

## 1 **Teacher Shortage. What can we learn from Countries** 2 **without Teacher Shortage?**

3  
4 The overall aim of this study was to examine three countries without, or with  
5 little teacher shortage to explore what these countries do to attract and retain  
6 educated teachers. The three countries selected for this case study were  
7 Finland in Europe, Singapore and The Republic of Korea, in the Southeast  
8 Asian area. In this case study, the data materials used for these countries, as  
9 three specific case studies, are policy documents, statistics, reports, and peer  
10 reviewed articles. In the analysis, the themes, in each case, were thematically  
11 encoded and categorized by the described case context. The themes were  
12 identified deductively as they were strongly linked to the data. The results  
13 indicate that teacher shortage and abundance within a country is related to  
14 teacher status and explained as coming from students' performance and result,  
15 teacher training/-education, selecting systems for both incoming teacher  
16 students, graduated, and support during their first years of their profession.  
17 Teacher status is seen as a loop in which higher teacher status leads to less  
18 teacher shortage. The overall conclusion is that attracting and retaining  
19 teachers is multifaceted and complex and is the result of many interacting  
20 aspects in each specific country context.

21  
22 *Keywords:* Finland, multiple case study, Singapore, The Republic of Korea,  
23 teacher attractiveness.

### 24 25 26 **Introduction**

27  
28 Teacher shortage appears to be a challenge worldwide. In a recent report,  
29 UNESCO reports the need for some 44 million new teachers to reach the Agenda  
30 2030 targets (UNESCO, 2024). Some countries are more exposed to this  
31 shortage than others, especially around sub-Saharan Africa, and overall in  
32 specific subjects, teachers' gender and ethnicity and in specific geographical  
33 areas within the country (OECD, 2021; UNESCO, 2024). However, some  
34 countries do not appear to be affected by teacher shortage.

35 This study begins with a presentation of research of teacher shortage world-  
36 wide and the how teacher shortage is defined and understood. Following this,  
37 the cases of Singapore, The Republic of Korea<sup>1</sup> and Finland is highlighted due  
38 to their lack of teacher shortage in McKinsley and Company's report (2007).  
39 Next, the study will discuss the findings from each case and finally emphasised  
40 the quality of teachers and teacher education in ensuring teaching profession as  
41 an attractive profession. Implications for practice, and important issues for future  
42 research will then be presented.

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<sup>1</sup>In this article Korea, South Korea and The Republic of Korea will be used interchangeable due to the name the different references are using.

## Background

Eurydice (2021) revealed that 35 of the 43 education systems across Europe had reported teacher shortage. Despite years of investment in recruiting and retaining teachers, the issue persists (McKinsley, 2007). There is no universally agreed or consistent definition of what a teacher shortage is (Gorard et al. 2024). A shortage implies an insufficient number of individuals recruited into the profession. Teacher shortages can be general or specific to particular phases of education, subject areas, geographical locations, i.e. rural or high-risk areas, or types of school. Additionally, economic issues, such as salary, prospect of bonuses, and understanding of the profession (e.g. required tasks, working conditions, student discipline) may be considered. What one individual or country perceive as a shortage of teachers may not be viewed as a shortage by others. In many developed countries, a teacher shortage is seen as a lack of qualified teachers to teach the subject that they are trained for. In some developing countries, the requirements to be a teacher are often less stringent. Unqualified or out-of-subject teachers might therefore be used without this being viewed as a sign of teacher shortage (Gorard et al. 2024).

Countries where education is reported to be significantly affected by a teacher shortage have high student-teacher ratios (STR) and larger class size. Conversely, countries with low STRs and smaller class sizes may not report major issues with teacher shortages. However, there are countries with large class sizes but low STRs. These countries generally do not report serious teacher shortages (OECD, 2019b). Teaching hours are higher in England than in many other OECD countries. This means that teachers in England can teach more classes, so classes can be smaller.

One concern about the shortage of teachers is the relatively low status of teachers perceived by the public (OECD, 2019b; Thompson, 2021). The 2018 TALIS survey (OECD, 2019b) shows that countries where teachers are less valued by society, policymakers and the media report being significantly affected by a shortage of qualified teachers. Countries like Singapore, China (Shanghai), Korea and Finland where teachers are more appreciated by the government, and the public, do not generally report persistent or high teacher shortages. In Finland and Korea, teaching is apparently a much-desired profession (Education GPS, 2023). Besides status, pay and workload, other aspects like job satisfaction and working environment also need to be considered in explaining the absence or presence of a teacher shortage (Gorard et al. 2024). Despite a massive increase in spending on education reforms in almost every country in the world, it has barely decreased the teacher shortage (McKinsley, 2007).

Due to the many different aspects that can describe teacher shortage and how important they might be in themselves; we have restricted us to examine the relation between the status of teacher profession and the attractiveness of the teaching profession in the selected country.

## Conceptual Framework

Teacher shortages are a complex issue with many aspects linked to it. To frame this study, we have used the predictors of teacher shortage from UNESCO's Global Report on Teachers (2024) main list of aspects that influence teacher shortage; teachers' working conditions, teacher training, and teachers' social status. Also OECD's Teachers Matter: Attracting, Developing and Retaining Effective Teachers (2011) list of general pointers have served our understanding and analysis of the teacher shortage: *Working conditions*; *Teacher training/education* and *Teacher status*. These aspects will also serve as the deductive codes of the analysis of the results and are illustrated in Table 1.

Table 1. Conceptual framework based on attractiveness to the teacher profession (OECD, 2011)

Conceptual layers	Issues relevant to attractiveness
Working Conditions	Salary STR/school size Educational support personnel Continuous professional development (CPD) Job satisfaction
Teacher training/education	Selecting system Teacher education certificate
Teacher status	Students' learning, performance and results Society and mass media

Acknowledging that it may be difficult to isolate one theme from the other since they often tend to overlap, we have presented and discussed themes separately.

We have limited our framework and do not focus on aspects that are general or specific to certain areas of teacher shortage. According to Gorard et al. (2024) these such as *phases of education*, *subject areas*, *geographical locations (rural or high-risk areas)* or *types of school*. Neither have we focused on the distinction between *unqualified and/or out-of-subject teachers* since the requirements to be a teacher differs to much between countries.

