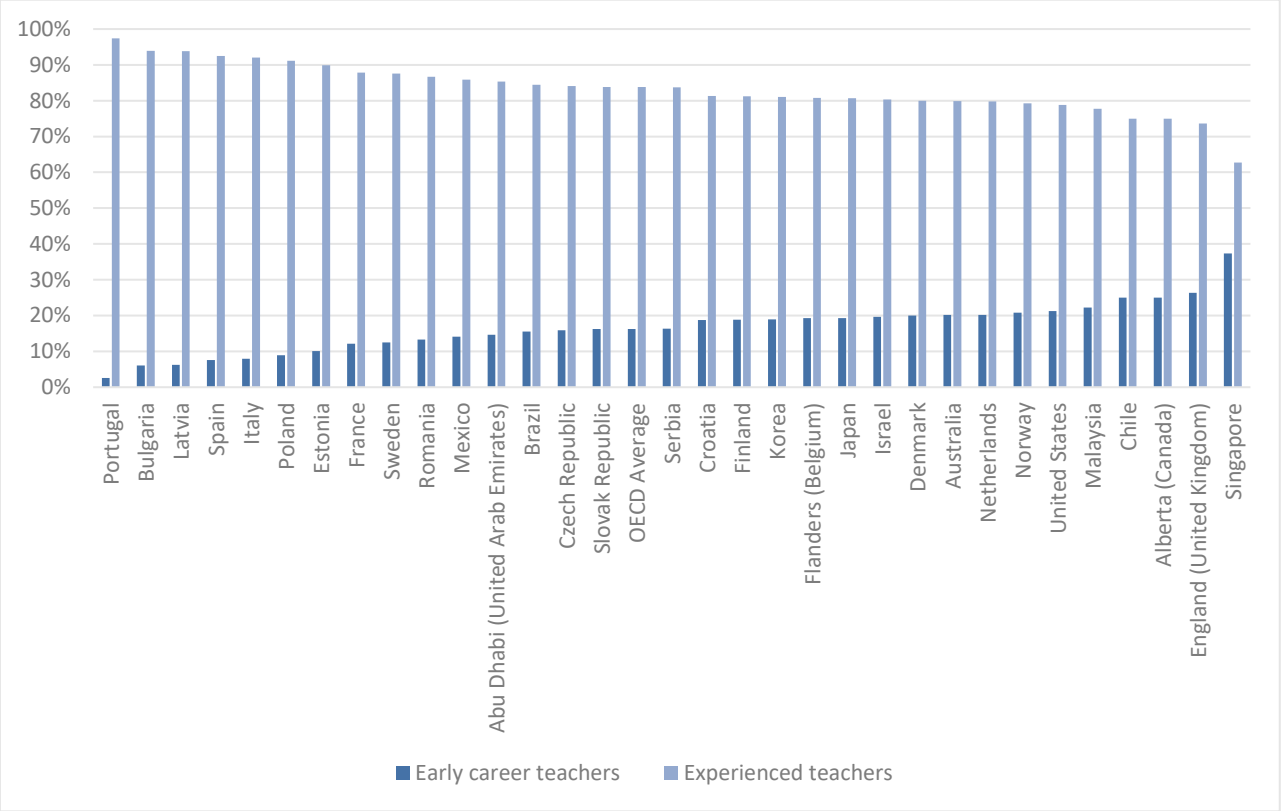
2.1. Approaching the diverse experiences of early career teachers

As highlighted by Atkinson and Delamont (1986[13]) there is a tendency to reproduce the idea of teachers as a 'community' and therefore to disregard the importance of fragmentation within the teacher workforce. The case of early career teachers illustrates clearly the inherent challenge of describing who they are, according to their diverse national and personal contexts – e.g. age, professional experience, ethnicity or gender. For example, early career teachers can enjoy very different job status (tenure or substitute position, or probation time), in highly diverse contexts, and be subjected to particular pressures (tight probation assessments or national standards, labour market constraints, school/principal accountability system).

In short, trying to portray them within an international perspective is challenging. As shown in Figure 2, the percentage of early career teachers in lower secondary schools across

OECD countries shows dramatic variations: from representing a scarce 2.6% of the teaching workforce in Portugal, to 26.4% in England (United Kingdom), or even 37.7% in Singapore (OECD average is 16.2%).

Figure 2. Proportion of early career teachers in TALIS 2013 in lower secondary schools



Source: OECD (2013[14]), *Teaching and Learning International Survey (TALIS) complete database*, OECD Publishing, Paris.

The importance of attending to the diversity of the characteristics of early career teachers is illustrated in two particular examples that are often overlooked in the analysis and discussions on new teachers: substitute teachers and second career teachers. Although there is a dearth in literature regarding substitute teachers and no international report has been done so far, the case of substitute teachers – also referred as emergency teachers – is one of extreme importance given that in some countries this status seems to represent the first stage in the teacher career of a significant number of early career teachers. Therefore, the apparent low proportion of these teachers for some countries - Figure 2 - could be potentially explained by the lack of information regarding substitute teachers, who are not included in TALIS, rather than an inherent characteristic of the educational system.

The case of second career teachers has been more researched, in particular the reasons for moving into teaching and the experiences of these individuals as career-change teachers. The growing importance of this group to potentially address the shortage of teachers in some countries has resulted in the proliferation of alternative certification programmes for individuals with professional experience without teaching qualifications. The following subsections provide a brief overview about these two important groups of early career teachers.

2.1.1. Substitute teachers

The number of substitute teachers as a proportion of the total teacher workforce varies greatly across OECD countries. As a result of different definitions of substitute teachers across countries, comparable data on the prevalence of this workforce is not available. For instance, in France the definition comprises long-term substitute teachers contracted for one academic year while in Victoria, Australia substitutes are only those for less than 30 consecutive days. However, regardless of the specific definition, the absolute number of substitute teachers across these countries highlights the importance of having high calibre substitute teachers who can ensure the continued learning of students in the absence of classroom teachers.

Table 1. Substitute Teacher Concentration across OECD Countries

	Absolute Number	Proportion of Total Teaching Population %	Academic Year
Australia (Victoria)	8 288	19	2016
Canada (Prince Edward Island)	410	22.5	2017-2018
Denmark	1 353	2.8	2014
France	26 513	8	2016-2017
Wales (UK)	4 687	6	2016
United States	527 780	6.23	2017

Source: Kenna (forthcoming[15]), "Substitute Teachers in OECD countries", *OECD Education Working Papers*, OECD Publishing, Paris.

Two groups, namely early career teachers and retired teachers, primarily make up substitute teacher pools across three jurisdictions where data is available. As expected, given the prevalence of early career and retired teachers in the substitute teaching pool, the age profile of substitute teachers also reflects the ages of these two groups. In England (United Kingdom), there is a higher proportion of newly qualified teachers in the substitute teacher pool (8.1%) than nationally (3.9%) (Hutchings et al., 2006[16]). In Wales (United Kingdom), approximately 25% of substitute teachers are early career teachers and some 24% of substitute teachers were under the age of 29 compared to 17% of school teachers (Education Workforce Council, 2017[17]). In British Columbia, Canada, 4.5% of sampled substitute teachers were under 25 years-old compared with 0.6% of the full and part-time teachers in the province. Furthermore, 44% of substitute teachers are 25-34 year-olds compared to 19% of the province total (British Columbia Teachers' Federation, 2016[18]).

Substitute teachers are predominantly negatively perceived in the education sector "Warm bodies", "highly-priced-babysitters", "glorified babysitters", "fillers" and "people off the street" (Weems, 2003[19]; Cardon, 2002[20]) are just some of the negative terms used to describe substitute teachers. Weems (2003[19]) identifies three common perceptions of substitute teachers she believes circulate throughout popular culture including: (i) the incompetent, unqualified teacher, (ii) the deviant outsider and (iii) the guerrilla superhero. Negative perceptions can threaten the dignity of substitute teachers, the integral role they play in the education system and alienate them from their full-time classroom teacher counterparts (Duggleby and Badali, 2007[21]; Cardon, 2002[20]). Moreover, these perceptions can adversely impact their experiences and ability to carry out their work, negatively impacting student learning.

Throughout much of the academic literature, substitute teachers consistently describe their relationships with full-time classroom teachers in a negative light, associated with some form of exclusion. Examples of terms used to describe their relationships include

"alienation", "isolation", "marginalised" and "outsider" (Cardon, 2002[20]; Duggleby and Badali, 2007[21]; Nicholas and Wells, 2017[22]). This outsider status is reflected through one of Weems' (2003[19]) depiction of substitute teachers as "a deviant outsider". This may negatively impact substitute teachers' experiences, through feelings of inferiority, and their inability to forge professional relationships with full-time classroom teachers, perpetuating feelings of marginalisation.

2.1.2. Second career teachers

Compared to substitute teachers, second career teachers are a group that is easier to define. However, there is no data available about the proportion of these individuals in national teacher workforces. One way to try to draw a picture of this group is to analyse the existing data on the number of new teachers that have been training in alternative certification programmes, as displayed in Table 2.

Table 2. Percentage of new teachers who used alternative pathways in OECD countries

	Pre-primary %	Primary %	Low Secondary %	Upper Secondary %
Belgium (French)	n.a.	n.a.	4.9	5
Chile	n.a.	n.a.	n.a.	3
England	n.a.	14	27	27
France	4	4	0.8	0.8
Germany	n.a.	3	3	3
Israel	18.3	3.3	9.7	11.1
Poland	n.a.	0.95	0.89	1.72
Sweden	5	5	5	5

Note: Although half of the countries with available data reported to have alternative certification programmes, only a few are able to report the proportion of teachers using these alternative routes.
Source: OECD (2014[23]), *Education at a Glance 2014: OECD Indicators*, OECD Publishing, Paris.

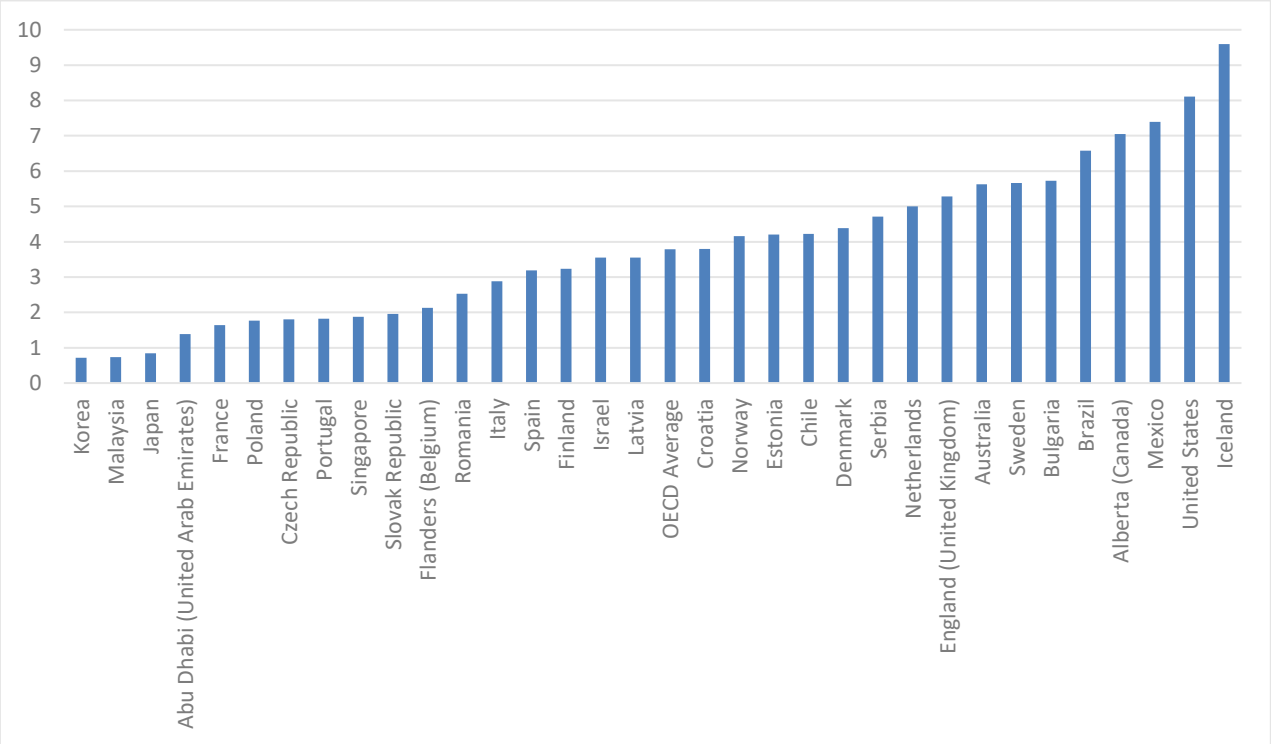
The main goal of these programmes is to allow individuals, who already have at least a Bachelor's degree, to obtain certification to teach without having to complete a university-based teacher education programme[2]. Presumably, a significant number of these teachers are mid-career-switchers into the teaching profession that have used these alternative pathways to start their new careers. Since initial teacher education in Europe tend to be a four- or five-year university degree and mostly a master level for upper secondary teachers rather than alternative routes, these numbers need to be approached with caution. For the case of U.S., with a now long tradition providing alternative certification programmes, reports estimate that between 30%-40% of early career teachers have received their training in alternative routes (Feistritzer, 2011[24]).

Another source of valuable information is provided by TALIS, which reports that teachers have an average of almost 4 years of work experience outside teaching, with significant variation. Considering that the average of teaching experience is 16 years, this means that

[2] Since there are alternative certification programmes in which the main goal is to provide an alternative training to those interested in becoming a teacher, e.g. Teach for All/Teach for America, here we focus on these training programmes offered in traditional teacher education institutions or programmes that are explicitly targeting second career teachers, e.g. Levinsky College in Israel or new initiatives in Australia. Although some alternative routes are nearly indistinguishable from the regular ones, the former focus on providing more 'on the job' training and thus provide a fast-track to a career change.

around a fifth of the total experience of TALIS teachers has happened outside schools. Figure 3 shows a significant dispersion among countries participating in the survey, with Iceland, the United States, Alberta (Canada), Brazil, Mexico, and among the countries where teachers have the highest proportions of years of experience outside teaching.

Figure 3. Average years of working experience outside teaching



Source: OECD (2013[14]), *Teaching and Learning International Survey (TALIS) complete database*, OECD Publishing, Paris.

In short, the data displayed and the growing importance of second career teachers in countries like Iceland, Israel, the United States and England (United Kingdom), challenges the conventional image of new teachers as a young, fresh college graduates entering classrooms. The promise that second career teachers can address attrition rates and improve the quality of teaching is well illustrated in the analysis of Newman (2010[25]), who quotes the way the former Teacher Training Agency in England (United Kindgom) referred to second career teachers as an 'untapped reserve of skills and talent' (2010, p. 462[25]). In a similar vein, Watters and Diezmann (2015[26]) discuss that those with advanced qualifications in STEM subjects who have experienced work in a profession for a decade are potentially an important resource to improve teaching effectiveness in these areas, inspire students to achieve better, and to pursue careers in the sciences.

Among the perceived advantages of these second career teachers are the presumption of the transferability of their skills into teaching, their applied knowledge of their subject matter, their eagerness to share experiences with colleagues, their good communication skills and their tolerance of diversity. However, existing research is inconclusive regarding the identity of second career teachers compared to first career teachers. While some studies points to their enthusiasm, high aspirations and strong sense of commitment, or their openness to new teaching ideas and innovation, other studies describe as well the

'unacceptable painful beginnings' they experience, the excessive workload, and even a 'transition shock', including being exhausted and finding it difficult to achieve a work/life balance (Newman, 2010[25]).

Tighelaar, Vermut and Brouwer (2012[27]) argue that the impact of alternative certification programmes is modest, showing that both dropout rates among participants of these programmes and during the first years of their new careers tend to be high. In a previous study, Tighelaar, Brouwer and Korthagen (2008[28]) cautioned about the risk of alternative routes that do not meet minimal quality standards and which may make graduates fall victim to a "revolving door effect" – the easier to enter, the easier to leave.

