

The Best, Average, or Weak?

The Level of Competencies of Candidates for the Teaching Profession in European Countries

DOI: 10.47050/66515321.18–41

Magdalena Jelonek, Barbara Worek, Marcin Kocór

This chapter presents the results of a segmentation of teaching faculties' students from selected European countries. The segmentation was based on study data from the Programme for the International Assessment of Adult Competencies (PIAAC), particularly the level of the information processing skills (literacy and numeracy) of teaching faculties' students and the difference in the level of these skills between those students and their colleagues from other majors. The main goal of the segmentation was to distinguish clusters of European countries similar to each other in terms of the characteristics of candidates in the profession of teaching and then describe each group and identify factors that explain the observed differences. We propose a thesis that the skills of candidates in the teaching profession are of key importance for the quality of future staff working in European schools. The quality of these personnel has a major impact on students' educational achievements and, thus, on the quality of the human capital of society in general.

Keywords:

teachers' skills

education policy

quality of education

teachers' selection and preparation



Introduction

Given the current state of the literature, it can be emphasised that among the key factors influencing sustainable economic development is broad access to high-quality education permitting the formation of appropriate competencies (Aghion et al., 2009; Hanushek, 2012). Teachers are an important link in the process of education, and the quality and effectiveness of their work has a significant impact on the achievements of their pupils and consequently the professional and general successes of the schools' graduates (Carrell & West, 2010; Hattie, 2009; Hanushek & Rivkin, 2012; Hanushek et al., 2014; Meroni et al., 2015). This is why it is so important to seek out the best candidates for the teaching profession; in practice, therefore, this means recruiting for teacher training studies individuals who stand out among their peers in terms of competencies and are highly motivated to work in a school (Darling-Hammond et al., 2017) and thereafter encouraging the best graduates to undertake such work (Barber & Mourshed, 2007). Naturally, encouraging high-potential candidates to become teachers is not a sufficient condition to ensure high-quality education, but this is – as many researchers point out – an important factor that contributes to this quality (Schleicher, 2018). It can therefore be assumed that the optimum scenario is one in which candidates for the teaching profession are people with suitable motivation to work in this field, characterised by competencies that are at least as high as, or ideally higher than, their colleagues studying other subjects, as well as by a willingness to learn and develop (OECD, 2005, 2018).

In practice, however, attracting such candidates can prove to be very difficult for a number of reasons (Henke et al., 1996; Wexler & Maagan, 2002). In this respect, the situation varies in different European countries – diverse selection strategies are employed, and the systems used for motivating candidates to choose this kind of study programme also vary (OECD, 2005; Eurydice, 2006; European Commission/EACEA/Eurydice, 2015). Certain countries, for example, have entrance examinations in place for teaching degrees, whereas others recruit candidates on the basis of the results obtained at the previous stage of education (European Commission/EACEA/Eurydice, 2015; Ingvarson & Rowley, 2017; OECD, 2012). However, the mere fact of whether exams are used as a recruitment criterion for teaching degrees would seem to be a weak indicator of high demands towards candidates. More



significant is the nature of this exam, as well as the scope of knowledge and skills tested (Wang et al., 2003). The complexity of the educational solutions in force in the various European countries makes comparing the systems they use for training future teachers a more difficult task than it might seem at first, providing material for a separate study.

It is for this reason that we adopt a different perspective in this article. Rather than comparing the instruments with a potential impact on the quality of candidates for teaching studies, as Ingvarson and Rowley did (2017), we propose a comparison of the cognitive competencies of students taking teaching degrees in various European countries. Following Mateos-Romero and Salinas-Jiménez's approach (2017), we treat information processing skills as components of more general cognitive competencies. It can be assumed that the presence of candidates with high cognitive competences in teaching faculties is an important basis for shaping other competencies that are important from the point of view of future professional work.

We will treat these competencies as a proxy indicator of the quality of future teachers. Of course, this indicator only gives an approximate indication of this quality, since it does not take into account the important factor of the motivation to take up this kind of work after graduation. We therefore do not know whether it will be the best or the weakest students who later become teachers. Nevertheless, the high cognitive competencies of teaching faculties' students are certainly a factor conducive to a high quality of staff in schools. We will thus be interested in the first level of selection for the teaching profession, i.e. the choice of degrees preparing students for this profession. The objective of this comparison is first to identify clusters of European countries similar to each other in terms of the characteristics of teaching candidates, and then to describe the identified groups and attempt to identify the potential factors that might explain the differences observed. We understand the candidates' characteristics as their level of information processing skills (literacy and numeracy) as well as the difference in the level of these competencies between students of teaching subjects and other students. We assume that, from the point of view of optimising the selection of candidates for the teaching profession, those countries where the competencies of candidates for this profession are high, or on average higher than those of students in other degree programmes, are in the best position. If this is the case, it might



suggest the existence of positive selection for the teaching profession in these countries. We chose the two information processing skills (literacy and numeracy) because of their general nature, which points not so much to the teacher's professional preparation as to his or her potential that might be exploited during their further career.