## Aim and Research Questions

The overall aim of this study was to investigate aspects which characterize countries that lack teacher shortage through the study of three specific country cases to focus on what the characteristics of teacher shortage are in these countries. The following research questions were posed 1) *Which aspects characterize countries lacking teacher shortage?* and 2) *What can we learn from countries without teacher shortage?*

## Methodology

### Multiple Case Study

In this study a multiple case study (Stake, 2005; Yin, 2014) is used to achieve a deep understanding of differences in teacher shortage and teacher supply within different countries. The major advantage of multiple case studies lies in its cross-case analysis. A multiple case study shifts the focus from understanding a single case to the differences and similarities between cases. With a multiple case study, an in-depth analysis of several cases is conducted. First, an investigation of individual cases is conducted. Later, these individual results are combined and similarities and differences are studied (Stake, 2005; Yin, 2014).

### Case Selection

Based on the literature, three countries with little or no teacher shortage were selected for this study. Using UNECOs *Global Report on Teachers* (2024), the initial selection three counties as cases was made: Finland, Singapore and Korea. These counties are highlighted due to their lack of teacher shortage in McKinsley and Company's report (2007) and their high results on students' results in international measurements such as PISA, PIRLSS and TIMSS.

### Materials and Methods

For this study international and national policy documents and statistics have been studied, in combination with international reports and studies on teacher shortage, supply, recruitment, working conditions and teacher status. Peer reviewed articles were also selected by a broad search in the data base Scopus, and by hand search for other suitable and reliable articles examining related areas of the aim of this study.

The search terms, with their tautological terms, used were: "Teacher supply AND Finland"; "Teacher supply" AND "Singapore"; "Teacher supply AND South Korea"; "Teacher shortage AND Finland"; "Teacher shortage AND Singapore"; and "Teacher shortage AND South Korea". In the search of the literature in SCOPUS, search was specified to peer-reviewed academic articles in English during the period of 2000-2024. In total 19 articles were identified. After a review of articles 9 were excluded as being out of scope, for example wrong country or wrong topic. A total of 10 articles were seen to be relevant for the study. The articles identified are enclosed in Appendix 1.

### Data Analysis

Thematic case analysis (Creswell, 2013) was conducted for each country. After several readings of policy documents and selected articles statements were coded into categories to form descriptions and broad themes (Creswell, 2013).

1 The initial codes were deductively chosen from the aim of this study. The themes  
 2 which were identified across the cases were then identified inductively. In this  
 3 study, the researchers did the coding manually and individually. Following this,  
 4 categories based on themes emerging during the coding process were compared  
 5 and discussed.

## 8 Results

10 In the next section the findings from the three different cases will be  
 11 presented for the three countries. First the articles will be presented. Thereafter,  
 12 the three cases of Finland, Singapore and The Republic of Korea will be  
 13 presented.

### 15 The articles identified

17 In total some 10 articles were identified as relevant for the study. The  
 18 country, number of articles and references are illustrated in Table 2.

20 *Table 2. Articles identified per country*

Finland	3	Koskinen Sandberg, P. (2021); Nilsin, M., & Pesonen, H. (2019); Roponen, H., Fonsén, E., Ukkonen-Mikkola, T., & Ahtiainen, R. (2024).
Singapore	1	Yang, W., & Lim, S. (2023).
South Korea	5	Binnie, C. & Wedlock, J. (2022); Lee, J.-A., Kang, M.O., Park, B .J. (2019); Dos Santos, L.M. (2020).; Dos Santos, L.M. (2022). Santos, L.M.D. (2022).
Finland and South Korea	1	Kang, J., Kim, H., Lee, B., ... Viljaranta, J., & George, S. (2024).
Total	10	

21  
 22 In regard to the Finnish context, three articles were identified. Roponen et  
 23 al. (2024) examined the organizational structure of an early childhood education  
 24 center and how it affects roles and responsibilities. Finding that centralization  
 25 and decentralization are balanced, there is a lack of clarity in roles and decision-  
 26 making. A shortage of qualified teachers negatively impacts the organization.  
 27 Focusing on salaries, Koskinen Sandberg (2021) investigated the 2018 social  
 28 movement in Finland which emerged in response to wage suppression  
 29 agreements among municipalities despite a teacher shortage. movement called  
 30 for higher salaries. The case highlights how feminist activism and wage politics  
 31 can successfully question and change institutionalized practices in feminized  
 32 professions. Nilsin and Pesonen (2019) studied the relationship between self-  
 33 perceived competence, sense of belonging, and well-being among pre-service  
 34 and in-service special education teachers. The data revealed high engagement

1 and low to moderate burnout. The findings highlight the need for a deeper  
2 understanding of how teachers can better meet diverse needs, with practical  
3 implications for teacher education.

4 One article focused on the context of Singapore. Yang and Lim (2023)  
5 examine a non-profit childcare centre in Singapore that achieved emerging  
6 quality certification despite limited resources and a teacher shortage. Amid  
7 ongoing early childhood care and education policy reforms, the article explores  
8 how centre-based conditions affect teachers' distributed pedagogical leadership  
9 and community of practice development. Three key themes were identified: the  
10 impact of national workforce context, organizational culture and power  
11 dynamics, and the shaping of a shared pedagogical vision. The findings highlight  
12 the complexities of quality improvement in early childhood care and education  
13 and emphasize the importance of understanding teachers' lived experiences  
14 during reform.

15 Five articles were found in the South Korean context. Binnie and Wedlock  
16 (2011) explore the self-directed professional development (PD) of native  
17 English-speaking teachers (NESTs) in South Korea and whether their actions  
18 align with their beliefs. Using data from 56 questionnaires and 11 interviews  
19 showed that only 35 teachers engaged in self-directed PD in the past year.  
20 Barriers included lack of ambition, perceived need, limited career prospects, and  
21 the impact of COVID-19, concluding that the most NESTs did not engage in  
22 sufficient PD to enhance student learning outcomes.

23 Dos Santos (2022) explored the motivations and career decisions of native  
24 English teachers who chose to work in South Korea during the COVID-19  
25 pandemic, despite quarantine requirements. This article identified three key  
26 motivations: unique life experiences, ease of employment, and interest in Korean  
27 culture. Findings offer insights for school leaders and policymakers to better  
28 support foreign teachers and address long-term teacher shortages, especially as  
29 pandemic-related restrictions ease.

30 Santos (2022) reported on why foreign language university instructors  
31 choose to remain in South Korea for over 15 years at the same institution.  
32 Findings reveal that personal and financial considerations are key motivators for  
33 long-term career commitment. The article highlights the importance of  
34 supporting foreign teachers' professional development and addresses broader  
35 issues of teacher shortages, while emphasizing East Asia's appeal as a destination  
36 for international career growth.