Building on a survey to 4 300 first year teachers in New York City, Boyd et al. (2011[29]) concluded that recruiting career-switchers into teaching may not be the solution for teacher quality issues. Their results indicate that second career teachers are less effective at teaching math than other teachers, and they do not appear to be more effective than new teachers without prior experience. Further, echoing the research of Tighlelaar and colleagues mentioned above, they suggest that students who have followed an alternative certification programme may be less stable and more likely to leave a school after their first year of teaching. Finally, they call for the need to pay attention to the highly diverse backgrounds of second career teachers and to examine their relative effectiveness according to their different professional backgrounds.

2.2. The particular challenges of early career teachers: moving beyond deficit views

The diverse challenges early career teachers experience have been extensively documented and corroborated in literature (e.g. Schuck et al., 2018[12]; Spencer et al., 2018[30]). In his review of literature from 1969 to 2005, Cherubini (2009[12]) highlights the most salient problems reported by these teachers: how to maintain classroom discipline, to foster student motivation, improve teacher student relations, how to relate to parents, develop good assessments, manage workload, and relations with other colleagues. Most notorious are the continuous references to the phenomenon of 'disenchantment' that new teachers experience during the first weeks of teaching, and the feelings of helplessness, insecurity and alienation that can appear during the first year (Schatz-Oppenheimer and Dvir, 2014[4]). Further, the intense emotional labour inscribed in the teaching practice is rarely acknowledged in initial teacher education programmes and has only been researched recently (Keller et al., 2014[30]). Consequently, finding ways to cope effectively with stress and workload continues to be strongly based on experience, which in turn potentially makes early career teachers more exposed to emotional exhaustion and burnout.

In trying to offer a balanced picture of early career teachers, Cherubini (2009[12]) questions what literature has largely identified as their 'fragile identity' by highlighting the process of negotiation early career teachers engage in during their socialisation into the school culture. Similarly, other researchers have gone a step further and have openly challenged the idea of 'reality shock'[3] commonly associated to new teachers during their first year (Correa, Martínez-Arbelaiz and Aberasturi-Apraiz, 2015[31]). They argue that the active role and agency of early career teachers, as strategic individuals that are ready to engage with other professionals, should also be acknowledged to avoid approaching them mainly

[3] This and related ideas, e.g. 'practice shock', or 'cultural shock', have been used since the 70s to describe the significant differences between the expectations and experiences of teacher candidates and the unforeseen challenges and circumstances new teachers encounter in real school settings (Caspersen and Raaen, 2014[36]).

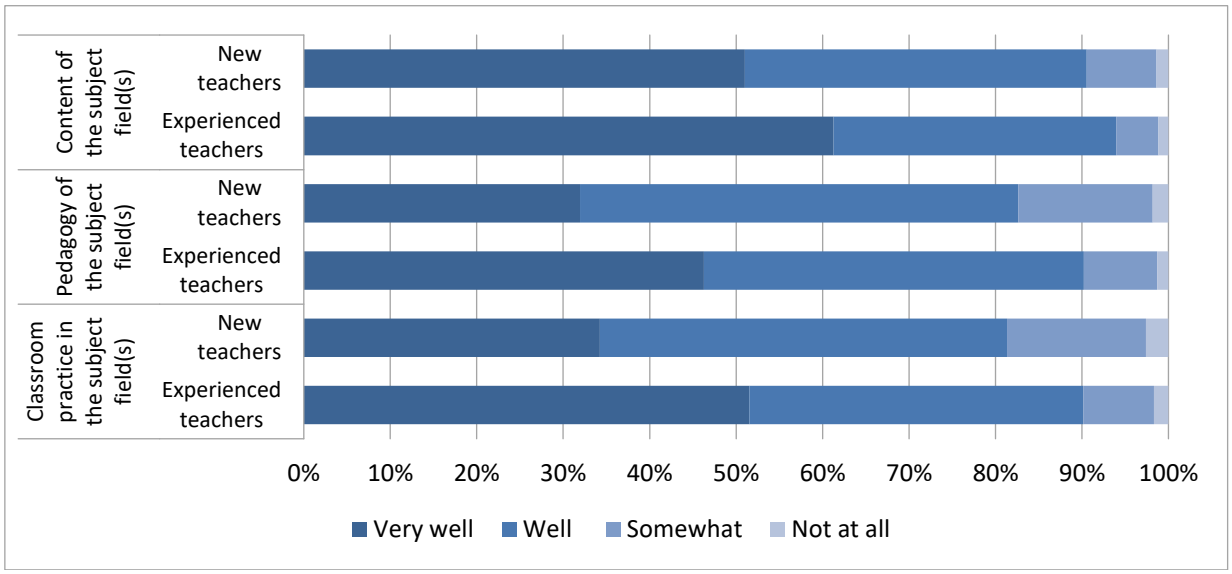
as victims. Most importantly, following Correa, Martínez-Arbelaiz and Aberasturi-Apraiz (Ibid), the traditional concept of 'reality shock', while capturing certain difficulties of new teachers, reproduces the division between those who know – experienced teachers – and those who do not, who apparently lack professional knowledge. However, as discussed in the next section, the connection between experience and knowledge is not that clear. While experience does play an important role in the improvement of certain skills, e.g. classroom management, it does not seem to play a significant role in shaping the feelings of readiness and self-efficacy of teachers over time, or for lessening their stress.

2.2.1. The role of experience in new and experienced teachers

If, as suggested by Tomlinson (1995[32]), teachers should be considered 'semi-professionals' given the key importance of their on-going experience and interaction with other colleagues, it could be expected that the overall feeling of readiness, self-efficacy and time spent on teaching should improve significantly over time. However, the extent of these differences is questioned by Jensen et al. (2012[33]) in their analysis from the results of the first round of TALIS in 2008 (OECD, 2009[34]). If more experienced teachers declare that they spent 6% more of the classroom time on teaching than new teachers, what does this difference tell us about the role of experience? For Jensen et al. (Ibid), one argument to explain this minimal difference might be that those new teachers start their careers well-prepared. Conversely, it might be argued that continuous professional development programmes are not robust enough to create a big difference between experienced and new teachers. This argument is further supported by the results of the second round of TALIS (OECD, 2014[35]) in which new and experienced teachers do not report a significant difference in "feeling prepared" (Figure 4). At first sight, differences in the in the 'very well' bar appear to be significant, but overall the differences between new and experienced teachers regarding feeling well- or very-well- prepared are low – always below 10%. Similarly, Caspersen and Raaen (2014[36]) described a limited difference in the way novice and experienced teachers cope with teaching, and also small variance between the sense of self-efficacy. Instead, they point to contextual factors and, particularly, knowledge about how to look for the support of colleagues and supervisors, as the key variable that distinguishes experienced teachers.

Figure 4. Feelings of preparedness of new vs. experienced teachers

More than 80% of new and experienced teachers report knowing well or very well the content and practices of their subject.



Source: OECD (2013[14]), *Teaching and Learning International Survey (TALIS) complete database*, OECD Publishing, Paris.

Teachers' stress is another variable that seems to be relatively decoupled from experience. In their study on the nature of burnout among teachers, Høigaard, Giske and Sundsli (2012[37]) argue that teachers' stress is not a short-lived problem and cannot be circumscribed to a phenomenon taking place in the early stages of the profession. Instead, they call for the need to establish a professional mental readiness for managing the enormous responsibilities that teachers face, and avoid limiting this challenge around early career teachers.

Accounting only for levels of stress and intentions of leaving the profession, Ryan et al. (2017[38]) found no significant difference between novice and experienced teachers. Recent approaches to the issue of teacher burnout have moved beyond accounting for levels of job satisfaction, enthusiasm or motivation and have instead focused more on depersonalisation[4], reduced personal accomplishment and the key role of emotional exhaustion (Keller et al., 2014[30]). Interestingly, it is precisely increasing levels of depersonalisation and disenchantment what has been characterising the feelings of teachers during the last decades (Hargreaves and Shirley, 2009[39]; Ryan et al., 2017[38]; Troman and Raggl, 2008[40]).

By challenging the weight of experience to understand the experiences of early career teachers, our goal is to highlight how these are connected with key elements that characterise the nature of the teaching profession. Experience does play an important role

[4] Defined as a lack of empathy and motivation, with increasing feelings of isolation, which results from coping with stressful everyday situations.

for teacher in many important ways, such as learning how to navigate the institution[5] or, as the next section discusses, in how teaching practices are validated in the school environment.

2.2.2. The socialisation[6] of teachers as cultural transmission

By definition, early career teachers are new and have recently been involved in pre-service training that should have exposed them to some well-developed theoretical knowledge supported by important empirical findings (Hogben, 1978[41]; Resnick et al., 2010[42]). To an extent, their up-to-date professional knowledge is then their best asset from which to build their confidence and professional identity. However, as pointed out by Révai and Guerriero (2017[43]), existing teaching practices are commonly based both on tacit knowledge that is very difficult to explicit and make visible, and on practices that are not rooted in evidence-based research. This in part explains the lack of alignment between teacher standards and teacher education programmes (Révai, 2018[44]), and the limited connection between initial teaching education programmes and specific school cultures (Resnick et al., 2010[42]).

This concern has been recently echoed by Schleicher (2018[45]) for whom the absence of a clear professional knowledge – or the lack of understanding of what it entails - makes practice to remain unarticulated, isolated and difficult to transfer. More importantly, the absence of a strong corpus of professional knowledge makes local practice to be based on the personal, unquestioned experiences of teachers rather than on principles coming from educational sciences. (Shayshon and Popper-Giveon, 2016[8]). Atkinson and Delamont (1986[13]) call this characteristic 'indeterminacy', and argue that it explains why a significant part of teacher practices remains detached from the explicit knowledge acquired in initial teacher education institutions. This results in a common assumption that mastery in teaching is still treated as the realisation of natural talent rather than a professional skill acquired in training institutions.

Confronted against this indeterminacy, early career teachers' up-to-date professional knowledge cannot be easily transformed into a valuable asset, which leaves them in a vulnerable position to confront the teaching models established by the teacher community (Allen, 2009[46]). It is in this sense that Atkinson and Delamont (1986[13]) argue that teacher socialisation should be approached as a cultural transmission process with a particular management of knowledge that is inscribed in the reproduction of the teaching profession. During their first years, early career teachers experience a process of enculturation in which their relationships with other colleagues in the profession – within but also outside their local community of practice - play a vital role to build up their professional knowledge (Vangrieken et al., 2015[47]). These relationships are a fundamental support in allowing

[5] One example of how to navigate the system is the way experienced teachers are more able to articulate their needs and received more collegial and superior support, compared to novice teachers (Caspersen and Raaen, 2014[36]).

[6] Socialisation is defined as the process whereby individuals build their teaching perspectives, competences, and values, because of influence of a group or institution. Enculturation is the process of being socialised in a particular context or culture. In this context, socialisation is used to talk generally about the *explicit, conscious* process of learning how to teach, while enculturation is mentioned to highlight the *implicit, unconscious* process in which attitudes, beliefs, opinions, values and behaviours are transmitted in a particular (school) culture – see a more detailed discussion of school cultures in section 3.2.

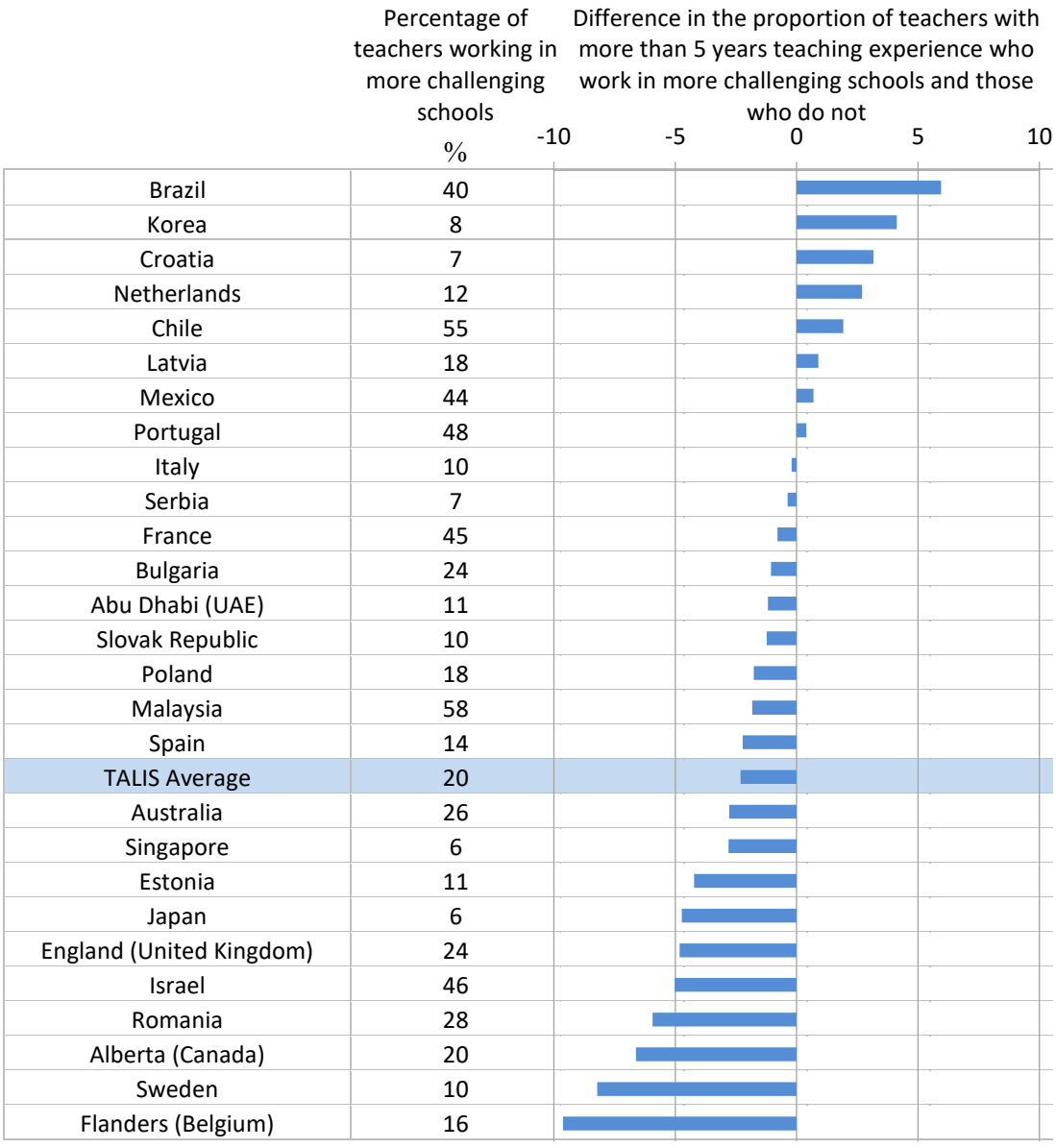
them to actively solve problems and reflect on their own professional choices, but they can also become a source of tension if these relationships become a form of 'ad hoc' accountability to mould their performance (Solbrekke and Sugrue, 2014[48]). In fact, Correa, Martínez-Arbelaiz and Aberasturi-Apraiz (2015[31]) suggest that the idea of 'reality shock' (commonly used to describe new teachers' experiences) actually describes the tensions and sometimes the overt resistance of early career teachers in adapting to the status quo displayed by their colleagues.

2.2.3. Early career teachers working in the most challenging schools

Although the failure and stagnation in challenging schools is a consequence of wider political, societal and economic conditions that cannot be expected to be fully addressed by the action of teachers (Little and Bartlett, 2010[49]), how teachers are distributed across schools does have an impact on the reproduction of inequality. As discussed in a recent report (OECD, 2018[50]), gaps in student performance related to socio-economic status are wider in these systems where disadvantaged schools employ less qualified and less experienced teachers. On average, teachers in these schools have more than one year less of experience and are 10% less likely to have a more credentials than their colleagues in advantaged schools. Moreover, in disadvantaged schools one in three students have a principal reporting that the school's capacity to provide instruction is hindered by a lack of teaching staff - compared to 1/5 of students in advantaged schools (Ibid).

As shown in Figure 5, in 2013 in most TALIS countries early career teachers were more likely to teach in schools where over 30% of students came from socially disadvantaged homes; where at least 10% of students had special needs; and where at least 10% were children whose first language was not the language of instruction. A previous report on teachers and diversity (OECD, 2010[51]) also emphasised the difficulties in attracting highly-qualified teachers to disadvantaged schools, and how even the best early career teachers in these schools often leave within a short period of time. According to Schleicher (2018[52]), this is a persistent picture that continues to impact on the experiences of too many teachers in their initial years.