The purpose of this paper is to address the following questions:

1. Which countries are similar to each other, considering the quality of candidates at the first level of selection for the teaching profession? By the first level of selection, we mean the selection of candidates for teaching faculties.
2. Can this similarity be explained using selected external factors?

To answer these questions, we propose a three-step approach around which this article is structured. Firstly, based on the literature, we identify factors influencing the number and quality of students preparing to work in the teaching profession. Secondly, we distinguish segments of similar countries (considering the level of competence of candidates for the teaching profession) in order to (thirdly) interpret the differences between these countries on the basis of additional existing data.

Conceptual background

This article is based on the fundamental premise that the quality of candidates for the teaching profession (teaching faculties' students) has a direct influence on the quality of teachers working in schools, which is in turn linked to the educational achievements of pupils (Hanushek & Rivkin, 2012; Hattie, 2009; Meroni et al., 2015). Accepting this premise leads us to the question of the factors that may affect whether the best candidates are indeed attracted to this profession. This area has been the subject of attention for some time (Applegate, 1987; Blake et al., 2010; European Commission/EACEA/Eurydice, 2015; Eurydice, 2006; Henke et al., 1996; Ingvarson & Rowley, 2017; OECD, 2005; Santiago, 2004). However, a relatively high number of analyses have dealt with teachers' professional preparation, the significance of their qualifications (e.g. possessing higher education), the certification of their competencies and the need for professional development rather than concentrating directly on the factors that can influence the quality of candidates for the teaching profession (Beauchamp et al., 2013; Darling-Hammond & Bransford, 2005; European Commission, 2013;