37 Dos Santos (2020) investigated why foreign language teachers in Korea  
38 often leave after their first-year contract. Using the Model of Retention,  
39 Turnover, and Attrition, negative experiences with school environments,  
40 including discrimination, poor management, and disrespect from parents and  
41 students, were key aspects. The findings highlight the need for educational and  
42 HR reforms to improve support and retention of foreign teachers in Korea's  
43 education system.

44 Lee et al. (2019) examined motivations of 903 preservice teachers based on  
45 demographics. Findings showed differences between secondary and elementary  
46 preservice teachers in qualification fit, desire to teach, and task return. Male

1 teachers valued qualification fit and influencing others more than female  
2 teachers, while STEM majors valued these aspects higher than non-STEM  
3 majors. This article suggests that to improve teacher recruitment in countries  
4 facing shortages, policymakers should focus on enhancing task returns and  
5 benefits for teachers, based on these insights.

6 Finally, one of the studies identified was a comparative study between  
7 Finland and Korea. Kang et al (2024) explore and compare the motivations and  
8 perceptions of science preservice teachers in Finland and Korea, focusing on  
9 gender and subject differences. The results show that Korean PSTs have lower  
10 confidence and satisfaction in their career choice than Finnish PSTs. The article  
11 highlights the importance of prior science content study and the need to monitor  
12 preservice teachers' motivations, especially among females and non-biology  
13 majors, to support teacher recruitment and retention.

### 14 **The three county cases: Finland, Singapore and The Republic of Korea**

#### 15 **Finland**

16 Finland is a small country in the north of Europe with some 5.6 million  
17 inhabitants. Density 18.4/km<sup>2</sup>. In the capital, Helsinki, there are some 684,589  
18 inhabitants or about 12% of the total population. The total area of 338,145 km<sup>2</sup>.  
19 Finland is a parliamentary republic within the framework of a representative  
20 democracy. National spending on education in of the country's total GDP in  
21 2021 was 6.5 % (UNESCO, 2025) Most pre-tertiary education is arranged at the  
22 municipal level. Around 3 percent of students are enrolled in private schools  
23 (mostly specialist language and international schools). Formal education usually  
24 started at the age of 7. Primary school takes normally six years and lower  
25 secondary school three years. The curriculum is set by the Ministry of Education  
26 and Culture and the Education Board. Education is compulsory between the ages  
27 of 7 and 18. After lower secondary school, graduates may apply to trade schools  
28 or gymnasiums (upper secondary schools).

29 Finnish comprehensive school consists of nine years of basic education,  
30 divided into primary education (years 1–6) and lower secondary education (years  
31 7–9). In primary schools, class teachers typically teach the same group of pupils  
32 for several years. Often, some teachers specialise in the early learning phase  
33 (years 1–2), while others focus on teaching the remaining four year levels of  
34 primary education. Besides class teachers, primary schools usually employ a few  
35 subject teachers for language instruction. Lower secondary education follows  
36 the subject teacher model, although each class of pupils, approx. 25–30 pupils is  
37 assigned a teacher who acts as their coordinator. Primary and lower secondary  
38 phases are technically part of a unified comprehensive school, although in most  
39 cases, primary schools and lower secondary schools operate in different  
40 buildings and have their own headteachers. In most municipalities, there are  
41 more primary schools, which are also located closer to most pupils' homes than  
42 the fewer lower secondary schools (Malinen et al., 2012).

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## 1 **Teachers' working conditions**

2  
3 Finnish teachers' salaries are 85 % or more of salaries of similarly-educated  
4 workers (OECD (2018): Education at a Glance 2018.) In 2024 the starting salary  
5 for primary school teachers were just above OECD average on \$42 176, and for  
6 lower secondary school teachers \$45 306 cf. OECD average on \$43 484. After  
7 15 years of teaching the salary for primary school teachers were \$51 740 cf.  
8 OECD average on \$56 753, and for lower secondary school teachers \$55 579 cf.  
9 OECD average on \$58 596 (Table 3). Compared to OECD average Finnish  
10 teacher have about the same starting salary, but lower salary after 15 years of  
11 teaching.

12 In Finland there are 13 students per teacher in primary education, and 9  
13 students per teacher in lower secondary which is fewer than OECD average  
14 (Table 4) (OECD (2025): OECD, 2024). In Finland the group size is lower than  
15 in OECD average. In Finland primary and lower secondary schools consists of  
16 19 students per class, cf. OECD average on 21 resp. 23 student in each class  
17 (Table 5) (OECD (2024): Education at a Glance 2024).

18 Finland has an inclusive educational system for students with special  
19 educational needs and support is given in mainstream schools, as separate groups  
20 or with special support in the regular classroom, but also in special schools. For  
21 this they have employed special needs teachers and special needs assistants. For  
22 social difficulties at school, they have school health care services, student  
23 welfare officers, school psychologists, employed by local authorities. Employed  
24 school secretaries deal with office duties relating to school operations, such as  
25 different tasks related to pupil welfare services and staff administration. Staff  
26 who provide assistance to the teaching staff and students include, for example,  
27 IT support specialists, librarians and school attendants (Eurydice, 2025).

28 In Finland there is no specific legislation governing continuing teacher  
29 education and training. Teachers are obligated to participate in continuing  
30 professional development (CPD) training for one or five days a year according  
31 to the relevant statutes and collective agreements. Teachers have the right to  
32 participate in this obligatory training with full salary benefits. On the other hand,  
33 employers have the right to assign all full-time teachers to training. Employers  
34 also decide which training programmes and forms of education can be accepted  
35 as CPD training conforming to the collective agreement. The primary  
36 responsibility for CPD lies with the education providers, and local authorities  
37 support it within their financial limits and with financial support from the State  
38 (Eurydice, 2025).

39 Teachers job satisfaction is high in Finland. Teaching was the first-choice  
40 career for 59% of teachers compared to 67% in OECD. At least 66% of teachers  
41 in Finland cite that they joined the profession the because of the opportunity to  
42 influence children's development or contribute to society as a major motivation.  
43 97% of teachers in Finland agreeing that students and teachers usually get on  
44 well with each other in the classroom.