Figure 5. Differences between early career teachers and experienced teachers in schools with at least 30% students coming from socially disadvantaged homes



Source: OECD (2013[14]), *Teaching and Learning International Survey (TALIS) complete database*, OECD Publishing, Paris.

As already discussed in the previous section, beginning teachers rely on initial experiences and the collaboration of their colleagues to acquire critical pedagogical knowledge. By starting their careers in more challenging schools, it implies that they are more likely to be in contact with less experienced teachers, to address more complex classrooms and to enjoy less organisational support. In other words, if teacher quality is understood as a collective enterprise in which teaching is underpinned by institutional variables and not simply as an individual crusade and skills (Little and Bartlett, 2010[49]), it follows that early career teachers are more likely to be exposed to what Gallant and Riley (2014[53]) define as

'arrested development', and thus to increase significantly their chances of leaving the profession.

2.2.4. Complicating the narratives of attrition and early career teachers

Countries are increasingly concerned about teacher early retirement being one of the main sources of teacher attrition. As reported by (Gallant and Riley, 2014[53]), teachers leaving the profession during the first five years seems to have reached an epidemic proportion in countries like Australia, the U.K., or the U.S., with rates up to more than 40%. Other research (Struyven and Vanthournout, 2014[54]; Borman and Dowling, 2017[55]) has described that this trend changes significantly after the first vie years.

However, this picture is nuanced by the lack of data available at the national and international level regarding attrition during the early years (European Commission, 2013[56]; Weldon, 2018[57]). Reliable data is scarce, and only isolated pieces of research have reported that early career teacher attrition is high in Australia, England (United Kingdom), Belgium (French Community), Norway, and the United States., while other countries like Argentina, Brazil, Chile, Paraguay, and Peru show low to medium levels of teacher stability, as reported by Ávalos and Valenzuela (2016[58]). Figures for other countries vary enormously depending on the source, such as Austria, Italy, Spain or, to a lesser extent, the Netherlands (European Commission, 2013[56]).

Given the lack of available data, it is plausible to suggest that there exists a form of 'attrition panic' about the perceived magnitude and meaning of those teachers leaving the profession, that result in enduring 'myths' about the whole profession, e.g. teaching being a lifelong 'call' for good and committed teachers. Therefore retirement in the early years not only represents teachers 'giving up' or the result of burned out professionals, but also informed career decisions of teachers who leave the profession without ill feelings or significant crises (Smith and Ulvik, 2017[59]). Teacher attrition is thus a multi-faceted phenomena that comprises:

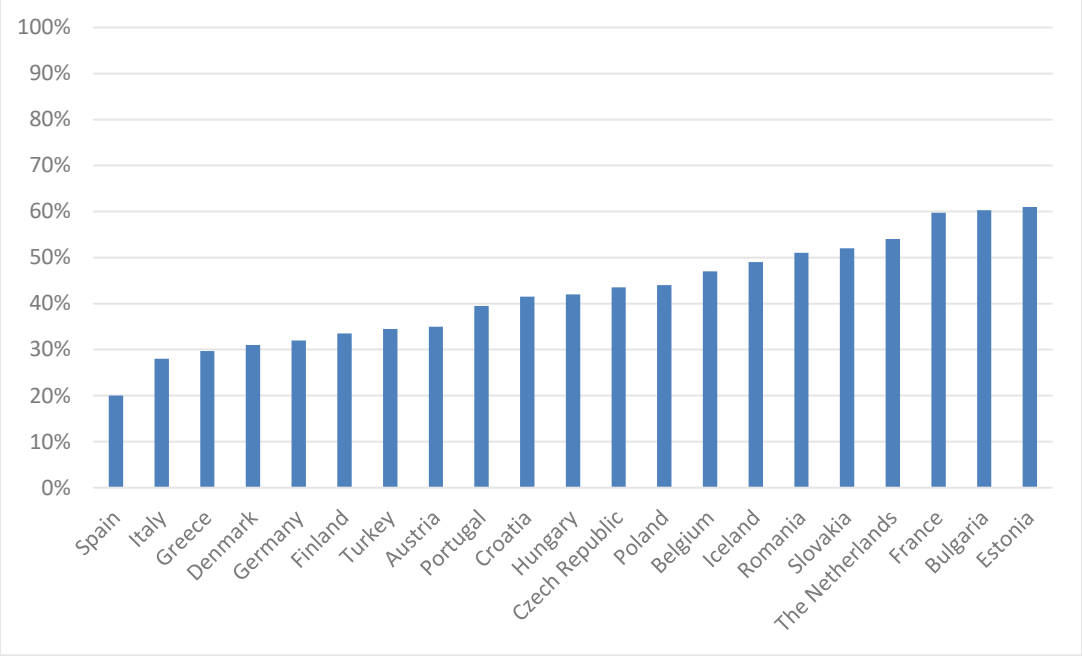
- managerial problems – how to provide a qualified teaching force;
- economic problems – the loss of investment and the administrative hassle it creates;
- a public health issue – for teachers that leave after having been sick or on sick leave for long periods;
- and a human resource mechanism – representing a mechanism of self-selection for those who don't meet the expectations in terms of quality (Kelchtermans, 2017[60]).

Although early teacher attrition is underpinned by personal and professional variables, recent research has highlighted that teachers' work conditions are a stronger predictor (Borman and Dowling, 2017[55]) – e.g. monetary rewards are important but not as fundamental as working conditions. Lindqvist, Nordänger and Carlsson (2014[61]) caution against the current understanding of the attrition phenomenon of early career teachers, arguing that individuals not only leave, but also return to the teaching profession over time: their experiences out of the school in many cases enhance their teaching skills. Several studies have shown that teacher turnover during early years is particularly prominent in qualified and committed teachers (Troman and Raggl, 2008[40]; Cochran-Smith et al., 2012[62]; Feng and Sass, 2011[63]). Whereas Watt and Richardson (2008[64]) have emphasised the importance of what they refer to as 'lower engaged desisters' among beginning teachers – representing 27% of the sample of 500 teachers, and characterised

with low skills and a willingness to plan a short career in the teacher profession. In light of this literature, early leavers and stayers appear as heterogeneous groups, charged with different motivations, expectations and skills.

In attracting so much attention, the focus on early teacher attrition has diverted the importance of voluntary leaving of experienced teachers, early retirements and the prevalence and impact of teacher's mobility. For example, in the U.S., the combined figure of leavers and movers - voluntary and involuntary - place the overall turnover rate at about 16% (Carver-Thomas and Darling-Hammond, 2017[65]). Although the lack of research only allows raising hypothesis for this discussion, available data on 23 European countries - see Figure 6 - shows that the percentage of teachers that might envisage looking for another job represents at least a 20% of the teacher workforce (European Commission, 2013[56]). These figures are critical to contextualise the current early attrition 'panic' within the wider trends taking place in the teacher profession.

Figure 6. Teachers envisaging looking for another job in the future



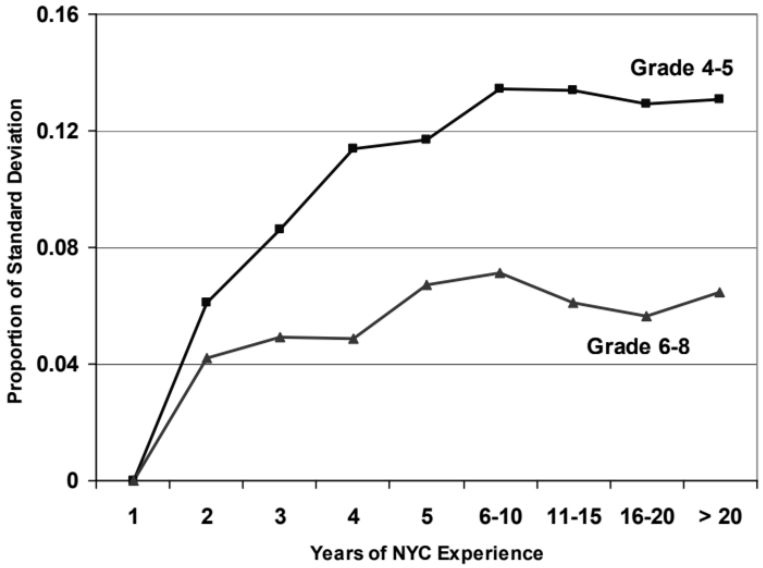
Source: European Commission (2013[56]), *Study on Policy Measures to improve the Attractiveness of the Teaching Profession in Europe*, Publications Office of the European Union, Luxembourg.

2.3. Teacher's effectiveness and early experiences

Research linking teacher effectiveness to early stages of the teacher career appears to be the most conclusive factor to warn about the importance of the experiences of early career teachers. In her review of the impact of teacher experience on effectiveness, Rice (2010[66]) states that the influence of experience is stronger during the first four or five years of the teacher career – see Figure 7. After these first five years, there are only marginal returns which tend to diminish over time. Given that existing research is unclear regarding which kind of early career teachers leave the profession – e.g. those less able or those more able -, this finding needs to be read with caution, as it might show the overall increase of

effectiveness because of less able teachers leaving the profession rather than the result of the experience per se.

Figure 7. Improvements in Maths Student Achievement Attributable to Additional Teacher Experience in New York City (NYC)



Source: Boyd et al. (2008[67]), "The effectiveness and retention of teachers with prior career experience", *Economics of Education Review*, Vol. 30/6, pp. 1229-1241.

Nevertheless, King Rice's reflections are important because she challenges the powerful idea underpinning teaching effectiveness of 'more is always better'. In terms of experience, she cites other research to argue that other policy factors such as initial teacher education or induction programmes can have an equal or even more impact than early-career experiences. Kini and Podolsky (2016[68]) suggest that teaching experience is positively associated with student achievement gains throughout the whole career, but also emphasise that these gains are highest during the initial years. They go on to state that effectiveness improves at a greater rate when teachers stay at the same grade level, subject or district, and that these experienced teachers also exercise a positive influence for the learning of their colleagues – and hence again the importance of teacher relationships. Gordon et al. (2006; cited in Jensen et al., 2012[34]) go a step further when concluding that the early experience of teachers have a strong impact in the way they improve their effectiveness throughout their entire career, thus implying that the more successful early career teachers are, the more chances they have to obtain more returns through their teaching experience.

3. Thousands of new teachers enter classrooms annually, but the schools appear to change very little. Why?

> *"Across the whole of Britain there are far too many changes that are taking place all at the same time, and teachers are being inundated, not just the leaders, but teachers are being inundated with all these things"*
>
> *Headmaster (Hargreaves and Shirley, 2009[39])*

As early as (1978[41]), the seminal work of Hogben suggested that new teachers were in fact a major source of innovation for schools, and advanced key insights regarding why these organisations were geared to resist it. Although Hogben's work has not been referenced in subsequent reflections regarding innovation and early career teachers, current research seems to confirm his two core observations regarding beginning teachers and innovation. First, school systems do not do enough to recognise or capitalise on beginning teachers' enthusiasm and willingness to be innovative in their teaching (Shayshon and Popper-Giveon, 2016[8]; McCromack and Thomas, 2003[69]). And second, that as early career teachers are by definition unaware of the routines of the local community of practice, they are therefore a "fertile ground where informal, unplanned and serendipitous innovations can take place" (Correa, Martínez-Arbelaiz and Aberasturi-Apraiz, 2015, p. 73[31]). Reflecting on the case of the transfer of ICT-enhanced learning activities in their teacher practice, Agyei and Voogt (2014[70]) offer an illustration of Hogben's insights when they state that beginning teachers are more likely to be dissatisfied with existing teaching approaches and will change these using pedagogies that support student's active learning. Further, Ulvik and Langørgen (2012[71]) emphasise the digital competences and understanding of young people as salient features of early career teachers that experienced teachers might learn from.

In his discussion, Hogben (1978[41]) is cautious enough to problematise the relationship between early career teachers and innovation, thus arguing that *ideally* new teachers need to imply some kind of minimal adaptation from the part of the schools and that, *ideally*, these new teachers are able to bring something *educationally new* to the school. For him, one of the key reasons that beginning teachers are not used as a key resource for schools is due to how these institutions, as bureaucracies, tend to favour only those innovations that are less threatening to the school organisation. For example, schools easily engage with *the idea* of certain innovations but do not always adopt these innovations extensively and comprehensively *in practice*. However, using the rhetoric of innovation allows schools to appear publicly as responsive, efficient and up-to-date. The following sections build on the work of Hogben to discuss two key issues regarding early career teachers and innovation:

a. The problems in accounting for validated innovative professional knowledge and the lack of 'engineering' to mobilise that knowledge – diffusion mechanisms, using Hogben's terminology;

b. The limits of individual action within a particular school culture.

3.1. The gap between identifying innovative practices and validating innovative pedagogical knowledge

Coming back to the idea of 'indeterminacy' introduced in the discussion of the socialisation of teachers, if teachers' pedagogical knowledge is characterised by the difficulty in linking their tacit knowledge -which is rooted in their local context - into explicit and generalisable

knowledge, the field of innovative practices is even more elusive. As discussed by Paniagua and Istance (2018[10]), the innovation landscape today is populated by hundreds of very local experiences, and different frameworks and recommendations that conflate new learning goals, content, skills, organisation factors and different variables of pedagogical knowledge.

Although there is a growing effort for documenting and creating comprehensive frameworks that give sense of the innovation taking place worldwide (e.g. Winthrop, Barton and McGivney, 2018[2]), it remains unclear the way these experiences will eventually be added as part of a valid knowledge for the teaching profession. Since teaching ultimately builds on the complex, unpredictable and paradoxical context of the classroom (Gannon, 2012[72]), it is therefore a challenge to build a professional knowledge that is at the same time certain and manageable, on the one hand, and rich enough to capture the creativity and reflection that accompanies innovative teaching (Mockle, 2014[73]; Krise, 2016[74]). In order to overcome this challenge Paniagua and Istance (2018[10]) propose to look at innovation as alternative or fresh solutions for tackling classroom challenges, highlighting the importance of context and the hybrid character of innovative teaching. For these authors, innovation in teaching becomes a problem-solving process rooted in teachers' professionalism, a normal response to constantly changing classrooms – as illustrated in Figure 1

In short, part of the problem of building validated innovative professional knowledge lies in the persistent lack of evidence of new approaches to teaching and learning – see Box 1 - or the debate about the very nature of the evidence that these innovations should demonstrate.

Box 1. The challenges of building evidence-based innovative practices

Although there is a growing body of research describing the impact of innovative practices (e.g. Sliwka, 2008[75]; van den Broek, 2012[76]) the common definition of what constitutes 'evidence-based' gives sense of the challenges of building a strong corpus of pedagogical knowledge from the unique and scattered experiences that exist around the world. For example, the No Child Left Behind Act in the United States. (cited in Mitchell, 2015[77]), defines evidence-based as: (1) grounded in theory; (2) evaluated by third parties; (3) published in peer-reviewed journals; (4) sustainable; (5) replicable in schools with diverse settings; and (6) able to demonstrate evidence of effectiveness.

Since most of innovative experiences in teaching and learning come from particular settings and teachers, it is hard for schools on their own to meet these six criteria when trying to communicate and scale-up their initiatives. In some cases, the partnership with other institutions or working through a network of schools can facilitate the production of such information (Paniagua and Istance, 2018[10]). From the point of view of academic research, Makel and Plucker (2014[75]) show the persistent problem of educational research to produce sound policy and practice given the almost inexistent replications of studies – only 0.13% of education articles are replications of previous ones. This finding also illustrates how in education novelty is valued over truth, which also has consequences in the way innovation is acknowledged and implemented in schools – see Box 3.

Robust evidence is critical to convince stakeholders that a reform is needed, and is also key to allow for well-informed decisions. However, conflicting data or information hinders the legitimacy of an evidence-informed approach and is one of the barriers for validating innovative approaches in terms of education policy (OECD, 2018[76]). Education systems need to map and synthesise evidence effectively and help schools to strengthen their capacity to build evidence. In particular, alternative and innovative schools typically characterise their assessments as 'low stakes', e.g. holistic and multidimensional models focusing on motivation and student participation, which do not always match well with 'high-stakes' assessment often used at the system level. Conversely, innovative assessment formats need to be developed to complement self-reported assessment and large scale, standardised assessments (OECD, 2013[77]).