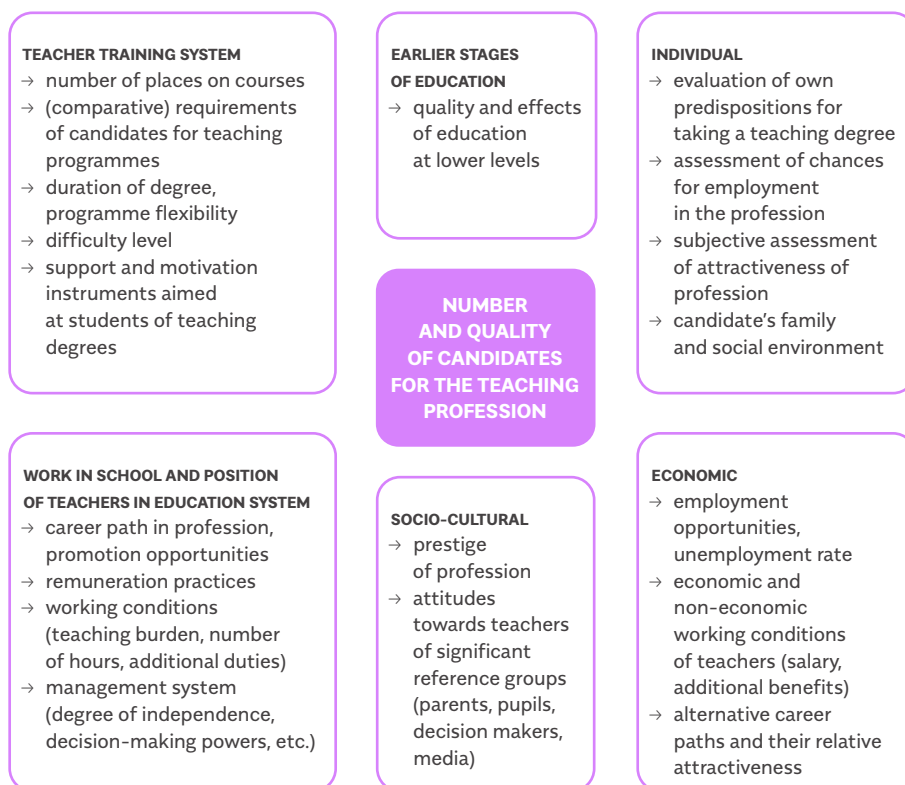


Mourshed et al., 2010; OECD, 2005, 2011, 2013a, 2013b; Tucker, 2012). Research on teacher training, meanwhile, often focuses on subjective motivations for choosing this career path (OECD, 2015; Walczak, 2012). Although such analyses are important and make it possible to reconstruct the process by which teachers choose their profession, they do not offer a full insight into all the factors and conditions that may have an impact on the process of selection of candidates for the profession. And yet, Wang et al. (2003) point out that attracting suitable candidates to the teaching profession is one of the more important filter mechanisms occurring in the process that these authors refer to as the "policy model of the teacher-supply pipeline". The significance of this mechanism is confirmed by the results of the analyses conducted by Barber and Mourshed (2007), who evaluated the teacher quality policies in countries obtaining high results in Programme for International Student Assessment (PISA) research. Summarising the patterns they found, they note that "the top-performing school systems we studied recruit their teachers from the top third of each cohort that graduate from their school systems; the top 5% in South Korea, the top 10% in Finland, the top 30% in Singapore" (Barber & Mourshed, 2007, p. 16). These authors were working from a somewhat different perspective to our own, focusing not on the first stage of the selection of candidates for the teaching profession – acceptance for degree programmes preparing students to be teachers – but rather on the second stage – the selection of candidates to be teachers out of teaching degree graduates. We can assume, however, that selection at the first stage will be a significant factor in the quality of graduates completing teaching degrees, from whom future teachers will subsequently be recruited. None the less, as Ingersoll et al. (2007) point out, the countries with the best educational results do not confine themselves to setting high requirements for candidates for teacher training degrees but rather endeavour to make this profession attractive for candidates in terms of both salary level and working conditions. The results of the analyses conducted by this team suggest that policies geared solely towards tightening the recruitment criteria for teaching degrees are only effective to a limited extent in terms of attracting the best candidates. They need to be complemented by actions aimed at providing teachers with comparable working conditions to those offered in other specialist professions.



However, the factors potentially influencing the question of whether the best candidates train to be teachers are not limited to selection mechanisms or economic issues. Santiago (2004) demonstrated this in his model of the teaching job market, which is characterised by supply and demand and affected by its environment – the existing social, cultural, and administrative conditions. Figure 1 illustrates Santiago's model in a modified version (prepared specifically for this study), paying greater attention to the decisive factors in the choice to train as a teacher rather than to work in a different profession. This model will be used in this article as a theoretical framework to explain differences between countries in the quality of their teaching candidates.

Figure 1. Factors influencing the number and quality of students preparing to work in the teaching profession



Source: own elaboration based on: Santiago, 2004.

As well as affecting the quality of candidates for the teaching profession, various factors may also have an impact on each other. For example, the quality of education and its differentiation at lower levels of education will influence graduates' competencies, which will in turn have an effect on their choice of degree programmes suited to their potential. There will also be a link between socio-cultural and economic factors. Furthermore, the decision to train to be a teacher may be affected by the prestige of the profession and social recognition of teachers. The readiness of the best candidates to choose this career, however, may be reduced by economic factors – such as job opportunities in the profession, teachers' salaries, and attractiveness of alternative career paths.

The various factors may influence potential teaching candidates both at the stage of choosing what to study and after their completion of the programme when they decide to begin working in a school. From the perspective of people choosing a degree course, the factors directly influencing their choice are, in particular, the organisation of the teacher training system, including the number of places available on such study programmes, the requirements candidates need to satisfy compared to those for applicants for different courses, and the availability of scholarships and other forms of support acting as motivation for the choice of training in this profession (European Commission/EACEA/Eurydice, 2015; OECD, 2005).

Individual and social factors also play a major role in the choice of an educational path preparing students for the teaching profession. These include candidates' evaluation of their own capabilities and predispositions for studying and working in this field, their family and social background (e.g. parents' socio-economic status, teaching traditions in the family, previous experience of working with children and teenagers), the prestige of the profession or their subjective assessment of the teaching profession (Barber & Mourshed, 2007; Ingvarson & Rowley, 2017; Tenore et al., 2010).

Among the factors mentioned as being responsible for difficulties in recruiting the best candidates to be teachers are the reduced prestige of the profession and the worsening of its relative economic potential (European Commission, 2013; European Commission/EACEA/Eurydice, 2015). As a result of this, it has been pointed out that one of the ways of making teaching more attractive might be to concentrate on factors



such as teachers' job satisfaction and perceptions of how much society values their work, as well as the school environment and working conditions (European Commission/EACEA/Eurydice, 2015).

Whether candidates are ready to embark on preparatory programmes for a teaching career, and if so which candidates, may also depend on their evaluation of the employment prospects in this profession, itself related to the anticipated demand for labour following their completion of the programme. Demand for teachers is affected by various factors. The following are mentioned most frequently (European Commission/EACEA/Eurydice, 2015; OECD, 2005; Santiago, 2004):

1. size of school-age population,
2. average class size,
3. expected teaching burden,
4. teaching hours requirements,
5. use of assistants or other people in the education process,
6. use of information technologies or distance learning,
7. duration of mandatory education.