45 In Finland, only 14% of teachers report experiencing a lot of stress in their  
46 work, which is lower than the OECD average (18%). (OECD, 2025)



1 92 % of Finnish teachers feel that the advantages being a teacher clearly  
2 outweigh the disadvantages. (OECD, TALIS, 2018)

### 3 4 **Teacher training/education**

5  
6 Finnish teacher education is based on a five-year (bachelor + master) degree  
7 programme. In Finland there are different teacher education programs for  
8 primary-school class teachers and subject teachers which reflect the structure of  
9 the Finnish school system (Malinen et al. (2012). Teacher education differs  
10 according to the type of teacher. Requirements are mostly master degree level:  
11 ECEC teachers 180 ECTS, 3 years, class teachers 300 ECTS, 5 years, and subject  
12 teachers 300 ECTS, 5-6 years. Intake into Finnish teacher education 2022 was  
13 below 20 % of those who have applied (class teacher education) 10-50 %  
14 (subject teacher education) (Finnish National Agency of Education, 2023).  
15 Finnish PSTs usually spend half a year or more at school for the practicum (Kang  
16 et.al. 2024).

17 Top-performing school systems in the world recruit teacher students from  
18 the third top graduate of the cohort, Finland from the top 10%. Students are  
19 selected through two-phase entrance exams which emphasize, in addition to  
20 academic qualifications, the candidates' personal suitability and motivation for  
21 teacher's work (Malinen et al., 2012). The entrance exams include tests on  
22 literacy, vocabulary, numeracy, problem solving, strong interpersonal and  
23 communication skills, willingness to learn, and motivation to teach (McKinsley,  
24 2007).

25 There is no probationary period for new teachers in Finland. However,  
26 teachers who have completed a rigorous initial teacher education programme,  
27 which includes extensive practical teaching experience, are fully qualified to  
28 start teaching independently as soon as they obtain their certificate. They  
29 continue to receive support to learn the fundamentals of the profession during  
30 their first years (OECD, 2024). Graduates in Finland are eligible to apply for  
31 teaching positions in all Finnish schools upon successful completion of their  
32 master's degree. Nevertheless, it is quite challenging for fresh graduates to secure  
33 a permanent position immediately after graduation, especially in larger towns.  
34 Instead, graduates typically begin as substitute teachers or seek short-term  
35 teaching contracts for approximately 1–3 years after graduation (Kang et al.,  
36 2024).

### 37 38 **Teacher Status**

39  
40 The results from international tests (PISA, PIRLS, TIMMS) show that  
41 Finnish students have good test scores compared to OECD in average. Even  
42 though they have declined little since 2015, the results are still higher than  
43 OECD average which also have declined (see Table 6-10).

44 Finnish teachers feel highly valued in society. In Finland 58 % of the  
45 teachers believe that the teaching profession is valued by society, compared to  
46 26 % in OECD countries (OECD, TALIS, 2018). In Finland, the percentage of

1 teachers reporting that the teaching profession is valued in society has remained  
2 stable since 2013 (OECD, 2025).

### 3 4 **Teacher Shortage?**

5  
6 For a long time, primary school teacher education has been one of the most  
7 popular study programmes in Finland, typically attracting applicants with  
8 excellent secondary school diplomas. In recent years, the nationwide number of  
9 applicants for class teacher education programmes has been approximately 12  
10 applicants on each admitted student. The popularity of class teacher education is  
11 further illustrated by the large number of previously unsuccessful applicants who  
12 apply year after year for these programmes. Once students are admitted to class  
13 teacher education, they rarely drop out or transfer to other programmes. Another  
14 indication of class teacher students' commitment is their average graduation time  
15 of five years, which is shorter than in many other fields. It is also noteworthy  
16 that after graduation, teacher retention in the profession has been high compared  
17 to many other Western countries. It is estimated that only 10–15% of Finnish  
18 educators switch to other occupations during their entire career (Malinen et al.,  
19 2012). If Finland faces a teacher shortage, it will likely be in physics and  
20 chemistry (Kang et al., 2024).

### 21 22 **Singapore**

23 Singapore, in South Eastern Asia, with a total area of 735.6 km<sup>2</sup> has over 6  
24 million inhabitants. Singapore's population has grown from 1.8 million in 1965  
25 to 5.1 million in 2011. About 80 % lives in the capital city Singapore. It has the  
26 third highest population density of any country, 7,804/km<sup>2</sup>. Singapore is a  
27 parliamentary republic and its legal system is based on common law. It has been  
28 political stability in Singapore since its independence in 1965 under the leadership  
29 of the People's Action Party (PAP), the main political party in Singapore.

30 The Singapore brand of education and particularly its policymaking differs  
31 from that found in educational systems in other first-world, especially multi-  
32 party, Western democracies. In such Western democracies, general elections  
33 often lead to changes of governing party, with attendant and concomitant  
34 changes of educational values and ideology underpinning government policy. In  
35 contrast, educational policy in Singapore has been under the control of one  
36 political party (PAP) since 1965. Consequently, Singapore leadership and  
37 policymaking has become renowned for its consistency and coherence (Tan &  
38 Dimmock (2014). National spending on education in of the country's total GDP  
39 in 2022 was 2.2 % (UNESCO, 2025).

40 Education in Singapore is structured into three stages: primary, secondary,  
41 and pre-university education, with primary education being compulsory. Pupils  
42 start with six years of primary school, consisting of a four-year foundation course  
43 and a two-year orientation stage. After these six years, pupils take the Primary  
44 School Leaving Examination (PSLE), which determines their secondary school  
45 placement. Secondary school lasts between four and five years and is divided  
46 into Express, Normal (Academic), and Normal (Technical) streams, based on the

1 pupil's ability level. National examinations are standardised across all schools,  
2 with tests taken after each stage. Education at all levels is predominantly state-  
3 supported, and Singaporean schools are closely regulated by the Ministry of  
4 Education (MOE), traditionally known for its 'top-down, command and control'  
5 centralised system. All educational institutions, both public and private, must be  
6 registered with the MOE. Mainstream schools in Singapore follow a national  
7 academic curriculum where the MOE outlines the aims, goals, visions, and, most  
8 importantly, the learning outcomes (Lee & Ho, 2021).

### 9 10 **Teachers' working conditions**

11  
12 Compared to most other TALIS countries, Singapore has a high proportion  
13 of teachers, 72 %, who are satisfied with the salary they receive for their work  
14 (OECD, 2025).

15 In Singapore they had in 2023 a class size of 33.6 students in primary  
16 schools and 32.6 students in secondary schools (Table 5) which is much higher  
17 than OECD average. The number of students per teacher was, in 2023, 15.2 in  
18 primary school and 12.6 in secondary school, which is a little higher than OECD  
19 average (Table 4).