Another fundamental challenge is the difficulty to know the extent to which teachers' pedagogical knowledge – and related practices – is or is not changing. As argued by Révai and Guerriero (2017[43]) this debate has not been resolved yet, for evidence seems weak and controversial. Using different databases, a recent report on measuring innovation in education (OECD, 2014[78]) has renewed efforts to explicitly measure innovation in education systems, showing an ambiguous picture regarding teaching and practice. On the one hand, this report describes positive changes in relation to some practices that are considered innovative – e.g. relating lessons to social life, fostering high order skills and individualised instruction. However, the study also shows the hegemony of lecture-style presentations, teacher-centred approaches, the increased use of textbooks, and standardised texts. In conclusion, the report calls for implementing dedicated surveys and assessments to ascertain the content and level of innovation taking place in schools.

One example of the limitations of current surveys to capture the innovations taking place in classrooms and schools is acknowledged by TALIS itself when it is openly stated that this kind of survey is inappropriate for studying processes of innovation (Vieluf et al.,

2012[79]). Other studies based on PISA results (Echazarra et al., 2016[80]; Schmidt, Zoido and Cogan, 2014[81]) have approached innovation[7] when they argue that collaboration, formative assessment, graded challenges, and cognitive activation are key non-traditional teaching practices to foster students learning in mathematics, or when they show how enhanced opportunities to learn are related to student performance. Still, explicit and rich descriptions of pedagogical innovations at the classroom level are absent from international surveys.

Based on the analysis of case studies, other research has been able to describe the design features that help schools become innovative and to document promising case studies featuring particular innovations (e.g. OECD, 2015[85]; European Commission, 2018[86]). However, a look at the teaching innovation landscape shows the lack of a common international framework of pedagogies resulting in teachers trying to make sense of the hundreds or even thousands of innovative cases and experiences coming from diverse sources. Moreover, quite often the way these innovations are showcased revolves around their unique nature, one that is intertwined with a particular context which makes them difficult to scale-up and adapt to realities outside of where they come from.

In fact, in terms of diffusion mechanisms, it seems that educational sciences have not advanced drastically from the general reflections raised by Hogben (1978[41]). It might be that there are now better theories of change and therefore a better understanding of the factors that cause change. However, we do not have yet enough theories of changing – on how to influence those causes, as argued by Fullan (2007[82]) –to effectively apply evidence-based practices in a way schools can adopt and scale-up innovations based on these design principles. In the words of Desforges and Abouchar (2003[83]) there is a need of more social and *educational engineering* to apply what we know about teaching and learning at the policy, school and classroom levels.

In their work on innovative pedagogies, Paniagua and Istance (2018[10]) try to address this concern by emphasising the importance of framing innovations at different scales – single lessons, classroom projects, subjects, schools projects, and so on – and to relating it to the personal capacities of teachers and the particular context of the school. The background idea is that innovation is needed primarily to better align existing teacher practices to sound theory informed by empirical research.

However, it cannot solve all the challenges teachers face in the classroom. As cautioned by Hargreaves and Shirley (2009[39]), the abuse of the idea of innovation can lead to the proliferation of short-term solutions. This short-term mind-set, when decoupled from a serious problem-solving approach, can prevent teachers to engage in a deep reflection to question their own practices. These authors also point to a hyperactive culture of change as one of the most dangerous enemies of innovation, understood not as a change *per se* but as a successful and sustained improvement in teaching – see Box 2.

[7] The authors use explicitly these three characteristics as a way to refer to non-traditional, student-oriented teaching strategies, along with the more general need to approach mathematics strategically and creatively.

Box 2. Addictive presentism: innovation as a barrier for innovation

In his classic study, Lortie (1975[84]) identified an endemic short-term perspective inscribed in the teacher profession that can prevent teachers from being innovative. The overwhelming pressure of schoolwork alongside the indeterminacy surrounding teaching would create a constant vulnerability that hinders the engagement of teachers with a more long-term, deep and reflective innovative change.

Revisiting the idea of presentism, Hargreaves and Shirley (2009[39]) discovered that the vast majority of schools that took part in a national programme for fostering innovation focused their attention, efforts, and enthusiasm on short-term initiatives. Further, schools modelled the proposed mid-term strategies in a short-term way, thus embracing a form of change that schools found 'highly attractive'. These authors conclude that efforts to make schools innovative resulted in a hyperactive culture of change based on 'quick wins' that limited the opportunities to transform their practices. Coupled with a results-oriented culture, these improvements risked of developing into a form of addiction, for these strategies were simple to employ, and did not challenge teachers to reflect on existing approaches to teaching and learning.

Although the form of presentism in Lortie's original formulation is an endemic feature of the teaching profession, a structural feeling that is likely to flourish, Hargreaves and Shirley's analysis builds on the idea of an 'addictive presentism' wherein teachers would actively engage in "emotionally effervescent exchanges of instant strategies that enhance effectiveness in what already exists rather than reflecting on and reforming what already exists" (2009, p. 2526[39]). In other words, this form of innovation becomes an end in itself, reducing innovation to customised or personalised versions of other people's agendas, and thus setting the limits for change – understood as personal and contextual reflections that are conducive to idiosyncratic adoptions of innovations.

If Hogben (1978[41]) warned about the ways in which schools can adopt the rhetoric of innovation, this addictive presentism focuses on an entirely new problem, that is, a new culture of innovation that revolves on the importance of innovation per se. In the end, this new culture of innovation can be another source of pressure for early career teachers to innovate within a narrow framework.

In sum, the lack of agreement around a strong corpus of innovative pedagogical knowledge, on the one hand, and the difficulties to develop theories of changing, on the other, complicate the attractive idea that early career teachers can by themselves provide the lever schools need to start innovations. It might be the case that these teachers can become a source of innovation per se, as proposed by Hogben (1978[41]), but only if they engage in changes at a small scale and become a form of change agents for schools, as described in the design features of innovative schools (OECD, 2015[85]).

3.2. Early career teachers and school culture: the limits of individual action

In order to understand innovation in teaching, it is critical to look beyond individuals and focus on the institutional context where people interact and analyse the vital 'sense-making interpretations of educators' (Resnick et al., 2010, p. 291[42]) - that is, how they actively (re)interpret and genuinely apply their knowledge in a particular context. One school can consider that books and homework are not a priority, and instead foster project-based

learning and provide time in the classroom so that students can practice complex activities, whether alone, in co-operation with their peers or with the assistance of the teacher. Another school might be satisfied with more I/R/F (Initiate/Response/Feedback) activities within classrooms, where students are expected to work independently and where home assignments are a salient resource. And yet both schools can perform well, or not, or might differ according to their students' outcomes or their engagement level. What is important here is that, no matter these differences, both configurations can be socially accepted in similar terms.

It was previously discussed how the process of socialisation of teachers is a form of cultural transmission. In this section the analysis revolves on the way schools are configured in two different institutional levels:

1. Externally, in which schools are expected to work as highly organised and standardised institutions. This is according to a strong rationality, legitimacy of central authority, use of a curriculum, set of regulated tasks and rules, and the need to 'process a similar product' (Tomlinson, 1995[32])[8].

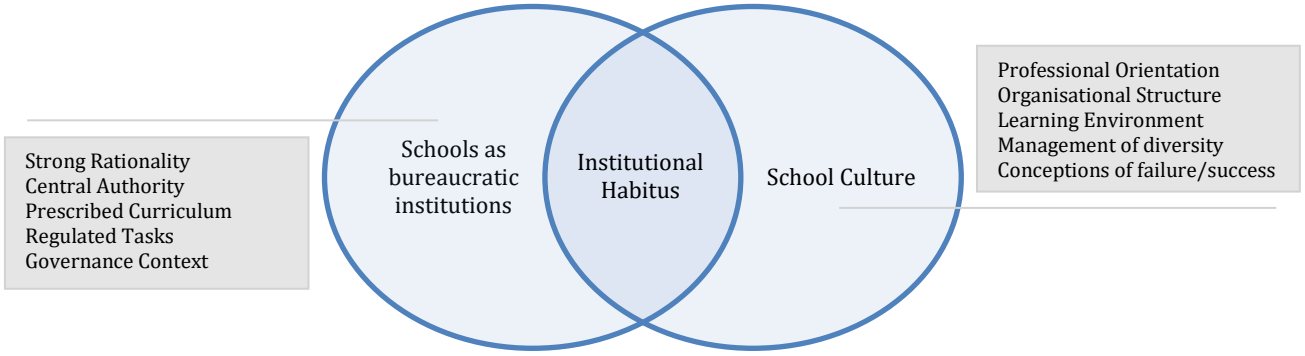
2. Internally, in which there is always a certain degree of discretion in the way professionals work - mainly because the task of teaching and learning is a complex process that cannot be easily standardised, and instead the technical requirements of teaching calls for a degree of professional discretion and autonomy (Skrtic, 1991[86]; Tomlinson, 1995[32]).

It is in this internal level where a community of teachers can develop their own way of approaching the process of teaching and learning. This is possible can be done through: a genuine school culture that frames their identity as professionals; the organisational structure of the schools; the quality of the learning environment; and the educational opportunities offered to support student achievement (Schoen and Teddlie, 2008[87]).

While the idea of school culture puts the focus on teachers' agency and intentionality as a collective – and therefore it is possible to find different typologies of school professional cultures or even alternative schools - the bureaucratic nature of schools shifts the attention to the structural conditionings of schooling and the limitations these impose on teachers. In order to account for how teachers, and particularly early career teachers, deal with innovation in practice, intermediary or mediating concepts that encapsulate both agency and structural variables are needed for examining and connecting the individual with their institutional settings (Cornbleth, 2010[88]), as represented in Figure 8. In particular, the idea of 'institutional habitus' – see Box 3 - is useful because it emphasises the way the social context of schools creates diverse educational status that ultimately frames the school culture in which teachers base their beliefs, expectations, and practices.

[8] Here we are discussing the idea of schooling broadly, as a set of institutional principles that, regardless of the diversity of local arrangements, e.g. grade of autonomy, scale of a central authority, role of the curriculum, and so on, *always* poses limits to the individual actor. At its core, we could mention the need to organise children according to age or attainment, the use of accountability and assessments, the role of transitions to different educational stages, and ultimately to be subjected of a form of governance.

Figure 8. Institutional Habitus at the crossroad of agency and structure



From the perspective of teachers and, particularly, of early career teachers, the conceptualisation of institutional habitus is important to understand how the boundaries of their teaching are framed and limited. Further, it gives prominence to the cultural and expressive nature of the teaching profession, and how professional experience is strongly built within the boundaries of a genuine school culture. It is through the mismatch between the knowledge early career teachers have acquired during their initial teacher education and the knowledge rendered through a particular institutional habitus where the opportunities to innovate originate, rather than being simply a result of the capacities or willingness of these beginning teachers *per se*.

Box 3. Institutional habitus and the conditions of the possible for teachers

The idea of institutional habitus describes the elusive and unconscious way in which teachers in a particular school engage in practices and narratives regarding the diversity and characteristics of their students, and how they frame their perceptions and sense of responsibility towards student learning (Tarabini, Curran and Fontdevila, 2017[89]; Diamond, Randolph and Spillane, 2004[90]). As discussed by Paniagua (2017[91]), institutional habitus does not work simply as a top-down process whereby teachers inherit and reproduce the logics and given practices of the school culture. Habitus is constantly (re)produced by teachers' agency, which is charged with local experiences and personal reflections – and with ways of complying while disagreeing privately - that then travel and nurture school culture.

Further, this concept encapsulates both the way in which the institutional realities and needs of schools overwrite the initial knowledge and expectations of teachers – thus illustrating the weight of the structure – but also the many ways available for teachers to ultimately code and apply their knowledge in the classroom. The professional responsibility of teacher can be more salient and less aligned with the institutional habitus of a given school, and thus can reify or challenge the hegemony of certain educational assumptions (Solbrekke and Sugrue, 2014[48]). If the idea of institutional habitus stresses the way the institutional context mediates in the actions of teachers individually, the concept of school culture instead focuses on the shared elements and collective perspective and practices of teachers.

Routines and standardised practices that originate from experience within a particular school culture, and which are always mediated by the bureaucratic demands of schooling are not 'evils' that unprofessional individuals develop, but institutional realities that

teachers engage in to find useful solutions to the daily challenges their encounter (Resnick et al., 2010[42]). In the literature around early career teachers these ad hoc strategies that are rooted mainly in experience have been defined as 'survival orientations' (Donche, Endedijk and Daal, 2015[92]). However, the idea of 'survival strategy' was originally coined by Woods (1977[93]) to describe more generally the way teachers approach instruction and the maintenance of order in the classroom as a way to protect their own physical and mental well-being.

Teachers are in a constant dialogue[9] with the needs of the institution and their own educational ideals and pedagogical principles, which entails processes of accommodation, reformulation and overt tension (Troman and Raggl, 2008[40]). When perceived problems are numerous and intense, teachers concentrate more on 'survival strategies' as a way to face these outstanding challenges derived from long student-teacher interactions (Woods, 1977[93]). Only *ideally*, then, is teaching likely to be guided by pedagogic principles. Quite often, however, teaching is driven by pragmatic practices - that is, actions derived to fulfil the core needs of the institution - that are not clear and that many teachers are reluctant to admit when accounting for professional knowledge and reflections (Woods, Ibid). At stake for the discussion on early career teachers is that these survival strategies are defined against the challenges of the teaching profession and the institutional habitus prevalent in the school. They do not derive exclusively from a lack of experience, nor is it simply a transitional phase that characterises the first years in the profession – as suggested by Moir (1999; cited in Keogh et al., 2012[98]), who defines a phase of anticipation, survival, disillusionment, rejuvenation and reflection. Rather than questioning the existence of this cycle, the discussion here argues that this cycle can appear every time a teacher goes through a severely demanding situation. Furthermore, that these phases can overlap and that some of these survival and emotional strategies used to cope with challenging environments and stressful moments be used as part of their professional identity.

Supporting the importance of context over experience is the study of Wyss, Kocher and Baer (2017[94]), who found that on average, novice and experienced teachers spent 50% of classroom time in whole class teaching – although with small but significant differences among the schools they analysed. Their study concludes that teaching concepts like personalised learning and other instructional alternatives are rare regardless of teacher experience per se, and highlights that teacher education reforms targeting innovation still have a little impact on the school practices of novice teachers. Although these results come from a video study research involving 185 teachers in four schools, future international surveys which are adopting video-based research to analyse better the quality of teaching, such as the TALIS video study[10], will further illustrate these findings.

One of the most sobering findings from the first TALIS survey was that 70% of teachers reported that they would receive no recognition for increasing either their performance or the quality of their teaching (OECD, 2009[34]). This trend was consistent over time, with 73% of teachers in 2012 stating that teachers who are consistently underperforming will not be dismissed (OECD, 2014[35]). Although the issue of innovation is not explicitly addressed in these responses, it is plausible to argue that these result are not encouraging for teachers to engage in a process of innovation – understood here as a fundamental way

[9] Or identity talk, as part of the emotional and intellectual strategies teachers engage in when trying to resolve their professional dilemmas, and the mismatch between their assigned social identity and their personal identity (Woods and Jeffrey, 2002[140]).

[10] For more information: http://www.oecd.org/education/school/talisvideostudy.htm

to improve the quality of teaching. Simply put, most teachers are not expected to improve their teaching. If it is likely to expect that early career teachers will look for acceptance and support in order to build their identity as successful teachers rather than for conflict and questioning, this finding leaves those who are willing to innovative in a discouraging position.

4. Promoting support for early career teachers: insights from induction programmes

Over the last two decades most OECD countries have developed different programmes to support beginning teachers. These have been accompanied by a growing research evaluating the impact and effectiveness of these initiatives (European Commission, 2010[95]; Hobson et al., 2009[96]; Picard and Ria, 2011[97]; Fransson and Gustafsson, 2008[98]). There has been a multiplicity of arguments to explain the need for this support, which can be summarised around three main causes:

1. To improve initial teacher education programmes and, particularly, the divide between theory and practice – including the goal of creating a more employment-based teacher preparation and de-intellectualise initial teacher education.