Some of these factors are susceptible to the influence of political decisions (e.g. age at which children begin and end compulsory schooling, class size, teaching burden), while others are not subject to direct influence (e.g. size of school-age population). Budget constraints and the resultant decisions are factors that must also be taken into account. These decisions include setting class sizes, for example. The reduction of class sizes results in a greater demand for teachers, which, coupled with a capped salary budget, may lead to a drop in earnings. Lower average salaries might in turn put good teachers off working in a school or dissuade candidates from entering teacher training programmes.

As Hanushek and Pace (1995) point out, however, the amount of teachers' earnings is less significant in deciding whether to embark on teaching studies or not. The importance of this factor increases when graduates of such programmes decide to look for work in a school or to choose a different career path. As studies conducted in the United Kingdom show (Dolton, 1990), the relative level of pay in teaching and non-teaching professions as well as the likely increase in earnings in the two categories has a major impact on the decisions taken by graduates. If teaching salaries are lower than the earnings of other categories of specialists and grow more slowly than earnings in other groups,



fewer people take jobs as teachers after completing their degrees. Similar results are given by the analyses of Wolter and Denzler (2003) conducted in Switzerland on data concerning graduates from 1981–1999. These confirm that the supply of teachers is closely linked to the relative earnings of teachers – the higher the salaries of teachers in comparison to those of other specialists, the larger the supply of teachers (Chevalier et al., 2007; Department of Education, Science and Training, 2006; Dolton, 2014, 2016; Dolton & Marcenaro-Gutierrez, 2011; Dolton et al., 2003). At the same time, high earnings do not guarantee that the best candidates are selected for the teaching profession, since non-financial factors play a more important role in many cases (OECD, 2008).

The factors discussed above may explain the differentiation between candidates beginning training for the teaching profession. Without doubt, however, the competencies of students of teaching degrees are also affected by the quality of education in the programmes themselves. These two elements are closely related – the selection of high-quality and motivated candidates for teacher training brings positive results during their studies. If we wish to obtain similar effects when recruiting weaker candidates, expenditure on and the organisation of the education process must be adapted accordingly. We can therefore assume that preparing high-quality teachers will be hampered significantly in the case of the recruitment of candidates with lower levels of competency. The optimum solution is therefore to admit very good candidates for teaching degrees, develop their competencies during the programme, employ them in the profession and stimulate them for further development.

The next section of the article presents the results of an analysis designed to help to show which factors explain the differentiation in the level of candidates' competencies for the teaching profession. First of all, on the basis of empirical data, we classified the countries into six segments that ultimately fit into three large groups, in which the situation in terms of the competencies of candidates for the teaching profession is (1) optimal, (2) average, or (3) suboptimal. Based on the available secondary data, we attempted to identify the factors differentiating the various segments, particularly taking into account the extreme segments in which the situation is optimal or suboptimal.



Data and method

For our analysis, we used data from the Programme for the International Assessment of Adult Competencies (PIAAC) collected by the OECD in over 40 countries (approximately 5,000 individuals in each participating country). The PIAAC is an international survey that assesses the skills of working-age adults (aged 16–65). It provides estimates of adults' competencies in key information processing skills: numeracy and literacy skills, and the capacity to solve problems in technology-rich environments. Often, these skills are assumed to be components of more general cognitive competence (Mateos-Romero & Salinas-Jiménez, 2017) alternatively, a level of cognitive skills which is commensurate with their job. Different returns are found for each group of overeducated individuals both when compared with adequately educated peers within a similar level of education (with greater wage penalties for apparently overeducated workers).

For our analysis, we selected only European countries from the first and second rounds of studies (2008–2016), with the exceptions of Italy and Lithuania, where the number of teacher candidates was too small to guarantee good estimates. We defined teacher candidates as those studying in programmes classified in the group "Teacher training and education science". The selected sample of teacher candidates was composed of 1,327 cases. The analysis included all the countries in which the subject of study was asked about (i.e. where the identification of students of teaching degrees was possible).

We employed a hierarchical cluster analysis to examine the similarities and dissimilarities of the teacher candidates' information processing skills (numeracy and literacy) in selected European countries. For this study, a set of indicators was used to identify similar countries using a hierarchical clustering analysis. These variables were: (1) average literacy scores for teacher candidates, (2) average numeracy scores for teacher candidates, (3) differences between average literacy scores for teacher candidates and other students, and (4) differences between average numeracy scores for teacher candidates and other students.

As was mentioned in the first part of the article, we assumed that the optimal situation is in countries where (1) the information processing skills of all students are high and (2) teacher candidates' competencies are higher than other students' skills, which indicates a positive



selection for the teaching profession. The reverse relation is suboptimal and demonstrates a negative selection for the teaching profession.