20 In Singapore there is both a system of inclusive education and separate  
21 special education schools. Children with mild special educational needs (SEN)  
22 are enrolled in mainstream schools as part of the Compulsory Education (CE)  
23 framework. As of December 2019, 80% of students with SEN are enrolled in  
24 mainstream schools (Lee & Ho, 2021). These students include those with  
25 learning difficulties such as dyslexia, ADHD, or Autism, physical and sensory  
26 impairments.

27 Government-funded Special Education (SPED) schools cater to pupils with  
28 moderate-to-severe Special Educational Needs (SEN). Their quality, accessibility,  
29 and affordability are top priorities, with extensive specialised support and  
30 training for life and work provided to students. To promote inclusivity among  
31 all pupils, there are various interactions between mainstream pupils and those  
32 with SEN.

33 Out of 32,000 employed teachers and school managers, 2,200 (14%) are  
34 allied educators who provide instructional support (Lee & Ho, 2021).

35 Teachers in Singapore have many opportunities to continually develop their  
36 professional skills and knowledge both individually and collectively as a team.  
37 The Academy of Singapore Teachers (AST), various academies, and language  
38 centres offer workshops conducted by Master Teachers or by teachers for their  
39 peers. In addition to workshops, which can be face-to-face, online, or blended,  
40 the AST supports schools in establishing professional learning communities.  
41 Most schools allocate weekly timetabled time during the curriculum for staff to  
42 participate in professional learning teams, where student learning and instructional  
43 matters are discussed. This aligns with a nationwide effort to enable Singaporeans  
44 to continue learning and upgrading their skills beyond formal education.  
45 International reviews of teacher quality and teaching in Singapore have

1 understandably been very positive (e.g., McKinsey and Company, 2007; MOE,  
2 2019).

3 Beyond pre-service training, the professional development of in-service  
4 teachers is a priority in Singapore. Teachers are encouraged to pursue  
5 postgraduate studies and attend various workshops and seminars to deepen their  
6 expertise. The government provides funding for teachers to attend workshops  
7 and conferences, as well as opportunities for collaborative learning through  
8 networks and communities of practice (Ngozi Elems-Ikwegbu, 2023).

9 One notable initiative in evaluating and enhancing teacher effectiveness is  
10 identifying teachers' strengths and areas for improvement to target professional  
11 development opportunities for each teacher. The effectiveness of Singapore's  
12 teachers is measured through various means, including student achievement  
13 scores, feedback from students and parents, and classroom observations.  
14 Teachers are expected to continually reflect on their practice and adjust based on  
15 feedback from their peers and supervisors. The government also conducts  
16 regular reviews of the education system to ensure it remains effective and  
17 relevant (Ngozi Elems-Ikwegbu, 2023).

18 In Singapore job satisfaction is high. Teaching was the first-choice career  
19 for 71% of teachers in Singapore compared to 67% in OECD countries  
20 participating in TALIS. 95% of teachers in Singapore claimed that they joined  
21 the profession because the opportunity to influence children's development or  
22 contribute to society as a major motivation (OECD, 2025).

23 The relations between students and teachers in the classroom are positive  
24 overall. 98% of teachers in Singapore agreeing that students and teachers usually  
25 get on well with each other. When it comes to principals, only 4% of them report  
26 regular acts of intimidation or bullying among their students, which is much  
27 lower than the OECD average of 14% (OECD, 2025).

### 28 29 **Teacher training/education**

30  
31 An education system is as good as its teachers, who are the ultimate  
32 implementers of any educational policy. In Singapore, quality is control by  
33 MOE, mainly through its recruitment and professional development of teachers.

34 As one of the top-performing school systems in the world, Singapore  
35 recruits teacher trainees from the top third of each Primary One cohort. This  
36 means that teachers are graduates with good 'A' level results or top-tier  
37 Polytechnic Diploma graduates. All applicants are interviewed by a panel of  
38 senior educationists, including senior principals.

39 Teachers in state-funded schools must hold a teaching qualification from the  
40 National Institute of Education (NIE). University graduates who decide to  
41 pursue teaching undergo 16 months of training at NIE, which includes 14 weeks  
42 of field experience or teaching practicum. Upon passing, they are awarded a  
43 Postgraduate Diploma in Education (PGDE) to teach at primary, secondary, or  
44 junior college levels. These levels are predetermined by the Ministry of  
45 Education (MOE) before the teacher enters NIE, as MOE determines teacher  
46 recruitment in terms of numbers, levels, and subject specialisations. Trainees are

1 typically prepared for two teaching domains and undertake numerous courses in  
2 educational psychology, language skills, classroom management, the use of ICT  
3 in teaching, home-school relations, and more. Teachers are trained by the  
4 National Institute of Education, which works closely with MOE to ensure that  
5 the training provided aligns with and supports major MOE policies (Lee & Ho,  
6 2021).

7 In Singapore, the National Institute of Education (NIE) plays a critical role  
8 in the initial training of future educators. NIE offers a Diploma in Education  
9 programme for primary school educators and a Bachelor of Arts/Science in  
10 Education for secondary school educators. Student-teachers are required to  
11 undergo teaching practicums to apply the theoretical concepts they acquire in the  
12 classroom context (Ngozi Elems-Ikwegbu, 2023). Upon completion of training,  
13 beginning teachers continue to be supported their first two years after graduation  
14 through the Beginning Teachers Learning Programme, led by the Academy of  
15 Singapore Teachers (AST) and various school-level structured mentoring  
16 programmes (Lee & Ho, 2021)."

17 In Singapore, the National Institute of Education (NIE) plays a critical role  
18 in the initial training of future educators. The NIE offers a Diploma in Education  
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22 classroom context (Ngozi Elems-Ikwegbu, 2023). Upon completion of training,  
23 beginning teachers (defined as the first two years after graduation) continue to  
24 be supported through the Beginning Teachers Learning Program helmed by the  
25 Academy of Singapore Teachers (AST) and various school-level structured  
26 mentoring programs (Lee & Ho, 2021).

27 There is a strong culture of mentoring and coaching among teachers, with  
28 experienced teachers often taking on the role of mentors for new teachers (Ngozi  
29 Elems-Ikwegbu, 2023). Singapore is unique in that pre-service teachers are  
30 considered employees of MOE, and thus are salaried, being at NIE implies being  
31 hired as a teacher without the need to "search" for employment after graduation  
32 (Lee & Ho, 2021).