2. To provide new teachers with a particular professional development scheme, thus recognising that the first years are a critical stage to guarantee the improvement of effectiveness of teachers.

3. To address high attrition rates among early career teachers and to guarantee the future of teacher supply.

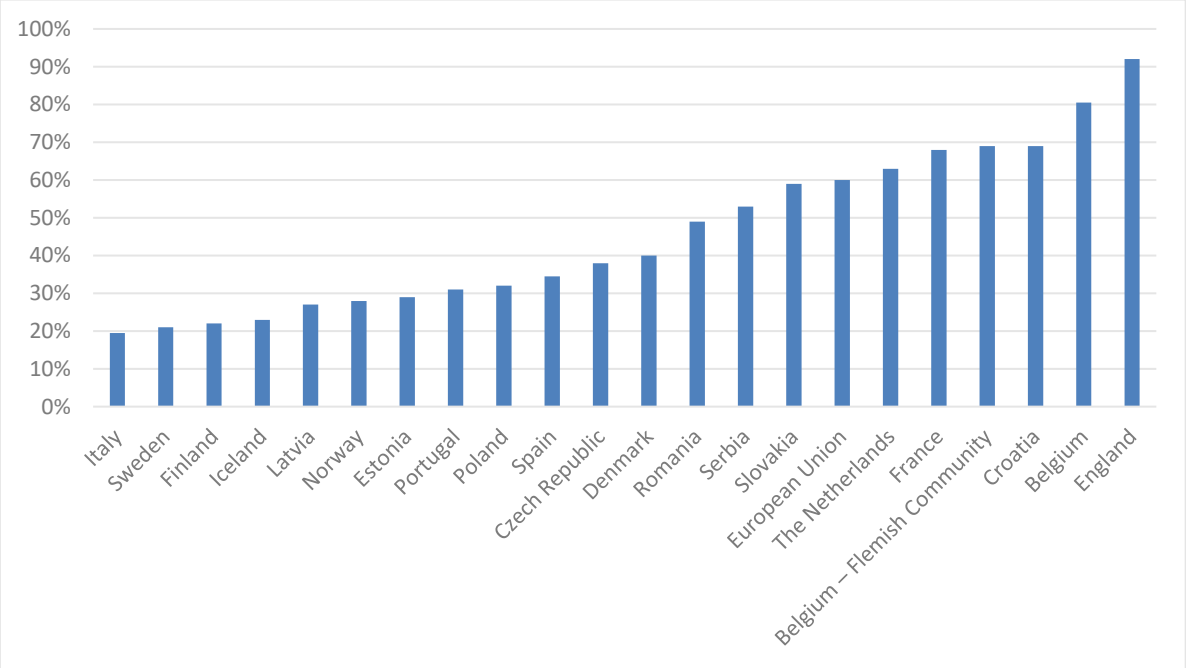
In broad terms, induction refers to processes by which beginning teachers are supported and introduced into the teaching profession after completing a programme of initial teacher education (European Commission, 2010[95]). Teacher Education in Europe (ETUCE, 2008[99]) advocates that an induction phase of at least one year should be both a right and an obligation for early career teachers, and should involve systematic guidance and personnel, social and professional support. This translates into: support from mentors and other colleagues, a reduced teaching timetable without a decrease in remuneration, access to appropriate support resources, attending a mandatory guidance programme, and opportunities to relate theory to practice in a systematic way.

As discussed by Kemmis et al. (2014[100]), induction is a contested practice, for research commonly does not distinguish clearly the nature, purpose and functions of the existing initiatives or programmes. The lack of a clear definition means that terms referring to rather differentiated practices are sometimes used interchangeably or together, i.e. as a result, induction, as either a practice or concept, currently includes a range of diverse initiatives such as mentoring, instructional coaching, teaching residency, and school-university partnerships.

As illustrated in a Eurydice report about the teaching profession (European Commission, 2015[101]), there are significant differences in nearly all aspects of the organisation, planning, forms of support for early career teachers and assessment across countries. Some countries like Czech Republic or Norway do not provide induction programmes, while other countries have induction initiatives that are more or less centralised, and where the role of universities and teacher training institutions varies. Moreover, the role and training of mentors and of principals can differ significantly, as well as the nature of the assessment

of early career teachers (Zuljan and Požarnik, 2014[102]). Of particular interest here is that although much emphasis is placed on how mentoring programmes are designed with reference to the school context, most evaluations place little or no reference of the school context, and instead focus on describing the way in which such policies are meant to work (Ibid). Figure 9 shows the sharp differences in the numbers of early career teachers in lower secondary schools who took part in formal induction programmes in 2013.

Figure 9. Proportion of early career teachers in lower secondary education who took part in formal induction programmes.



Source: European Commission (2015[101]), *The teaching profession in Europe practices, perceptions, and policies. Eurydice Report*, Publications Office of the European Union, Luxembourg.

4.1. Early career teachers support within a continuum of teacher learning

Regardless of the lack of conceptual consistency, it is generally acknowledged that induction is a short-term, structured approach to orientate beginning teachers to the profession (Wong, Britton and Ganser, 2005[103]). Mentoring, the spearhead of induction programmes, on the other hand, is an activity, a process and a relationship that extends over time between an experienced teacher and a beginning teacher to assist their early professional development (Aspfors and Fransson, 2015[104]; Hobson et al., 2009[96]). For Spooner-Lane (2017[105]), mentoring usually extends beyond the induction programmes and involves two major overlapping stages. First, a respectful, trusting relationship is established between the experienced teacher and the beginning teacher. Second, the mentor – through collaborative, reflective conversations – assists the beginning teacher to establish clear, professional development goals and progress towards becoming an effective teacher. The duration of the mentoring relationship typically ranges from one to three years.

Historically, initial teacher education, induction programmes and continuous professional development have been organised and conceptualised independently. However, these lines have been blurred by a growing research calling for the need to link continuous professional

development programmes to induction initiatives, along with the increasing focus of initial teacher education programmes on the importance of pre-service school experience for the preparation of candidate teachers (European Commission, 2014[106]). Similarly, Spooner-Lane (2017[105]) calls for the need to advance in the integration of induction with continuous professional development and proposes a 'comprehensive induction programme' that connects induction with early professional development of teachers (see also Aspfors and Fransson, 2015[109]; Simmie et al., 2017[112]). Some promising developments seem to go in the direction of including novice teachers into dynamic inquiry groups functioning as learning communities at schools (Zuljan and Požarnik, 2014[102]) or engaging pre-service teachers into 'research-informed clinical practice' (Burn and Mutton, 2015[107]). In particular, research-informed clinical practice[11] can have a strong impact as under this model mentors are expected to perform not only as supervisors of early career teachers, but as institutional agents[12] that a) help new teachers develop alternative views and classroom practices and b) engage critically with the research-informed perspectives that beginning teachers can evaluate in their practice.

Although initiatives integrating or aligning initial teacher education, induction, and continuous professional development are still rather an exception to the norm, recent projects such as the TALIS Initial Teacher Preparation[13] have started to develop an international benchmark on effective initial teacher preparation systems – see Box 4. By linking initial teacher education and induction, the concept of initial teacher preparation represents a fundamental step towards a continuum of teachers' professional growth and development. These programmes reflect on the need to establish a system-level approach to teacher education, where different stakeholders and particularly universities and schools develop new relationships in order to help teachers connect theory and practice in ways that can leverage change (Hunt, 2014[108]).

School-university partnerships to assist new teachers are one of the most visible ways to illustrate the idea of induction programmes as an integral support package consisting of different bundles of practices. However, as discussed by Burn and Mutton (2015[107]), despite the 'practicum turn' that has characterised many reforms in initial teacher education systems, neither spending more time in 'field school experiences' nor partnerships by themselves imply a greater concern to integrate research-based knowledge more effectively with professional knowledge – which is the ultimate goal of advocating for this continuum. Instead, a change of mentality is required among all the stakeholders to develop an integrated pathway model – see, for the case of teaching standards and initial teacher education institutions, Révai (2018[44]).

[11] This approach states that teaching is similar to other clinical practice professions, characterised by: a) Centrality of Clients; b) Knowledge Demands; c) Use of Evidence and Judgment in Practice; d) Community and Standards of Practice; and e) Education for Clinical Practice (Alter and Coggshall, 2009[138]). In emphasising 'research-informed' this approach tries to restate the importance of educational research in dialogue with the practical and experiential dimension of teaching.

[12] In general terms, an institutional agent is a person who uses their status, authority, or resources in a hierarchical system to enable another person to gain access to their high status setting or related networks of opportunity (Stanton-Salazar, 2011[139]).

[13] For more information: www.oecd.org/edu/school/talis-initial-teacher-preparation-study.htm

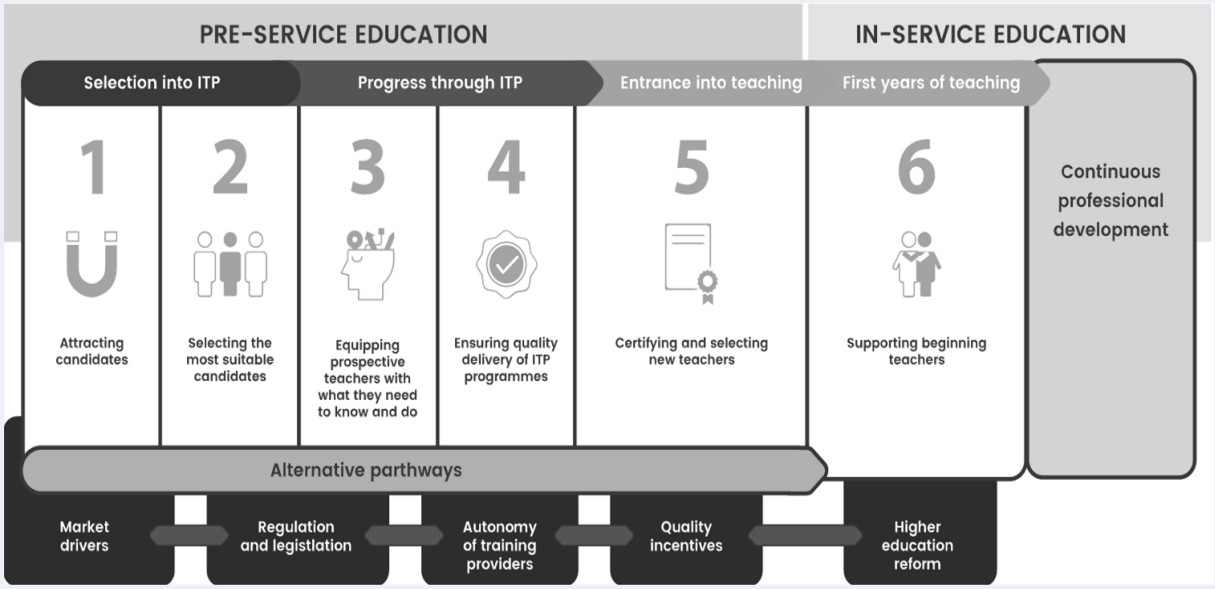
Box 4. The TALIS Initial Teacher Preparation Study

The OECD Initial Teacher Preparation study is based on the premise that a policy-driven system-level approach that conceptualises initial teacher education as one intrinsic part of the continuum of teachers' professional growth and development, will improve the quality of teaching and education. Through its policy diagnosis, quick feedback to policy makers in the grips of initial teacher preparation reform and collegial approach, this study seeks to identify and explore common challenges, strengths and innovations in different systems, with a view to developing an international benchmark on effective practices.

A conceptual framework – known as the OECD Teacher Education Pathway Model (Figure 10) – defines the scope of the study. It maps four consecutive pathways for teachers into the profession, starting from when candidates are selected into initial teacher education programmes, complete the initial teacher education programme, enter teaching and spend their first years in the profession. Overall, the study covers six themes and contextual issues with regard to exploring how countries: 1) attract the most suitable candidates into initial teacher education programmes; 2) select the most suitable candidates into initial teacher education programmes; 3) equip prospective teachers with what they need to know and do; 4) deliver initial teacher education programmes effectively - i.e. quality assurance; 5) certify, select and hire new teachers; and 6) support beginning teachers.

All findings – including a database of "Promising Practices" case studies, findings from different system analysis, "stories" of initial teacher preparation journeys of individuals in different systems and resources – are published on web-based platform entitled "Teacher Ready!", for release at the beginning of 2019 (www.oecdteacherready.org).

Figure 10. OECD Teacher Education Pathway Model



Source: Adapted from Roberts-Hull, K., B. Jensen and S. Cooper (2015[109]), *A New Approach: Reforming Teacher Education*, Learning First, Melbourne.

4.2. Induction as innovation: towards a new understanding of early professional development

Regardless of the growing research analysing induction programmes, the existing literature still refers to the impact of these initiatives as 'potential'. The literature demonstrates the challenges and the benefits, identifies best practices, and emphasises the problems to scale-up and guarantee the quality of successful experiences (Rockoff, 2008[110]; European Commission, 2010[95]; Hobson et al., 2009[96]; Kraft, Blazar and Hogan, 2018[111]; Schuck et al., 2018[11]). In other words, not only is it complex to account for the direct impact of induction initiatives on teaching practices – or professional identities, or self-efficacy – and then for the subsequent students' outcomes, but there are also difficulties when trying to replicate and make more general assumptions building on existing experiences. Still, some reviews of existing literature have highlighted some of the benefits of induction and mentoring programmes in early career teachers. These include increasing satisfaction and commitment, better performing in some aspects of teaching or higher scores in students' academic tests (Ingersoll and Strong, 2011[112]). However, the connection with teacher retention is mixed and inconclusive (Waterman and He, 2011[113]).

The challenges to identify, scale-up and guarantee the quality of successful induction initiatives echo these challenges discussed in the literature on teaching innovation. Therefore, it is necessary to understand induction programmes as a form of innovation, for it entails addressing a persistent school challenge – how better support the professional and learning needs of early career teachers – by rethinking how structures and arrangements can assist them and the role of experienced teachers. As discussed by Paniagua and Istance (2018[10]), a major part of the success of an innovation depends on the context and the expert application of the model – and not in the pure replication of the model. Processes of innovation involve a critical degree of expertise, positive relationships among staff members, culture change, shared vision, co-operation, and change agents (OECD, 2015[85]). Those mentioned are also key in frameworks defining professional learning communities in schools (Kools and Stoll, 2016[114]) and which are said to guarantee the quality of mentoring programmes (Hobson et al., 2009[96]).

Understanding induction as a way to transform early professional development should be key to move beyond the idea that reforms of initial teacher education programmes alone can address the ominous challenge of preparing future teachers for their profession. In this sense, the case study of Shayshon and Popper-Giveon (2016[8]) illustrates the limits of innovative initial teacher education programmes that are not followed up by induction programmes to promote school change. Although the Program for Excellence in Teaching conducted in Israel managed to attract the most successful graduate students and promoted initial professional views to change the system, the authors found that once graduates started to work, their previous ideals around systemic change were progressively abandoned. They conclude that without further supporting mechanisms in schools, early career teachers are likely to rely on the on-going unquestioned truths about the nature of teaching – which is accentuated by their identity as 'best and successful students'. Instead, they suggest that a 'more rebellious attitude may be more effective for beginning teachers' (2016, p. 12[8]), echoing the concluding remark of Cherubini (2009[12]) about the need to raise the conscience of new teachers' sense of individualism.

4.2.1. Teachers as mentors

Given the centrality of mentoring within induction initiatives, an important issue here is the status and training of the mentors, which is an under-researched field in education (Aspfors

and Fransson, 2015[104]). It has been repeatedly claimed in literature the importance of the preparation of mentors, even the need to make it a priority area for policymakers (Zuljan and Požarnik, 2014[102]). Different approaches to mentoring may elicit different kinds of learning and develop different kinds of dispositions and actions in the mentees. It is therefore pertinent to reflect upon how and why mentoring early career teachers differs from the mentoring of teacher candidates (Aspfors and Fransson, 2015[104]), and which are the consequences for the continuum of teaching learning discussed in the previous section.