Results

In the cluster analysis, we found evidence of six distinct groups (see Table 1). First, there were groups with a "super-optimal" (cluster 4 – Finland) or optimal situation (clusters 3 and 1), where we observed very high literacy and numeracy skills for all students and positive selection of teacher candidates (higher competencies of teacher candidates than other students). This group is composed of six countries (two in cluster 3 and four in cluster 1): Estonia, Netherlands (positive selection only on literacy scores), Finland (positive selection on both scores with higher positive selection on numeracy and the highest numeracy and literacy scores for the whole population), Austria, Belgium, Norway, and Sweden, where we identified a positive selection of teacher candidates (for both numeracy and literacy) and quite high literacy and numeracy skills for all students. Some mediocre countries (cluster 2: Czech Republic, Denmark, France, Ireland, Slovenia, Spain, and the United Kingdom¹) showed no significant difference between students on courses in the "Teacher training and education science" group and others. Students from this group instead demonstrated a less good performance (average literacy and numeracy scores). The last groups (clusters 5 and 6) can be regarded as poorly performing countries. The worst situation is in cluster 5, composed of Greece and the Russian Federation, where all students had extremely low literacy and numeracy scores and teacher candidates were negatively selected. An equally suboptimal situation was observed in cluster 6, including Poland and Slovakia, characterised by medium literacy and numeracy scores for all students and also a negative selection for teacher candidates.

1 The UK is a unique case in this segment because of its generally high results on the literacy scale (both overall results and positive selection).



Table 1. Cluster characteristics

COUNTRY	CLUSTER	LIT (DIFFER.)	NUM (DIFFER.)	LIT MEAN (TEACHER CANDI- DATES)	NUM MEAN (TEACHER CANDI- DATES)	LIT MEAN (ALL STUDENTS)	NUM MEAN (ALL STUDENTS)
Poland	6	-5.19	-12.1	287.43	269.96	292.62	282.07
Slovakia		-3.36	-10.78	281.92	279.55	285.29	290.33
Greece	5	-14.81	-6.85	257.16	260.05	271.96	266.9
Russian Federation		-17.63	-16.05	264.38	263.82	282.01	279.87
Finland	4	7	12.48	313.37	310.69	306.37	298.21
Estonia	3	11.79	1.06	308.4	290.94	296.62	289.88
Netherlands		13.54	1.85	314.4	294.23	300.85	292.39
Czech Republic	2	0.28	-1.82	289.52	284.44	289.24	286.26
Denmark		3.51	-7.61	284.51	275.49	281	283.11
France		2.52	5.18	289.6	281.79	287.08	276.6
Ireland		6.49	2.47	291	275.94	284.51	273.47
Slovenia		1.03	-3.28	283.97	281.14	282.95	284.42
Spain		3.22	-1.15	283.09	271.29	279.87	272.44
UK		9.38	-3.19	294.03	270.48	284.64	273.66
Austria		15.79	9.47	305.16	303.22	289.37	293.74
Belgium	1	12.37	9.41	302.03	299.15	289.66	289.74
Norway		16.62	15.43	299.36	295.96	282.73	280.53
Sweden		12.81	6.68	301.57	291.8	288.76	285.12

Source: PIAAC Study 2008–2016.

Data interpretation and discussion

In order to explain the results of the segmentation, we need to refer to the factors influencing the quality of teacher candidates, i.e. students of teaching degree programmes. This is a major challenge as a result of the diversity of systems of the selection and training of candidates for the teaching profession in different countries, as well as their



varying economic, social and cultural situations. A further difficulty is access to fully comparable data that can be used to evaluate the selection system of candidates for the teaching profession and the factors influencing this system. Despite these obstacles, we attempted to assemble indicators for the analysed countries which, according to Santiago's model (2004) presented in the first section, have an impact on the quality of teachers and which are also used in comparative international studies. These indicators, presented in Table 1 in the Annex, take into account five types of factors with a potential influence on the quality of candidates for the teaching profession: (1) achievements at earlier stages of education, (2) teacher education system, (3) socio-cultural conditions, (4) working conditions in school, and (5) earnings.

Before the conclusions are presented, certain caveats are necessary. Firstly, the analysed factors best distinguish countries at the extremes – i.e. the best situation (cluster 4: Finland) and the worst (clusters 5 and 6: Greece, Russian Federation, Poland and Slovakia). With the remaining countries, it is hard to make unambiguous judgements: in their case, certain indicators have optimal values, and others less favourable ones. Secondly, among the aforementioned classes of factors influencing the quality of future teachers, we can distinguish those which (1) clearly distinguish extreme groups, (2) distinguish countries, but with the caveat that one outlier can be observed, and (3) cannot be interpreted in one clear-cut way when describing the groups in question.