### 33 34 **Teacher Status**

35  
36 Singapore students have performed at or near the top of international  
37 achievement tests in mathematics and science (PISA and TIMSS) for many  
38 years, justifying the system's rating as one of the best performing in the world  
39 (Table 6-9). Teacher professionalism in Singapore is greatly encouraged. There  
40 is also official recognition through award ceremonies (Lee, Y J., & Ho, J. 2021).

41  
42 In Singapore, 72% of teachers believe that their profession is valued in  
43 society, which is higher than the average across OECD countries and economies  
44 participating in TALIS. (26%). Between 2013 and 2018, the percentage of  
45 teachers in Singapore reporting that the teaching profession is valued in society  
46 also has increased by four percentage points (OECD, 2025).

## 1 **Teacher shortage and teacher supply**

2  
3 Teacher shortage and teacher supply do not appear to be an issue at present  
4 (OECD,2019b)

### 5 6 The Republic of Korea

7 Located in Southeastern Asia, Korea has more than 51 million inhabitants  
8 and a population density of 507/km<sup>2</sup>. About 50% in the capital city. Total area is  
9 100,363 km<sup>2</sup>. The political is a unitary presidential republic. National spending on  
10 education in the country's total GDP in 2021 was 4.9 % (UNESCO, 2025).

11 Regarding the school system, Korea a centralized administration in Korea  
12 oversees the process for the education of children from kindergarten to the third  
13 and final year of high school. The formal education system in Korea consists of  
14 elementary (6 years), secondary (3 years of middle; 3 years of high), and higher  
15 education (4 years). Although only six years of elementary and three years of  
16 middle school are compulsory, 96% of Korean students graduate from high  
17 school1 (Ministry of Education, 2016).

### 18 19 **Teachers' Working Conditions**

20  
21 Teachers in Korea have a lower starting salary of \$36 639 compared to  
22 \$43 000 OECD average, and a higher after 15 years of teaching \$64 699  
23 compared to \$43 000 OECD average (Table 3). Teachers in Korea have an actual  
24 salary compared to similarly educated workers.

25 In Korea, class sizes have been smaller since 2000 (Table 5). In 2000 there  
26 were 35.8% in Elementary school, 38% in Middle school, and 42.7% in High  
27 school In 2023 there were 20.7% in Elementary school, 24.6% in Middle school,  
28 and 22.9 % in High school, which is higher than the OECD average.

29 The number of students per teacher has also been lower (Table 4) In 2000  
30 there were 28.7% in Elementary school, 20.1% in Middle school, and 19.9%. in  
31 High school. In 2023 there were 13.3% in Elementary school, 11.6% in Middle  
32 school, and 9.8 % in High school, which is about OECD average (KEDI, 2024)

33 In Korea there is both an inclusive school system and special schools for  
34 students with special needs all with special needs teachers. Since 2000 the  
35 number for both has increased. 2023 there were 194 special schools with 11 094  
36 teachers, and 11 701 classes within general schools with 56 380 students (KEDI,  
37 2024).

38 There has been a rapid growth in Korean teachers' Continuous professional  
39 development (CPD) participation since 2000, and Korean teachers' CPD  
40 participation rate was higher (91.9%) than the average for OECD countries  
41 (88.5%). Korea also ranked second among 23 countries for the number of days  
42 (30.0) spent participating in CPD. These data reflect policymakers' increasing  
43 efforts to promote CPD and strengthen in-service teachers' professionalism in  
44 Korea (Lee et al. 2019). 13% of teachers in Korea report participating in  
45 collaborative professional learning at least once a month (OECD average 21%)

1 and 19% engage in team teaching with the same frequency (OECD average 28%)  
2 (OECD, 2025).

3 Teaching was the first-choice career for 80% of teachers in Korea and for  
4 67% in OECD countries and economies participating in TALIS. In terms of why  
5 they joined the profession, at least 80% of teachers in Korea cite the opportunity  
6 to influence children's development or contribute to society as a major  
7 motivation (OECD, 2025).

8 Korean teachers claim that the relations between students and teachers in the  
9 classroom are positive overall, with 94% of teachers in Korea agreeing that students  
10 and teachers usually get on well with each other. Non, 0%, of principals report  
11 regular acts of intimidation or bullying among their students, which is lower than  
12 the OECD average of 14% (OECD, 2025).

13 In Korea, 18% of teachers report experiencing stress in their work "a  
14 lot", which is the same as the OECD average (18%). But the proportion of primary  
15 education teachers for whom having too much administrative work is a source of  
16 stress in is especially low in Korea. (42.4 %) (OECD, 2025).

17

### 18 **Teacher training/education**

19

20 According to the Ministry of Education (2015) in Korea, there are 13  
21 elementary teacher education programmes in the country, and the majority of  
22 these programmes are highly centralised by the national and municipal/  
23 provincial governments. Secondary education is not as centralised as elementary  
24 education. Teacher education programmes offer very similar four-year courses,  
25 following nationally accredited curricular standards that prepare teacher  
26 candidates for licensure upon graduation. Upon admission to university,  
27 although many courses are offered as electives, students are encouraged to take  
28 courses with their cohort members to build cooperative relationships. After  
29 completing the required general education classes for two years, preservice  
30 teachers in both elementary and secondary programmes take courses for content-  
31 specific and pedagogic knowledge during their junior and senior years. Students  
32 in public teacher education programmes are mostly traditional college students  
33 aged 19–24, and are ethnically extremely homogeneous (Lee et al., 2019).  
34 Korean preschool teacher students have only four weeks of school practicum  
35 during their four years of study Furthermore, Korean teacher education requires  
36 a four-year bachelor's degree (Kang et al., 2024).

37 With one of the top-performing teacher recruitment systems in the world,  
38 Korea recruits the top 5% of each graduating cohort (McKinsey, 2007). To teach  
39 in a public school, teacher candidates must take an exam proctored by the  
40 provincial/metropolitan Offices of Education. Under the leadership of the  
41 Korean Institute for Curriculum and Evaluation (KICE), the provincial/  
42 metropolitan Offices of Education organised a consortium to develop the first-  
43 round written exams that assess teacher candidates' general knowledge in  
44 education as well as content/pedagogic knowledge. Each provincial/metropolitan  
45 Office of Education is responsible for the second round: in-depth individual  
46 interviews for teaching aptitudes, lesson planning, teaching demonstration, and

1 performance/lab as needed (KICE, 2016). The public school teacher exams are  
 2 extremely competitive. Although both public and private schools in all states and  
 3 metropolitan education offices use identical salary tables, public schools tend to  
 4 offer better benefits and working conditions (Lee et al., 2019).