Schuck et al. (2018[11]) go a step further and argue for a 'learning contract' for all experienced teachers, one which must include the role of established teachers in creating optimal circumstances in which early career teachers can be welcomed in the school and the profession. The ideas underpinning their insights are clear: first, beginning teachers should learn from places where previous teachers have reported positive experiences (see also (Allen, 2009[46]); and second, having expertise is not enough in teaching, teachers also need to be competent at mentoring (Wang and Odell, 2007[115])Following Resnick et al. (2010[42]) about how to hack the routines inscribed in school cultures to create innovative ones, mentors who have carried out innovations or see themselves as change agents are more likely to model early career teachers towards innovation. For example, mentoring may include support, supervision and collaborative self-development – professional growth through collegial mentoring (Kemmis et al., 2014[100]). Making these distinctions explicit would determine how and what outcomes of mentoring programmes will be evaluated to establish programme effectiveness.

However, it is surprising that even in countries such as New Zealand, with a long tradition of induction and well-established mentoring programmes, there is no systematised mentor education (Aspfors and Fransson, 2015[104]). Of course, it might be that mentors in New Zealand are given freedom to innovate and develop their own mentoring style. However, it also shows that without a form of quality assurance and systematisation to identify and replicate successful experiences, policy initiatives formulated at a system level do not always work well at the school level (Schuck et al., 2018[11]). This is precisely one of the main conclusions of Simmie et al. (2017[116]) in which they argue that there are no linear frameworks but instead complex patterned generalities coming from context specific findings. It follows that small scale, in-depth qualitative, studies are key to understand better these contexts – which are also rather exceptional in this field. This kind of research would help to shed light to these 'secret places' in which early career teachers experiences and stories are shared (White and Moss, 2003[5]), and use these novice narratives for instructing and counselling novice teachers (Schatz-Oppenheimer and Dvir, 2014[4]).

4.2.2. The limits of induction programmes

Persistent questions relating to induction programmes remain to be solved. Is it more important to evaluate new teachers or to promote their professional development? Should induction programmes provide early career teachers with safety nets, or challenge their teaching skills? Should they use a humanistic-based approach to be proactive and supportive? Or should they be critical, constructivist and encourage new teachers to question and challenge existing teaching practice? (Fransson and Gustafsson, 2008[98]). These questions are not necessarily contradictory – e.g. being supportive with teachers that tend to implement changes. However, it is important to keep them in mind to avoid raising contradictory demands to early career teachers.

For Simmie et al. (2017[116]), while induction programmes are necessary, they are not enough to address shortfalls in teachers' pedagogical knowledge and other professional

practices. In their review of literature, they warn that most induction programmes do not require early career teachers to act as critically reflexive inquirers with specialised knowledge. Further, they also point to how induction programmes have been conceptualised over time, with earlier studies focused on teacher retention and socialisation of beginning teachers into the profession (2004–2007) and later programmes (2008–2014) for the most part concerned with performance outcomes, where early career teachers are positioned within instrumental and managerial lenses. It is in this later literature where they identify an absence of a view of early professional learning as a practice that gives them opportunities to generate knowledge by working in enquiry communities and networks. Committed communities of practices that foster the collaboration of teachers can have a strong impact on teachers' motivation, self-efficacy and practices - see Box 5. Further, when these networks extend beyond the school they can have the potential to provide early career teachers with critical support and knowledge to counterbalance – or enrich – the culture of a particular school.

These reflections on the limits of induction programmes have been joined by critical research reflecting on the 'dark side' of mentoring (Long, 1997; mentioned in (Hobson et al., 2009[96]) and, particularly, on the way the image of mentoring is presented a glowing picture of the wonders of these initiatives (Long, 1994[117]). In fact, much of the writing and research over time has warned that there is a lack of awareness about the concerns of induction programmes and have focused on supporting the idea of the inherent benefits and potential that goes beyond induction programmes themselves. Their effectiveness is assumed rather than demonstrated (Jacobi, 1991[118]), and the human and material resources it costs are often understated.

Critical literature has sought to illuminate this dark side of induction and has alerted that despite the best of intentions, induction might not be understood by all as the same thing and may even have the potential to do harm according to Long (1994[117]). These harms include: the pressure for reproducing the mentor's work style, e.g. contrived collegiality, the creation of over dependence dynamics, and gender concerns and some research noting that female mentees can experience being overprotected. Nowadays, there is evidence of deep contestation based on different ideological standpoints and radically different conceptions of early career teachers learning and teaching. Whereas there is a growing understanding of the complexity and the importance of context in educational practice, the vast majority of induction programmes are being understood in a much more limited and simplistic way, and implemented to mainly focus on 'what works', thus to produce instrumental learning outcomes (Fletcher and Strong, 2009[119]).

This is what Simmie et al. (2017[116]) refers when they discuss the way the complex nature of the professional learning of teachers and diverse areas of pedagogical knowledge have been progressively narrowed down. Studies rarely focus on the 'whys' and fail to sufficiently impact teachers' practices and learning. They do not consider the local and diverse contexts, social justice and other less measureable aspects of teaching, and initial professional learning is rarely conceived as a long-term collective project or continuum where early career teachers can learn how to become critically reflexive inquirers (Hordern, 2015[120]; White and Moss, 2003[5]).

Box 5. Leadership and enquiry for early career teachers in the Fern Federation, Wales

The Fern Federation consists of two primary schools, with around 400 pupils. One of the schools provides training to schools and colleagues across the Central South Consortium and is also a partnership school of the Cardiff Metropolitan University, i.e. it ensures teaching practicum for new qualified teachers.

The appointed executive head teacher launched a comprehensive strategic development plan with a strong focus on enquiry-based professional learning aimed at improving teachers' competencies in both general and subject pedagogy. Structures set up as part of the development plan include:

- shared leadership with a large share of the teaching staff assuming some kind of leadership role, including early career teachers;
- "teaching and learning workshops" every two weeks focusing on a chosen area of practice to improve;
- co-coaching sessions - leaders of teaching and learning coach teachers to provide pedagogical support;
- and mentoring to ensure practice progress.

Systematic inquiry is applied in a strongly research-based way. Teachers work on areas of pedagogy that they identify as worth improving (for example, questioning, assessment for learning, children's engagement, collective learning). They search literature and share theoretical findings in the workshops, then collectively plan how to apply relevant theories in practice. Having experimented with new or modified practices in their classrooms, teachers then reflect on the process through joint coaching sessions. In parallel, the staff is engaged in action research on pedagogical developments that underpin their own development needs. Dedicated time is ensured for teachers to conduct (individual or collaborative) research projects, and reflect on their impact on their own learning.

The development plan included investments in resources to facilitate systematic enquiry, reflection and peer learning (e.g. video cameras, a classroom with a one way mirror). In fact, all teachers are required to record their lesson at least once every term and share it with the senior leadership team for the purposes of monitoring and evaluating progress. In reality, however, most teachers use the tool on a regular basis for self-improvement both individually and in teams, focusing on specific areas of development.

Source: Adapted from Révai, (2018[121]), "Teachers' knowledge dynamics and innovation in education – Part II", *Neveléstudomány* 1, pp. 6-17. Box developed based on interviews conducted 13-16 March 2017 in the framework of the Welsh review of the OECD's Initial Teacher Preparation project, www.oecd.org/edu/school/talis-initial-teacher-preparation-study.htm

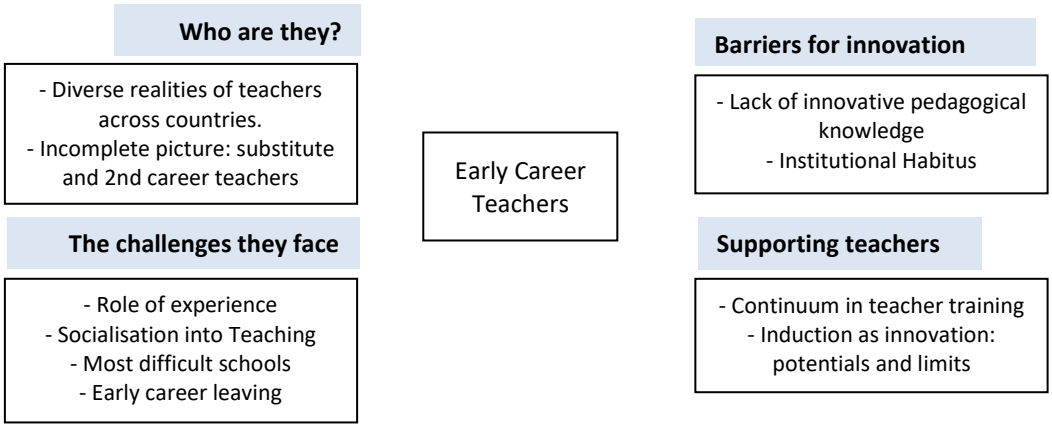
5. Early career teachers as *de facto* teacher residency: concluding remarks and the way forward

OECD's landmark study *Teachers Matter* (OECD, 2005[1]) described the main concerns that were common in OECD countries regarding teacher policies, and advanced a number of key areas for action. Regarding early career teachers, the report highlighted the need to better support new teachers, to align initial teacher education, induction programmes, and continuous professional development, and to address the significant research gaps concerning the context of teachers in different countries. Further, it echoed the insights of Hogben (1978[41]) regarding the promise of new teachers equipped with sounding new skills to transform schools – at least potentially. Almost fifteen years later, these challenges remain largely unaddressed, and the potential of new teachers to renew schools continues to be an unfulfilled promise.

Our discussion has presented four main arguments that aim to improve our analysis of early career teachers and innovation. We argue that these four topics, as illustrated in Figure 11, can help both policymakers and future research to open new ways of designing teacher policies and further analysis, respectively.

1. There is a need for more research to know *who* early career teachers are and the diverse ways in which they enter the teaching profession according to each particular education ecosystem.
2. The way early career teachers embody some key characteristics that defines the teaching profession. Thus the need to think of these teachers *along with* experienced teachers.
3. The persisting barriers limiting teaching innovation in schools and in particular the lack of support at the system level towards innovation.
4. The still under-developed alignment among teacher learning stages that characterises teacher socialisation.

Figure 11. Overview of the main issues regarding early career teachers and innovation

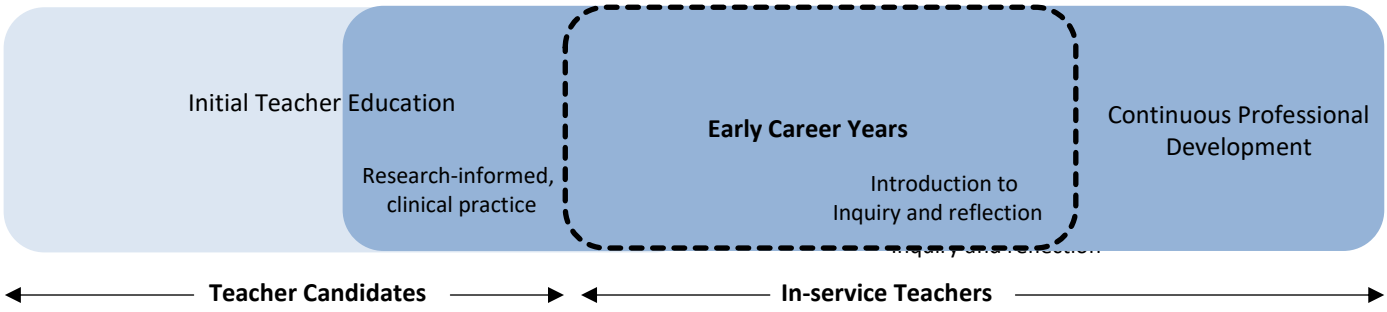


To an extent, the weight of deficits views and the 'attrition panic' that surrounds the conceptualisation of early career teachers hides these four arguments, and instead the focus is on an apparent lack of experience that precludes the analysis of persisting challenges of the teaching profession. As discussed in previous sections, it is context rather than

experience which is more decisive both for understanding the socialisation of teachers and the opportunities available for innovating pedagogies. This is not to say, of course, that experience does not play a role, because it does. It is the experience in *particular* contexts and with *specific* initiatives that ultimately make teaching experience valuable for becoming a professional. Similarly, it is the limitations and opportunities imposed by a particular institutional habitus and the collective experiences of a community of practice – including the networks that extend beyond particular settings – that will determine the degree of innovation capacity of teachers.

A fundamental step to transform the way teachers enter the profession would imply to recognise these first five years of the teaching career as a fundamental part of the teaching learning process - similar to the status of physicians during their residence years. To consider early retirement simply as teachers who give up shows an incomplete picture: early career teachers need to be seen as teachers in the late stages of their learning process that decide not to *fully start* their careers. Added that the first years of teaching seem to be key to understanding the improvement of the effectiveness of teachers in their future careers – see Figure 5 -, then this 'residence' period should be targeted as priority policy area - Figure 12.

Figure 12. Early Career Years as a form of Teacher Residency



Note: The dark blue represents the experience with the classroom environment.

As showed by Pedaste et al. (2014[122]) for the case of Estonia[14], it is of vital importance that universities and innovative schools work in partnership in order to guarantee 'sheltered' environments for early career teachers during this new form of teacher residency. Structured teaching experiences in schools are a platform for candidate teachers to improve their inquiry and reflective skills, thus moving beyond the idea of teachers as technicians and helping them develop their own conceptions of equity for their students (Lane, Lacefield-Parachini and Isken, 2003[123]).

These reflections echoes what Kardos et al., (2001[124]) describe as 'Integrated Professional Cultures', where early career teachers both have the guidance and support of experienced teachers to contribute to teacher renewal and professional growth. Provided by organised structures and arrangements to support them, in these schools' new teachers "spoke of being united with their colleagues in the pursuit of a common mission… which had not emerged accidentally but had been deliberately built" (Ibid, p. 283[129]). In this context,

[14] The OECD Initial Teacher Preparation project features best practices and recent trends in ten countries, some of which strongly resonates with our call for the creation of a teacher residency (www.oecdteacherready.org).

nurturing and supporting the idealistic views and enthusiasm of early career teachers during these residency years would represent a vital value for the development of a personal vision and agenda, and the measures leading to is fulfilment (Ulvik and Langørgen, 2012[71]; Correa, Martínez-Arbelaiz and Aberasturi-Apraiz, 2015[31]).

The enthusiasm, idealism and recent training of early career teachers makes them an invaluable source for innovation, but *only if* successfully aligned with proper school environments and a rigorous system of scaffolding to support their in-service process of learning. This approach also entails an alignment between professional growth and the acquisition of innovative skills, that is, using innovative experiences to build the professionalism of early career teachers and vice versa, deepening their professional skills to better support their capacity to innovate – see Figure 1.

Without that alignment, scattered efforts – e.g. innovative initial teacher education programmes, strong mentoring initiatives – are likely to have limited success in addressing the institutional challenges that teachers must face when trying to reflectively find new answers to the demanding classrooms in which they teach. The main question is then if the different stages of teacher learning and schools in general provide opportunities to early career teachers to participate in such processes, or if these teachers have the freedom to experiment and test their own initiatives.

In order to start building this teacher residency in schools, teacher policies could address three key issues:

1. Teaching is a profession that has one of the most inequitable professional expectations towards beginning teachers. Newcomers are routinely asked to perform in the same way as their more experienced colleagues while their professionals' needs are not as fully recognised as those of new doctors or lawyers (Cherubini, 2009[12]; Halford, 1998[125]). Simple measures such as the reduction of time spent with students – and thus having more time to reflect and prepare lessons - can have an important impact on early career teachers.
2. It is common that teachers will spend their early years of teaching in a series of temporary positions, in a variety of schools – which are likely to be the most challenging - and therefore they do not have the possibility to know the particular school culture or to establish supportive professional relationships. Improvement measures to stabilise early career teachers – as it is the case of teacher replacement pools where substitute teachers are assigned permanently to schools while they don't work as substitutes (OECD, 2005[1]) – would potentially ease the transition from initial teacher education to schools.
3. Initial teacher education programmes should provide both a strong pedagogical knowledge base and permit teacher candidates to interpret, analyse and apply this knowledge base according to particular contexts. Further, the emotional work and educational ideals that lie at the heart of teaching should be explicitly addressed in teacher training, that is, teacher educators should invest time on 'the emotional practice of teaching' (Hargreaves, 1998[126]). At stake here is the implementation and expansion of clinical models in initial teacher education and the improvement of research and training of mentors – e.g. implementing the idea of stablishing a 'learning contract' in all schools or including the 'teacher residency' model in initial teacher education (Guha, Hyler and Darling-Hammond, 2016[127]).