Dimensions that are hard to interpret include the teacher training system and working conditions in schools. International studies usually describe the teacher training system by taking into account the implementation of an examination of qualifying candidates to be employed as teachers, as well as the duration of the training process. Working conditions, meanwhile, often refer to working time or subjective job satisfaction. However, the indicators customarily employed for analysing the teacher training system do not appear to fully reflect the qualitative differences between countries. For example, the duration of the training process might act as both a motivation and a demotivation for candidates for a teaching programme. It is therefore better to look for explanations in qualitative factors, the hard-to-measure, specific ways in which the candidates' selection and training system are organised.



Finland, for example, an independent, outstanding super-optimal segment, is a country regarded as having one of the most effective teacher recruitment and training systems in the world (Barber & Mourshed, 2007). The teaching profession enjoys high prestige, attractive salaries and good working conditions (Akiba et al., 2012; Sahlberg, 2011; Wong et al., 2013). It is very difficult to gain a place on a Finnish teaching programme – primary school teacher courses usually accept one in ten candidates (Sahlberg, 2010).

In Poland, meanwhile, which belongs to the suboptimal segment in terms of the competencies of students of teaching degrees, numerous places are available on programmes training future teachers. Candidates for the teaching profession can attend various types of higher education institutions (public and private), offering training of varying quality and on either a full-time or part-time basis (Jelonek et al., 2017). Universities and colleges recruiting candidates for teaching programmes apply diverse criteria and often accept a large number of applicants, with selection based solely on the completion of the school-leaving exam. Moreover, teaching degrees are perceived as relatively easy in Poland, which might encourage candidates with lower competencies to apply for such programmes. As a result, the number of teachers trained in Poland exceeds demand, and negative selection takes place in the process of recruitment for the profession.

There is slightly better variation in the extreme clusters of average teacher earnings: in suboptimal clusters, minimum earnings – usually those of young teachers – tend to be low. An exception here is Greece. Salary seems to be a factor that attracts candidates to the teaching profession, yet there is no evidence that increases in pay levels encourage the most talented candidates to apply (Dolton, 2014; 2016). Studies show that material factors, including earnings, are important in this case, but are not the most important factor – especially when there are genuine alternatives of working in another, better-paid specialist profession.

The dimension that differentiates a super-optimal cluster most strongly from a suboptimal one is achievements at earlier stages of education, which can be characterised from the perspective of the aspirations of better or worse school pupils to work in the teaching profession. These aspirations are usually formed between the ages of 10 and 14 (Ashby & Schoon, 2010; The Royal Society, 2006;



Schoon & Parsons, 2002). Pupils' perception of the teaching profession as well as early career aspirations can therefore be important for later career selection, including the decision to continue in education as a teacher.

In the suboptimal cluster, it is usually weaker school pupils (on average with lower literacy and numeracy skills than pupils interested in pursuing other specialist professions) who aspire to the teaching profession. In these countries, a lower total percentage of pupils aspire to be teachers, and children from higher social classes (parents with higher education) relatively seldom have the ambition to enter this profession. Again, Greece is something of an exception here. In this context, the results of OECD (2018) research on 15-year-old school pupils are a concern, revealing that in Europe, pupils aspiring to the teaching profession generally tend to have a lower level of competencies than their peers seeking to enter other specialist professions. Among the countries considered in this analysis, Estonia stands out; the pupils contemplating a teaching career in this country obtain better results in competency tests than those planning to work in a different specialist profession. This shows that the teaching profession is attractive for able 15-year-olds, and the selection mechanisms for the profession sustain this trend.

Apart from selection mechanisms, many countries also employ incentive systems aiming to reduce the overall shortage of teachers or shortages in specific subjects, as well as to attract good candidates to the profession (OECD, 2005). An example of a country with such instruments in place is the United Kingdom, a country in the optimal segment. Schemes include scholarships, fee waivers, reimbursements for the repayment of loans after graduates have commenced teaching work, or financial incentives for people training in a given subject or who are willing to work in a specific field. A report on the implementation of these schemes stated that they resulted in increased numbers of teacher trainees (OECD, 2005). The available data also reveals that the candidates commencing teacher training programmes after the implementation of these instruments are characterised by higher competencies (Ross & Hutchings, 2003).