5 Teacher education graduates in Korea need to apply for the national teacher  
 6 employment test if they want permanent teaching positions in the public school  
 7 sector. The competition is very high in Korea, although it varies depending on  
 8 the provincial areas (Kang et al., 2024). Teachers are required to renew their  
 9 teaching certificates every five to seven years to demonstrate that they are still  
 10 meeting performance standards. In Korea, teacher students are guaranteed a  
 11 teaching position in a school after completing their training before they enter the  
 12 course (Lee et al., 2019).

### 13 14 **Teacher Status**

15  
16 In national tests (PISA, TIMSS) Korean students' scores are highly above  
 17 OECD average. In TIMSS tests they have decreased the scores a bit for middle  
 18 class students since 2015, but they are still higher than OECD average, which  
 19 are illustrated in Table 6-10.

20 In Korea, 67% of teachers "agree" or "strongly agree" that their profession  
 21 is valued in society, which is higher than the average across OECD countries  
 22 (26%). This has remained stable since 2013 (OECD, 2025).

### 23 24 **Teacher Shortage?**

25  
26 Teacher shortage is not a concern in Korea. Although Korea shares an East  
 27 Asian, Confucian, collectivist culture with China (Lin et al., 2012), Korean  
 28 teachers possess unique socio-cultural and economic characteristics that attract  
 29 highly qualified individuals to teacher education programmes and the teaching  
 30 workforce (Lee et al., 2019). An oversupply of teacher candidates is a national  
 31 issue, particularly for secondary teacher candidates graduating from as many as  
 32 333 secondary education programmes. Oversupply is also a concern for  
 33 elementary teacher education programmes (Lee et al., 2019). However, there is  
 34 a gradual decline in the popularity of the teaching profession (Kang et al., 2024).  
 35 Of the 21 countries with available data, 18 reported facing teacher shortages at  
 36 the start of the 2022/23 academic year, with only Greece, Korea, and Türkiye  
 37 not reporting any shortages (OECD, 2024). In Korea, the teaching profession is  
 38 highly competitive due to the Confucian emphasis that affords teachers job  
 39 security and respect (Lee et al., 2019).

### 40 41 **Similarities and differences between the three county cases related to the** 42 **deducted themes on teacher shortage and teacher supply**

#### 43 44 **Working conditions**

45 Teachers' working conditions are claimed to be one predictor of teacher  
 46 shortage. In our study we have focused on salary, class size, student-teacher ratio



1 and working tasks compared to OECD average. A basic predictor is countries'  
 2 spending on education. To have in mind is below statistics on National spending  
 3 on education total % of GDP. In Finland for 2021, this was 6.5 %, in Korea for  
 4 2021, 4.9 % and in Singapore 2022, 2.2 %. These figures can be compared to  
 5 other international figures: World 2022, 3.8 %, OECD 2021, 5.0 %, Greece  
 6 2021, 4.1 %, USA 2021, 5.4 % and Sweden 2021, 7.6 % (UNESCO, 2025).  
 7 Increasing expenditure per student typically correlates with improved outcomes,  
 8 but only up to a point after which additional investment shows little impact on  
 9 performance. For instance, Japanese 15-year-olds' mathematics scores are  
 10 higher than those of their US peers, even though Japan spends about 30% less  
 11 per student aged 6 to 15 than the United States (OECD, 2024).

12 Teachers' salaries are also claimed to be a predictor of teacher salaries.  
 13 Increasing teachers' salaries or having a steeper ladder for salary increase in  
 14 relation to years working in the profession is often an argument for decreasing  
 15 teacher shortage. The salary for teachers in the countries studied, Singapore not  
 16 included, are shown in relation to OECD average is illustrated in Table 3.

17

18 *Table 3. Salary in USD per country and school level*

Country		Primary	Lower secondary
Finland	Starting	\$42 176	\$45 306
	15 years	\$51 740	\$55 579
Korea	Starting	\$36 639	\$36 639
	15 years	\$64 699	\$64 699
OECD average	Starting	\$42 062	\$43 484
	15 years	\$56 753	\$58 596

19

Source: (OECD, 2024)

20

21 Table 3. illustrates that the salary in studied countries of this study do not  
 22 differ much from OECD average.

23

24 Class sizes and student-teacher ratios are much-discussed aspects of  
 25 education and are among the determinants of the demand for teachers, along with  
 26 students' instruction time, teachers' working time and the division of teachers'  
 27 time between teaching and other duties. Together with teachers' salaries class  
 28 sizes and student-teacher ratios also have a considerable impact on the level of  
 29 current expenditure on education through teacher salary costs (OECD, 2024) as  
 30 illustrated in Table 4.

31

*Table 4. Student per teacher ratio*

Country	Primary	Lower secondary
Singapore	15,2	12,6
Finland	13	9
Korea	16	13
OECD average	14	13

32

(OECD, 2024, MOE, 2023)

33

1 Regarding class size Singapore is higher than the OECD average, while  
 2 Finland is lower than the OECD average and Korea in line with the OECD  
 3 average. This is illustrated in Table 5.

4  
 5 **Table 5.** *Class size*

Country	Primary	Lower secondary
<b>Singapore</b>	33.6	32.6
<b>Finland</b>	19	19
<b>Korea</b>	22	26
<b>OECD average.</b>	21	23

6 Source: (MOE, 2023; OECD, 2024)

7  
 8 In conclusion, smaller classes demand more teachers with less salary, larger  
 9 classes may lead to less teachers with higher salary, with the same fundings/budget  
 10 of the national spending on education.

11 Singapore, China, and South Korea are able to keep STRs low despite larger  
 12 than average class sizes probably because they teach fewer classes (lower hours  
 13 teaching). These countries also tend not to be affected significantly by a shortage of  
 14 qualified teachers. All of this suggests that, in isolation, class sizes and STRs may  
 15 not be good indicators of teacher shortages (Gorard, et al., 2024).

16 Teachers' tasks are, in the cases of this study, teaching students in groups/  
 17 classes. Students with special educational needs are taught by special teachers, either  
 18 in special schools or in special classes within mainstream schools. This differs  
 19 widely between countries world-wide but could be stated for the countries of this  
 20 study. Other employed support personnel to help teachers with tasks around students  
 21 and other school related issues are also to be found in the three countries studied.

22 Continuous professional development (CPD) programs are highly developed  
 23 and steered by the Minister of Education in the countries of this case study.