References

Agyei, D. and J. Voogt (2014), "Examining factors affecting beginning teachers' transfer of learning of ICT-enhanced learning activities in their teaching practice", *Australasian Journal of Educational Technology*, Vol. 30/1, pp. 92-105, http://dx.doi.org/10.14742/ajet.499. [70]

Allen, J. (2009), "Valuing practice over theory: How beginning teachers re-orient their practice in the transition from the university to the workplace", *Teaching and Teacher Education*, Vol. 25/5, pp. 647-654, http://dx.doi.org/10.1016/j.tate.2008.11.011. [46]

Alter, J. and J. Coggshall (2009), *Teaching as a Clinical Practice Profession: Implications for Teacher Preparation and State Policy*, NYCC & TQ Center, New York, http://www.gtlcenter.org/sites/default/files/docs/clinicalPractice.pdf. [136]

Aspfors, J. and G. Fransson (2015), "Research on mentor education for mentors of newly qualified teachers: A qualitative meta-synthesis", *Teaching and Teacher Education*, Vol. 48, pp. 75-86, http://dx.doi.org/10.1016/J.TATE.2015.02.004. [104]

Atkinson, P. and S. Delamont (1986), "Socialisation into Teaching: the research which lost its way", *British Journal of Sociology of Education*, Vol. 6/3, pp. 307-322, http://dx.doi.org/10.1080/0142569850060304. [13]

Ávalos, B. and J. Valenzuela (2016), "Education for all and attrition/retention of new teachers: A trajectory study in Chile", *International Journal of Educational Development*, Vol. 49, pp. 279-290, http://dx.doi.org/10.1016/J.IJEDUDEV.2016.03.012. [58]

Borman, G. and N. Dowling (2017), "Teacher Attrition and Retention: A Meta-Analytic and Narrative Review of the Research", *Review of Educational Research*, Vol. 78/3, pp. 367-409, http://dx.doi.org/10.3102/0034654308321455. [55]

Boyd, D. et al. (2011), "The effectiveness and retention of teachers with prior career experience", *Economics of Education Review*, Vol. 30/6, pp. 1229-1241, http://dx.doi.org/10.1016/J.ECONEDUREV.2011.08.004. [29]

Boyd, D. et al. (2008), "The Narrowing Gap in New York City Teacher Qualifications and its Implications for Student Achievement in High-Poverty Schools", *NBER Working Papers*, No. 14021, National Bureau of Economic Research, Cambridge, http://www.nber.org/papers/w14021. [67]

British Columbia Teachers' Federation (2016), *The lived experience of Teachers Teaching on Call in British Columbia's public schools*, https://bctf.ca/uploadedFiles/Public/TTOC/TTOC-WC-survey-FinalReport.pdf (accessed on 13 June 2018). [18]

Burn, K. and T. Mutton (2015), "A review of 'research-informed clinical practice' in Initial Teacher Education", *Oxford Review of Education*, Vol. 41/2, pp. 217-233, http://dx.doi.org/10.1080/03054985.2015.1020104. [107]

Cardon, P. (2002), "A Qualitative Study of the Perceptions of Substitute Teaching Quality", *SubJournal*, Vol. 3/2, pp. 29-43. [20]

Carlgren, I. (1999), "Professionalism and teachers as designers", *Journal of Curriculum Studies*, Vol. 31/1, pp. 43-56, http://dx.doi.org/10.1080/002202799183287. [129]

Carver-Thomas, D. and L. Darling-Hammond (2017), *Teacher Turnover: Why It Matters and What We Can Do About It*, Learning Policy Institute, Palo Alto, CA, https://learningpolicyinstitute.org/product/teacher-turnover. [65]

Caspersen, J. and F. Raaen (2014), "Novice teachers and how they cope", *Teachers and Teaching*, Vol. 20/2, pp. 189-211, http://dx.doi.org/10.1080/13540602.2013.848570. [36]

Cherubini, L. (2009), "Reconciling the tensions of new teachers' socialisation into school culture: A review of the research", *Issues in Educational Research*, Vol. 19/2, pp. 83-99. [12]

Cochran-Smith, M. et al. (2012), "A Longitudinal Study of Teaching Practice and Early Career Decisions: A Cautionary Tale", *American Educational Research Journal*, Vol. 49/5, pp. 844-880, http://dx.doi.org/10.3102/0002831211431006. [62]

Cornbleth, C. (2010), "Institutional Habitus as the de facto Diversity Curriculum of Teacher Education", *Anthropology & Education Quarterly*, Vol. 41/3, pp. 280-297, http://dx.doi.org/10.1111/j.1548-1492.2010.01088.x. [88]

Correa, J., A. Martínez-Arbelaiz and E. Aberasturi-Apraiz (2015), "Post-modern reality shock: Beginning teachers as sojourners in communities of practice", *Teaching and Teacher Education*, Vol. 48, pp. 66-74, http://dx.doi.org/10.1016/J.TATE.2015.02.007. [31]

Desforges, C. and A. Abouchaar (2003), *The Impact of Parental Involvement, Parental Support and Family Education on Pupil Achievements and Adjustment: A Literature Review*, Department for Education and Skills, Research Report 433, https://www.nationalnumeracy.org.uk/sites/default/files/the_impact_of_parental_involvement.pdf (accessed on 12 June 2016). [83]

Diamond, J., A. Randolph and J. Spillane (2004), "Teachers' Expectations and Sense of Responsibility for Student Learning: The Importance of Race, Class, and Organizational Habitus", *Anthropology & Education Quarterly*, Vol. 35/1, pp. 75-98, http://dx.doi.org/10.1525/aeq.2004.35.1.75. [90]

Donche, V., M. Endedijk and T. Daal (2015), "Differential effects of a long teacher training internship on students' learning-to-teach patterns", *European Journal of Teacher Education*, Vol. 38/4, pp. 484-495, http://dx.doi.org/10.1080/02619768.2015.1057562. [92]

Duggleby, P. and S. Badali (2007), "Expectations and experiences of substitute teachers", *Alberta Journal of Educational Research*, Vol. 53/1, pp. 22-33. [21]

Echazarra, A. et al. (2016), "How teachers teach and students learn: Successful strategies for school", *OECD Education Working Papers*, No. 130, OECD Publishing, Paris, http://dx.doi.org/10.1787/5jm29kpt0xxx-en. [80]

Education Workforce Council (2017), *National Education Workforce Survey Research Report April 2017*, https://www.ewc.wales/site/index.php/en/policy-hub/national-education-workforce-survey.html. [17]

ETUCE (2008), *Teacher Education in Europe. An ETUCE Policy Paper*, https://www.csee-etuce.org/images/attachments/ETUCE_PolicyPaper_en.pdf. [99]

European Commission (2018), *Study on Supporting School Innovation Across Europe*, Publications Office of the European Union, Luxembourg, http://dx.doi.org/10.2766/466312. [134]

European Commission (2015), *The Teaching Profession in Europe: Practices, Perceptions, and Policies. Eurydice Report.*, European Commission, https://eacea.ec.europa.eu/national-policies/eurydice/content/teaching-profession-europe-practices-perceptions-and-policies_en (accessed on 26 September 2018). [101]

European Commission (2014), *Initial teacher education in Europe: an overview of policy issues*, http://ec.europa.eu/dgs/education_culture/repository/education/policy/strategic-framework/expert-groups/documents/initial-teacher-education_en.pdf. [106]

European Commission (2013), *Study on Policy Measures to improve the Attractiveness of the Teaching Profession in Europe*, Publications Office of the European Union, Luxembourg. [56]

European Commission (2010), *Developing coherent and system-wide induction programmes for beginning teachers: a handbook for policymakers*, http://ec.europa.eu/assets/eac/education/policy/school/doc/handbook0410_en.pdf. [95]

Feistritzer, C. (2011), *Profiles of Teachers in the U.S. 2011*, National Center for Education Information, Washington, DC. [24]

Feng, L. and T. Sass (2011), *Teacher Quality and Teacher Mobility*, The Urban Institute, Washington, DC, https://www.urban.org/research/publication/teacher-quality-and-teacher-mobility/view/full_report. [63]

Fletcher, S. and M. Strong (2009), "Full-Release and Site-Based Mentoring of New Elementary Grade Teachers: An Analysis of Changes in Student Achievement", *The New Educator*, Vol. 5/4, pp. 329-341, http://dx.doi.org/10.1080/1547688X.2009.10399583. [119]

Fransson, G. and C. Gustafsson (2008), *Newly Qualified Teachers in Northern Europe. Comparative Perspectives on Promoting Professional Development*, University of Gävle, Gävle. [98]

Fullan, M. (2007), *The New Meaning of Educational Change*, Teachers College Press, New York. [82]

Gallant, A. and P. Riley (2014), "Early career teacher attrition: new thoughts on an intractable problem", *Teacher Development*, Vol. 18/4, pp. 562-580, http://dx.doi.org/10.1080/13664530.2014.945129. [53]

Gannon, S. (2012), "The Crucible of Classroom Practice: Alchemy and Early Professional Learning in Secondary English Teaching", *Changing English*, Vol. 19/4, pp. 423-437, http://dx.doi.org/10.1080/1358684X.2012.736744. [72]

Guha, R., M. Hyler and L. Darling-Hammond (2016), *The Teacher Residency: An Innovative Model for Preparing Teachers External Reviewers*, Learning Policy Institute, https://learningpolicyinstitute.org/product/teacher-residency. (accessed on 20 October 2018). [127]

Halford, J. (1998), "Easing the Way for New Teachers", *Educational Leadership*, Vol. 55/5, pp. 33-36, http://www.ascd.org/publications/educational-leadership/feb98/vol55/num05/Easing-the-Way-for-New-Teachers.aspx. [125]

Hargreaves, A. (1998), "The emotional practice of teaching", *Teaching and Teacher Education*, Vol. 14/8, pp. 835-854, http://dx.doi.org/10.1016/S0742-051X(98)00025-0. [126]

Hargreaves, A. and D. Shirley (2009), "The Persistence of Presentism", *Teachers College Record*, Vol. 111/11, pp. 2505-2534. [39]

Hobson, A. et al. (2009), "Mentoring beginning teachers: What we know and what we don't", *Teaching and Teacher Education*, Vol. 25/1, pp. 207-216, http://dx.doi.org/10.1016/J.TATE.2008.09.001. [96]

Hogben, D. (1978), "The Beginning Teacher as an Innovation", *South Pacific Journal of Teacher Education*, Vol. 6/1, pp. 26-34, http://dx.doi.org/10.1080/0311213780060104. [41]

Høigaard, R., R. Giske and K. Sundsli (2012), "Newly qualified teachers' work engagement and teacher efficacy influences on job satisfaction, burnout, and the intention to quit", *European Journal of Teacher Education*, Vol. 35/3, pp. 347-357, http://dx.doi.org/10.1080/02619768.2011.633993. [37]

Hordern, J. (2015), "Teaching, teacher formation, and specialised professional practice", *European Journal of Teacher Education*, Vol. 38/4, pp. 431-444, http://dx.doi.org/10.1080/02619768.2015.1056910. [120]

Hunt, C. (2014), "A Review of School-University Partnerships for Successful New Teacher Induction", *School-University Partnerships*, Vol. 7/1, pp. 35-48. [108]

Hutchings, M. et al. (2006), *The Recruitment, Deployment and Management of Supply Teachers in England*, http://dera.ioe.ac.uk/6393/1/RR738.pdf (accessed on 19 June 2018). [16]

Ingersoll, R. and M. Strong (2011), "The Impact of Induction and Mentoring Programs for Beginning Teachers: A Critical Review of the Research", *Review of Educational Research*, Vol. 81/2, pp. 201-233, http://dx.doi.org/10.3102/0034654311403323. [112]

Jacobi, M. (1991), "Mentoring and Undergraduate Academic Success: A Literature Review", *Review of Educational Research*, Vol. 61/4, pp. 505-532, http://dx.doi.org/10.3102/00346543061004505. [118]

Jensen, B. et al. (2012), *The Experience of New Teachers: Results from TALIS 2008*, TALIS, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264120952-en. [33]

Kardos, S. et al. (2001), "Counting on Colleagues: New Teachers Encounter the Professional Cultures of Their Schools", *Educational Administration Quarterly*, Vol. 37/2, pp. 250-290, http://dx.doi.org/10.1177/00131610121969316. [124]

Kelchtermans, G. (2017), "'Should I stay or should I go?': unpacking teacher attrition/retention as an educational issue", *Teachers and Teaching*, Vol. 23/8, pp. 961-977, http://dx.doi.org/10.1080/13540602.2017.1379793. [60]

Keller, M. et al. (2014), "Teachers' emotional experiences and exhaustion as predictors of emotional labor in the classroom: an experience sampling study", *Frontiers in Psychology*, Vol. 5, p. 1442, https://www.frontiersin.org/article/10.3389/fpsyg.2014.01442. [30]

Kemmis, S. et al. (2014), "Mentoring of new teachers as a contested practice: Supervision, support and collaborative self-development", *Teaching and Teacher Education*, Vol. 43, pp. 154-164, http://dx.doi.org/10.1016/J.TATE.2014.07.001. [100]

Kenna, A. (forthcoming), *Teacher Absenteeism and Substitute Teachers: A Literature Review*, OECD Publishing. [15]

Keogh, J. et al. (2012), "Self-determination: Using Agency, Efficacy and Resilience (AER) to Counter Novice Teachers' Experiences of Intensification", *Australian Journal of Teacher Education*, Vol. 37/8, pp. 46-65, http://ro.ecu.edu.au/ajte/vol37/iss8/4. [135]

Kini, T. and A. Podolsky (2016), *Does Teaching Experience Increase Teacher Effectiveness? A Review of the Research*, Learning Policy Institute, Palo Alto, CA, https://learningpolicyinstitute.org/our-work/publications-resources/does-teaching-experience-increase-teacher-effectiveness-review-research. [68]

Kools, M. and L. Stoll (2016), "What Makes a School a Learning Organisation?", *OECD Education Working Papers*, No. 137, OECD Publishing, Paris, http://dx.doi.org/10.1787/5jlwm62b3bvh-en. [114]

Kraft, M., D. Blazar and D. Hogan (2018), "The Effect of Teacher Coaching on Instruction and Achievement: A Meta-Analysis of the Causal Evidence", *Review of Educational Research*, Vol. 88/4, pp. 547-588, http://dx.doi.org/10.3102/0034654318759268. [111]

Krise, K. (2016), "Preparing the "Standardized Teacher": The Effects of Accountability on Teacher Education", *JCT: Journal of Curriculum Theorizing*, Vol. 31/2, pp. 24-32. [74]

Lane, S., N. Lacefield-Parachini and J. Isken (2003), "Developing Novice Teachers as Change Agents: Student Teacher Placements "Against the Grain"", *Teacher Education Quarterly*, Vol. 30/2, pp. 55-68, http://www.jstor.org/stable/23478469. [123]

Lindqvist, P., U. Nordänger and R. Carlsson (2014), "Teacher attrition the first five years – A multifaceted image", *Teaching and Teacher Education*, Vol. 40, pp. 94-103, http://dx.doi.org/10.1016/J.TATE.2014.02.005. [61]

Little, J. and L. Bartlett (2010), "The Teacher Workforce and Problems of Educational Equity", *Review of Research in Education*, Vol. 34/1, pp. 285-328, http://dx.doi.org/10.3102/0091732X09356099. [49]

Long, J. (1994), *The Dark Side of Mentoring*, Australian Association for Research in Education, Newcastle, https://www.aare.edu.au/publications-database.php/1152/the-dark-side-of-mentoring. [117]

Lortie, D. (1975), *Schoolteacher: A sociological study*, University of Chicago Press, Chicago, IL. [84]

Makel, M. and J. Plucker (2014), "Creativity is more than novelty: Reconsidering replication as a creativity act.", *Psychology of Aesthetics, Creativity, and the Arts*, Vol. 8/1, pp. 27-29, http://dx.doi.org/10.1037/a0035811. [75]

Martinez, K. (1994), "Teacher Induction Revisited", *Australian Journal of Education*, Vol. 38/2, pp. 174-188, https://doi.org/10.1177/000494419403800207. [7]