As mentioned above, however, optimal results in the selection of suitable candidates for the teaching profession are not guaranteed either by a restrictive recruitment policy alone or by systems designed



to increase the attractiveness of teacher training programmes (Ingersoll et al., 2007). It is also essential for students on such courses to have high motivation, which is in turn closely associated with the prestige of the teaching profession and teachers' working conditions (European Commission/EACEA/Eurydice, 2015; Han et al., 2017; Park & Byun, 2015). It is difficult to assess the prestige of the teaching profession in the countries in the various segments as a result of the lack of comparable international studies. We can look to the results of TALIS research, however, which shows whether teachers view their profession as enjoying social recognition or not. Although the results are not unequivocal here either, teachers regarded their profession as socially respected in countries from the optimal segment (e.g. Finland, Belgium) considerably more often than in countries from the suboptimal segment (e.g. Poland, Slovakia). Here, too, there are certain exceptions (e.g. Sweden), where the percentage of teachers declaring that their profession is valued in society is similar to, or even lower than, countries from the suboptimal segment (e.g. Poland). Poland also offers an interesting comparison between the actual perception of the prestige of the teaching profession and teachers' views of this prestige. In a long-term nationwide study on the hierarchy of professions, teachers have occupied a relatively high position for years. According to the results of this study from 2013, teachers were ranked seventh in the hierarchy of professions' prestige, ahead of doctors and lawyers (CBOS, 2013). Teachers themselves, however, judge their work not to be prestigious (Federowicz et al., 2013). Their rating of the financial attractiveness of their profession is similarly low – just 16% agreed with the statement that teaching salaries were satisfactory (ibidem).

Significant elements encouraging people to choose the path of education leading to the teaching profession are internal motivators, including a perception of this career as favouring independence and individual development and being an interesting occupation that provides a sense of being useful to society. This perception might be connected to working conditions in the teaching profession, the nature of the work, or the extent of freedom that it gives. This factor can be approximated by assessing teachers' job satisfaction. As the data presented in Table 1 shows, once again, Finland stands out in this regard, and of the countries for which data is available, the least satisfied with their work are teachers from Slovakia. Although again this trend



is not entirely clear, we might tentatively conclude that in countries in the optimal segment, teachers are slightly more satisfied with their work than their counterparts in countries in the suboptimal segment.

Conclusions

In summary, it is again worth noting the rather worrying trend in the case of countries in the suboptimal segment. In these countries, the average level of literacy and numeracy is low, and additionally, teaching degree programmes select individuals with lower competencies than is the case for other subjects. As a result, positive selection for the teaching profession in these countries is hampered considerably – even if the best students in the cohort ultimately opt for the teaching profession, they will not be the best overall. A low standard of teachers is likely to translate into low achievements by pupils, which again leads to a lower standard of individuals aspiring to work in schools in future.

PISA data confirms the existence of a feedback mechanism, which can also be observed at the micro level. In the case of schools located in peripheral regions of the country, with more children with greater educational needs on average, teachers' level of competency is relatively low (OECD, 2018). For countries in the suboptimal segment, the matter is complicated as a result of the overlap of the primary and secondary mechanisms of professional selection. The former is responsible for negative selection for the teaching profession. This phenomenon is visible, for instance, in the on average lower competencies of individuals participating in teaching degree programmes. This has been described in this article and has been confirmed by, among others, the OECD's research on aspirations to pursue specific careers among 15-year-olds (OECD, 2018). Consequently, there is a reasonable risk that the teachers responsible for assessing, selecting and increasing the potential of children in the countries in this segment will possess lower competencies and potential than the parents of these children. Considering the fact that one of the objectives of education is to increase young people's potential, the situation appears extremely unfavourable. As the OECD's research reports, the above mechanism is further exacerbated by additional micro differentiation visible at the stage of leaving the higher education system. Talented graduates of teaching degrees choose to work in better schools, which are usually attended by more able pupils. While the former of these mechanisms



is responsible for the generally lower effectiveness of the education system (low level of teaching) and children's potential is consequently not completely fulfilled, the latter reinforces social inequalities at the local level.

We are aware that the mere fact of studying on a teaching programme does not necessarily mean the same as working in this field, and indeed some students opt for a career not connected to their degree subject. The question of which students are more inclined to make the final decision to be a teacher is the next important factor deciding on the quality of school teaching staff. Further research questions that are well worth investigating concern the chances that the most capable students of teaching programmes will decide to work in a school, as well as what could be done to increase this likelihood.