#### 24 Teacher training/-education and screening

25  
 26 Top-performing school systems in the world recruit teacher students from  
 27 the third top graduate of the cohort. Singapore (30%), Korea (5%) and Finland  
 28 (10%), all recruit their teacher students from the higher third of the cohort. Low-  
 29 performing school system rarely attracts the right people into teaching (the lower  
 30 third of the cohort). In the countries studied in this study it is found that all of  
 31 them identifying prospective teacher students' characteristics before entering the  
 32 teacher training by a screening process. The selecting system consists of both  
 33 written tests and interviews on: literacy, vocabulary, numeracy, problem solving  
 34 strong, interpersonal and communication skills, willingness to learn and  
 35 motivation to teach. Further, they are given support during their first years of  
 36 their profession, as well as processes to remove low-performing teachers from  
 37 the profession.

#### 38 Student performance and results

39  
 40 The ability of a school system to attract teachers may be linked to the status  
 41 of the profession. Good student learning performance to the general public's

1 view that teachers make a contribution to society, which in turn leads to high  
 2 status for the teaching profession. The tables below illustrate students'  
 3 performance and result, from the different tests from the the latest measurements.  
 4

5 *Table 6. PISA 2022 results*

	<b>Singapore</b>	<b>Korea</b>	<b>Finland</b>	<b>Means</b>
<b>Matematics</b>	575	527	484	472
<b>Reading</b>	543	515	490	476
<b>Science</b>	561	528	511	485

6

7 *Table 7. PISA 2018 results*

	<b>Singapore</b>	<b>Korea</b>	<b>Finland</b>	<b>Means</b>
<b>Matematics</b>	569	526	507	489
<b>Reading</b>	549	514	520	487
<b>Science</b>	551	519	522	489

8

9 *Table 8. PISA 2015 results*

	<b>Singapore</b>	<b>Korea</b>	<b>Finland</b>	<b>Means</b>
<b>Matematics</b>	564	524	511	490
<b>Reading</b>	535	517	526	493
<b>Science</b>	556	516	531	493

10

11 The following tables illustrate the TIMSS and PIRLS results (OECD 2023, 2019a,  
 12 2016).  
 13

14 *Table 9. TIMSS results*

	<b>Singapore</b>	<b>Korea</b>	<b>Finland</b>	
<b>2023 year 4</b>	615	594	529	
<b>2023 year 8</b>	605	596	504	
<b>2019 year 4</b>	625	600	532	
<b>2019 year 8</b>	616	607	509	
<b>2015 year 4</b>	618	608	535	
<b>2015 year 8</b>	621	606	-	

15 TIMSS (2024, 2020, 2016)

16

17 *Table 10. PIRLS results*

	<b>Singapore</b>	<b>Korea</b>	<b>Finland</b>	
<b>2021</b>	587	-	549	
<b>2016</b>	576	-	566	
<b>2011</b>	567	-	568	

18 PIRLS (2023, 2017, 2012)

19

1 In all international tests, PISA, TIMMS, PIRLS, students in Finland,  
2 Singapore, and Korea perform better than world average.

### 3 4 5 **Discussion**

6  
7 The overall aim with this study was to investigate aspects which characterize  
8 countries that lack teacher shortage through the study of three specific country  
9 cases. What are the characteristics for teacher shortage? The following research  
10 questions are posed 1) *Which aspects characterize countries lacking teacher*  
11 *shortage?* and 2) *What can we learn from countries without teacher shortage?*

12 The focus of this study was to investigate aspects related to teacher shortage.  
13 When investigating the number of articles, few were identified for the three  
14 countries. In this study, this result appears to support the idea that these countries  
15 lack teacher shortage at present. Thus, the identification of the countries as  
16 countries that lack teacher shortage appears is reflected in the result of the study  
17 with a low number of identified articles.

18 In this study, there does not appear to be a relation between investment in  
19 teacher education as an aspect which affects teacher supply. Instead, as the  
20 investments for three countries are similar. Therefore, on the one hand, it could  
21 argue that larger investments in school systems would not be an aspect to be  
22 considered in order to solve teacher shortage. On the other hand, it appears that  
23 student performance appears to have impact on teacher shortage as well STRs  
24 (OECD, 2019b). This may be the result of student performance on influencing  
25 teacher status and in turn on attractiveness of the profession and teacher status.

26 Limiting or controlling the places in teacher training in relation to supply is  
27 also important to the status of the profession. With no teacher shortage, the need  
28 of fewer teachers leads to better selection processes which leads to a more  
29 attractive and high-status profession. As noted in this study, the selection process  
30 in all these countries appear to be conducted using several different methods and  
31 taking account to several perspectives which appear to have impact on teacher  
32 status (OECD, 2019b; Education GPS; 2023).

33 Inevitably, it can be noted that in the three cases of Finland, Republic of  
34 Korea and Singapore that higher status for the teaching profession leads to less  
35 teacher shortage (Gorard et al., 2024; Mckinsley, 2017). Furthermore, there  
36 seem to be a link between less teacher shortage leading to higher status for the  
37 teachers and the teaching profession. However, it is also important to note the  
38 cultural and national differences in history, religion, philosophy, politics,  
39 governance between these countries for example contextual differences between  
40 Confusian East Asia compared to Western democracies. These differences must  
41 be acknowledged, as well as the complexities involved in comparing these  
42 countries.

43 Finally, teacher training and teacher education in a country is important for  
44 the status of the teaching profession as well as support for new teachers (Gorard  
45 et al. 2024; UNESCO, 2023). A low status teacher education leads to teaching a  
46 low status profession, working as a negative spiral which most likely will not

1 alleviate teacher shortage according to the intentions of policy (UNESCO 2024;  
2 OECD, 2109), Teacher status is seen as a loop in which higher teacher status  
3 leads to less shortage. The overall conclusion is that attracting and retaining  
4 teachers is multifaceted and complex and is the result of many interacting aspects  
5 in each specific country context.

## 8 **Conclusions and future research**

10 In conclusion, this study of three countries has highlighted some important  
11 aspects which may be related to teacher shortage. However, as noted,  
12 recommendations are difficult to make because the specific needs and structural  
13 realities of country contexts and educational systems are different. The results of  
14 this study may help different countries to better understand the importance of the  
15 status of the teaching profession and its underlying causes, to deal with teacher  
16 shortage in their own education system. Nevertheless, it appears that a key issue  
17 is qualified and competent teachers; as no educational system is better than the  
18 quality of its teachers.

19 Future research will be necessary to follow the development of these three  
20 countries in relation to teacher education, attractiveness, retention and  
21 retainment over time.

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1 **Appendix 1. Articles identified**

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