McCromack, A. and K. Thomas (2003), "Is Survival Enough? Induction experiences of beginning teachers within a New South Wales context", *Asia-Pacific Journal of Teacher Education*, Vol. 31/2, pp. 125-138, http://dx.doi.org/10.1080/13598660301610. [69]

Mitchell, D. (2015), *Education that fits: Review of international trends in the education of students with special educational needs. Second edition*, University of Canterbury, https://www.education.vic.gov.au/Documents/about/department/psdlitreview_Educationthatfits.pdf (accessed on 26 September 2018). [133]

Mockle, N. (2014), "Simple solutions to complex problems: moral panic and the fluid shift from 'equity' to 'quality' in education", *Review of Education*, Vol. 2/2, pp. 115-143, http://dx.doi.org/10.1002/rev3.3028. [73]

Newman, E. (2010), "'I'm being measured as an NQT, that isn't who I am': an exploration of the experiences of career changer primary teachers in their first year of teaching", *Teachers and Teaching*, Vol. 16/4, pp. 461-475, http://dx.doi.org/10.1080/13540601003754830. [25]

Nicholas, M. and M. Wells (2017), "Insights into casual relief teaching: casual relief teachers' perceptions of their knowledge and skills", *Asia-Pacific Journal of Teacher Education*, Vol. 45/3, pp. 229-249, http://dx.doi.org/10.1080/1359866X.2016.1169506. [22]

OECD (2018), *Education Policy Outlook 2018: Putting Student Learning at the Centre*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264301528-en. [76]

OECD (2018), *Effective Teacher Policies: Insights from PISA*, PISA, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264301603-en. [50]

Guerriero, S. (ed.) (2017), *Pedagogical Knowledge and the Changing Nature of the Teaching Profession*, Educational Research and Innovation, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264270695-en. [9]

OECD (2016), *Supporting Teacher Professionalism: Insights from TALIS 2013*, TALIS, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264248601-en. [139]

OECD (2015), *Schooling Redesigned: Towards Innovative Learning Systems*, Educational Research and Innovation, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264245914-en. [85]

OECD (2014), *Education at a Glance 2014: OECD Indicators*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eag-2014-en. [23]

OECD (2014), *Measuring Innovation in Education: A New Perspective*, Educational Research and Innovation, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264215696-en. [78]

OECD (2014), *TALIS 2013 Results: An International Perspective on Teaching and Learning*, TALIS, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264196261-en. [35]

OECD (2013), *Synergies for Better Learning: An International Perspective on Evaluation and Assessment*, OECD Reviews of Evaluation and Assessment in Education, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264190658-en. [77]

OECD (2013), *Teaching and Learning International Survey (TALIS): 2013 complete database*, OECD Publishing, Paris, http://stats.oecd.org/index.aspx?datasetcode=talis_2013%20. [14]

OECD (2011), *Skills for Innovation and Research*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264097490-en. [140]

OECD (2010), *Educating Teachers for Diversity: Meeting the Challenge*, Educational Research and Innovation, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264079731-en. [51]

OECD (2009), *Creating Effective Teaching and Learning Environments. First results from TALIS*, OECD Publishing, Paris, http://www.oecd.org/education/school/43023606.pdf (accessed on 26 September 2018). [34]

OECD (2005), *Teachers Matter. Attracting, developing and retaining effective teachers*, OECD Publishing, Paris, http://dx.doi.org/10.1787/19901496. [1]

Paniagua, A. (2017), "The Intersection of Cultural Diversity and Special Education in Catalonia: The Subtle Production of Exclusion through Classroom Routines", *Anthropology & Education Quarterly*, Vol. 48/2, pp. 141-158, http://dx.doi.org/10.1111/aeq.12190. [91]

Paniagua, A. and D. Istance (2018), *Teachers as Designers of Learning Environments: The Importance of Innovative Pedagogies*, Educational Research and Innovation, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264085374-en. [10]

Pedaste, M. et al. (2014), "A Model of Innovation Schools: Estonian Case-study", *Procedia - Social and Behavioral Sciences*, Vol. 112, pp. 418-427, http://dx.doi.org/10.1016/J.SBSPRO.2014.01.1184. [122]

Pettersson, D. and C. Molstad (2016), "PISA Teachers: The hope and the happening of educational development", *Educação & Sociedade*, Vol. 37/136, pp. 629-645, http://dx.doi.org/10.1590/es0101-73302016165509. [2]

Picard, P. and L. Ria (2011), *Beginning teachers: a challenge for educational systems*, CIDREE, Lyon. [97]

Resnick, L. et al. (2010), "Implementing innovation: from visionary models to everyday practice", in Dumont, H., D. Istance and F. Benavides (eds.), *The Nature of Learning: Using Research to Inspire Practice*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264086487-14-en. [42]

Révai, N. (2018), "Teachers' knowledge dynamics and innovation in education-Part II", *Neveléstudomány* 1, pp. 6-17, http://dx.doi.org/10.21549/NTNY.21.2018.1.1. [121]

Révai, N. (2018), "What difference do standards make to educating teachers?: A review with case studies on Australia, Estonia and Singapore", *OECD Education Working Papers*, No. 174, OECD Publishing, Paris, http://dx.doi.org/10.1787/f1cb24d5-en. [44]

Révai, N. and S. Guerriero (2017), "Knowledge dynamics in the teaching profession", in Guerriero, S. (ed.), *Pedagogical Knowledge and the Changing Nature of the Teaching Profession*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264270695-4-en. [43]

Rice, J. (2010), *The Impact of Teacher Experience. Examining the Evidence and Policy Implications*, National Center for Analysis of Longitudinal Data in Education Research, Washington, DC, https://www.urban.org/sites/default/files/publication/33321/1001455-The-Impact-of-Teacher-Experience.PDF. [66]

Roberts-Hull, K., B. Jensen and S. Cooper (2015), *A New Approach: Reforming Teacher Education*, Learning First, Melbourne, http://www.learningfirst.org.au. (accessed on 26 September 2018). [109]

Rockoff, J. (2008), *Does mentoring reduce turnover and improve skills of new employees? Evidence from teachers in New York City*, National Bureau of Economic Research, Cambridge, MA, http://www.nber.org/papers/w13868. [110]

Rots, I., G. Kelchtermans and A. Aelterman (2012), "Learning (not) to become a teacher: A qualitative analysis of the job entrance issue", *Teaching and Teacher Education*, Vol. 28, pp. 1-10, http://dx.doi.org/10.1016/j.tate.2011.08.008. [6]

Ryan, S. et al. (2017), "Leaving the teaching profession: The role of teacher stress and educational accountability policies on turnover intent", *Teaching and Teacher Education*, Vol. 66, pp. 1-11, http://dx.doi.org/10.1016/J.TATE.2017.03.016. [38]

Schatz-Oppenheimer, O. and N. Dvir (2014), "From ugly duckling to swan: Stories of novice teachers", *Teaching and Teacher Education*, Vol. 37, pp. 140-149, http://dx.doi.org/10.1016/J.TATE.2013.10.011. [4]

Schleicher, A. (2018), *Valuing our Teachers and Raising their Status: How Communities Can Help*, International Summit on the Teaching Profession, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264292697-en. [52]

Schleicher, A. (2018), *World Class: How to Build a 21st-Century School System*, Strong Performers and Successful Reformers in Education, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264300002-en. [45]

Schleicher, A. (2011), *Building a High-Quality Teaching Profession: Lessons from around the World*, International Summit on the Teaching Profession, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264113046-en. [3]

Schmidt, W., P. Zoido and L. Cogan (2014), "Schooling Matters: Opportunity to Learn in PISA 2012", *OECD Education Working Papers*, No. 95, OECD Publishing, Paris, http://dx.doi.org/10.1787/5k3v0hldmchl-en. [81]

Schoen, L. and C. Teddlie (2008), "A new model of school culture: a response to a call for conceptual clarity", *School Effectiveness and School Improvement*, Vol. 19/2, pp. 129-153, http://dx.doi.org/10.1080/09243450802095278. [87]

Schuck, S. et al. (2018), "The experiences of early career teachers: new initiatives and old problems", *Professional Development in Education*, Vol. 44/2, pp. 209-221, http://dx.doi.org/10.1080/19415257.2016.1274268. [11]

Shayshon, B. and A. Popper-Giveon (2016), "'These are not the realities I imagined': an inquiry into the lost hopes and aspirations of beginning teachers", *Cambridge Journal of Education*, Vol. 47/4, pp. 533-549, http://dx.doi.org/10.1080/0305764X.2016.1214238. [8]

Simmie, G. et al. (2017), "Discursive positioning of beginning teachers' professional learning during induction: a critical literature review from 2004 to 2014", *Asia-Pacific Journal of Teacher Education*, Vol. 45/5, pp. 505-519, http://dx.doi.org/10.1080/1359866X.2017.1280598. [116]

Skrtic, T. (1991), "The Special Education Paradox: Equity as the Way to Excellence.", *Harvard Educational Review*, Vol. 61/2, pp. 148-206, https://doi.org/10.17763/haer.61.2.0q702751580h0617. [86]

Sliwka, A. (2008), "The Contribution of Alternative Education", in *Innovating to Learn, Learning to Innovate*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264047983-6-en. [131]

Smith, K. and M. Ulvik (2017), "Leaving teaching: lack of resilience or sign of agency?", *Teachers and Teaching*, doi: 10.1080/13540602.2017.1358706, pp. 928-945, http://dx.doi.org/10.1080/13540602.2017.1358706. [59]

Solbrekke, T. and C. Sugrue (2014), "Professional accreditation of initial teacher education programmes: Teacher educators' strategies—Between 'accountability' and 'professional responsibility'?", *Teaching and Teacher Education*, Vol. 37, pp. 11-20, http://dx.doi.org/10.1016/J.TATE.2013.07.015. [48]

Spencer, P. et al. (2018), "The professional development needs of early career teachers, and the extent to which they are met: a survey of teachers in England", *Professional Development in Education*, doi: 10.1080/19415257.2017.1299028, pp. 33-46, http://dx.doi.org/10.1080/19415257.2017.1299028. [130]

Spooner-Lane, R. (2017), "Mentoring beginning teachers in primary schools: research review", *Professional Development in Education*, doi: 10.1080/19415257.2016.1148624, pp. 253-273, http://dx.doi.org/10.1080/19415257.2016.1148624. [105]

Stanton-Salazar, R. (2011), "A Social Capital Framework for the Study of Institutional Agents and Their Role in the Empowerment of Low-Status Students and Youth", *Youth & Society*, Vol. 43/3, pp. 1066-1109, http://dx.doi.org/10.1177/0044118X10382877. [137]

Struyven, K. and G. Vanthournout (2014), "Teachers' exit decisions: An investigation into the reasons why newly qualified teachers fail to enter the teaching profession or why those who do enter do not continue teaching", *Teaching and Teacher Education*, Vol. 43, pp. 37-45, http://dx.doi.org/10.1016/J.TATE.2014.06.002. [54]

Tarabini, A., M. Curran and C. Fontdevila (2017), "Institutional habitus in context: implementation, development and impacts in two compulsory secondary schools in Barcelona", *British Journal of Sociology of Education*, Vol. 38/8, pp. 1177-1189, http://dx.doi.org/10.1080/01425692.2016.1251306. [89]

Tigchelaar, A., N. Brouwer and F. Korthagen (2008), "Crossing horizons: Continuity and change during second-career teachers' entry into teaching", *Teaching and Teacher Education*, Vol. 24/6, pp. 1530-1550, http://dx.doi.org/10.1016/J.TATE.2008.03.001. [28]

Tigchelaar, A., J. Vermunt and N. Brouwer (2012), "Patterns of development in second-career teachers' conceptions of teaching and learning", *Teaching and Teacher Education*, Vol. 41, pp. 111-120, http://dx.doi.org/10.1016/J.TATE.2014.04.001. [27]

Tomlinson, S. (1995), *Machine and Professional Bureaucracies: Barriers to Inclusive Education*, https://disability-studies.leeds.ac.uk/wp-content/uploads/sites/40/library/tomlinson-machine.pdf. [32]

Troman, G. and A. Raggl (2008), "Primary teacher commitment and the attractions of teaching", *Pedagogy, Culture & Society*, Vol. 16/1, pp. 85-99, http://dx.doi.org/10.1080/14681360701877818. [40]

Ulvik, M. and K. Langørgen (2012), "What can experienced teachers learn from newcomers? Newly qualified teachers as a resource in schools", *Teachers and Teaching*, Vol. 18/1, pp. 43-57, http://dx.doi.org/10.1080/13540602.2011.622553. [71]

van den Broek, G. (2012), "Innovative Research-Based Approaches to Learning and Teaching", *OECD Education Working Papers*, No. 79, OECD Publishing, Paris, http://dx.doi.org/10.1787/5k97f6x1kn0w-en. [132]

Vangrieken, K. et al. (2015), "Teacher collaboration: A systematic review", *Educational Research Review*, Vol. 15, pp. 17-40, http://dx.doi.org/10.1016/j.edurev.2015.04.002. [47]

Vieluf, S. et al. (2012), *Teaching Practices and Pedagogical Innovations: Evidence from TALIS*, TALIS, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264123540-en. [79]

Wang, J. and S. Odell (2007), "An alternative conception of mentor–novice relationships: Learning to teach in reform-minded ways as a context", *Teaching and Teacher Education*, Vol. 23/4, pp. 473-489, http://dx.doi.org/10.1016/J.TATE.2006.12.010. [115]

Waterman, S. and Y. He (2011), "Effects of Mentoring Programs on New Teacher Retention: A Literature Review", *Mentoring & Tutoring: Partnership in Learning*, Vol. 19/2, pp. 139-156, http://dx.doi.org/10.1080/13611267.2011.564348. [113]

Watters, J. and C. Diezmann (2015), "Challenges Confronting Career-Changing Beginning Teachers: A Qualitative Study of Professional Scientists Becoming Science Teachers", *Journal of Science Teacher Education*, Vol. 26/2, pp. 163-192, http://dx.doi.org/10.1007/s10972-014-9413-0. [26]

Watt, H. and P. Richardson (2008), "Motivations, perceptions, and aspirations concerning teaching as a career for different types of beginning teachers", *Learning and Instruction*, Vol. 18/5, pp. 408-428, http://dx.doi.org/10.1016/J.LEARNINSTRUC.2008.06.002. [64]

Weems, L. (2003), "Representation of Substitute Teachers and the Paradoxes of Professionalism", *Journal of Teacher Education*, Vol. 54/3, pp. 254-265, http://dx.doi.org/10.1177/0022487103252007. [19]

Weldon, P. (2018), "Early career teacher attrition in Australia: evidence, definition, classification and measurement", *Australian Journal of Education*, Vol. 62/1, pp. 61-78, http://dx.doi.org/10.1177/0004944117752478. [57]

White, J. and J. Moss (2003), *Professional Paradoxes: Context for Development of Beginning Teacher Identity and Knowledges*, Australian Association for Research in Education, Coldstream. [5]

Winthrop, R., A. Barton and E. McGivney (2018), *Leapfrogging Inequality: Remaking Education to Help Young People Thrive*, Brookings Institution, Washington, DC. [128]

Wong, H., T. Britton and T. Ganser (2005), "What the World Can Teach Us about New Teacher Induction", *Phi Delta Kappan*, Vol. 86/5, pp. 379-384, http://dx.doi.org/10.1177/003172170508600509. [103]

Woods, P. (1977), "Teaching for survival", in Woods, P. and M. Hammersley (eds.), *School Experience*, Croom Helm, London. [93]

Woods, P. and B. Jeffrey (2002), "The Reconstruction of Primary Teachers' Identities", *British Journal of Sociology of Education*, Vol. 23/1, pp. 89-106, http://dx.doi.org/10.1080/01425690120102872. [138]

Wyss, C., M. Kocher and M. Baer (2017), "The dilemma of dealing with persistent teaching traditions: findings of a video study", *Journal of Education for Teaching*, Vol. 43/2, pp. 191-205, http://dx.doi.org/10.1080/02607476.2017.1286782. [94]

Zuljan, M. and B. Požarnik (2014), "Induction and Early-caree Support of Teachers in Europe", *European Journal of Education*, Vol. 49/2, pp. 192-205, http://dx.doi.org/10.1111/ejed.12080. [102]