Annex

Table 1. Key characteristics of the countries selected

COUNTRY	CLUSTER	MATHEMATICS MEAN TEACHERS (1)	MATHEMATICS MEAN OTHER PROFESSIONALS (2)	READING MEAN TEACHERS (1)	READING MEAN OTHER PROFESSIONALS (2)	ENTRANCE EXAM	EXAMS/CERTIFICATES/PRACTICES TO AUTHORISE TEACHING
AUSTRIA	1	519.84	523.46	533.73 [*]	516.13 [*]	1	1
BELGIUM		495.84 [*]	527.64 [*]	491.96 [*]	526.56 [*]	0	0
NORWAY		518.23	525.07	542.74	544.56	0	0
SWEDEN		502.92	516.32	518.55	532.77	0	0
CZECH REPUBLIC	2	536.58	534.46	539.30	538.83	0	0
DENMARK		528.42	528.83	526.38	525.39	0	1
FRANCE		510.11 [*]	533.16 [*]	529.07 [*]	546.95 [*]	0	1
IRELAND		503.23 [*]	521.83 [*]	526.81 [*]	543.90 [*]	1	1
SLOVENIA		544.52	538.22	553.45	541.42	0	0
SPAIN		476.09 [*]	503.58 [*]	493.86 [*]	517.22 [*]	0	1
UNITED KINGDOM		491.42 [*]	510.34 [*]	505.83 [*]	518.32 [*]	0	1
ESTONIA	3	546.34 [*]	538.69 [*]	552.97	542.78	0	0
NETHERLANDS		510.62 [*]	549.12 [*]	508.38 [*]	544.17 [*]	0	0
FINLAND	4	528.57 [*]	544.75 [*]	555.04 [*]	567.09 [*]	1	1
GREECE	5	451.24	475.43 [*]	474.51 [*]	495.92 [*]	1	1
RUSSIAN FEDERATION		494.50	507.71	506.52	514.56	0	0
POLAND	6	520.58	533.84	533.65	543.98	0	0
SLOVAKIA		481.79 [*]	516.60 [*]	480.13 [*]	506.44 [*]	0	0
		PISA 2015					OECD

^{*}) Significant differences on the level $p < 0.05$.

¹⁾ Mean score in mathematics and reading among students who expect to become a teacher.

²⁾ Mean score in mathematics and reading among students who expect to become other professionals, include scientists, engineers, medical professionals, teachers, and business, legal, social science and related.



LONG EDUCATION (<4.3 YEARS AVG)	PERCENTAGE OF STUDENTS EXPECTING A CAREER IN TEACHING	PERCENTAGE OF STUDENTS EXPECTING A CAREER AS PROFESSIONALS	PERCENTAGE OF STUDENTS EXPECTING A CAREER IN TEACHING (PARENTS WITH TERTIARY EDUCATION)	HOURS OF TEACHING ONLY/WEEK	SATISFACTION INDEX (3)	TEACHING PROFESSION IS VALUED IN SOCIETY (4)	MIN SALARY AS % GDP (ISCED2)	MAX SALARY AS % GDP (ISCED2)	NO. OF YEARS TO OBTAIN THE MAX SALARY (ISCED2)	RELATIVE SALARY INCREASE/YEAR (5)
1	5.2	49.1	5.1	-	-	-	84.6	170.0	34	1.99
0	4.5	51.2	4.6	20.95	7.93	45.9	88.6	151.2	27	2.07
1	3.2	46.7	3.4	15.53	7.71	30.6	65.2	-	-	-
0	1.5	42.2	1.7	17.58	5.95	5.0	67.0	93.4	-	-
1	3.3	35.6	3.3	17.84	6.21	12.2	62.6	77.4	27	0.82
0	1.2	33.1	1.1	18.60	7.57	18.4	94.0	116.1	12	1.94
1	3.8	44.3	3.8	18.59	6.17	4.9	87.6	152.3	29	1.99
1	11.8	61.4	11.1	-	-	-	78.1	166.7	22	3.68
0	4.4	45.7	4.8	-	-	-	98.3	158.1	25	2.00
1	5.6	60.7	5.7	18.60	7.22	8.5	144.1	201.5	38	0.94
0	5.0	61.4	4.7	19.63	7.40	35.4	84.3	143.5	10	6.09
1	1.4	55.3	1.4	20.86	6.38	13.7	67.1	77.3	8	2.04
1	4.9	36.3	4.8	16.87	7.62	40.4	95.3	196.3	12	6.78
1	4.6	37.1	4.9	20.29	8.41	58.6	96.2	125.1	20	1.39
0	5.9	59.4	6.0	-	-	-	75.3	142.3	33	2.01
0	2.6	50.9	2.6	-	-	-	-	-	-	-
0	2.4	39.7	2.9	18.93	7.13	17.9	60.8	102.6	20	2.80
1	2.9	34.5	2.9	19.85	5.84	4.0	50.6	68.5	32	0.98
TALIS					Eurydice					

³⁾ The satisfaction index was calculated based on four questions (TT2G46A, TT2G46B, TT2G46H, TT2G46J) and its values may vary from 0 (the lowest satisfaction) to 12 (the highest satisfaction).

⁴⁾ Percentages of respondents answering "agree" and "strongly agree" to the question "I think that the teaching profession is valued in society".

⁵⁾ Coefficient calculated on the basis of "Multiple-Year Growth Rate Percentage" ($P = [(f/s)^{(1/y)}] - 1$).



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