



European Expert Network
on Economics of Education

Evidence-based Solutions to Teacher Shortages

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Relevance

Teachers play a vital role in our societies by facilitating the process of students' learning and socialisation, and promoting critical thinking as well as civic engagement. Yet the teaching profession has experienced a decline in its appeal, attracting fewer young people and losing qualified teachers. In the European Union (EU), teacher shortages are a common issue, particularly in primary and secondary education, with more than half of Member States reporting an acute need for qualified teachers.

Teacher shortages can have significant social implications, with a higher rates of teacher turnover occurring in schools that have a high proportion of disadvantaged students (i.e. learners with low socio-economic status). The unequal distribution of teacher shortages, with disadvantaged schools being more severely affected, exacerbates educational inequality among students.

This report provides a targeted review of possible interventions that could be implemented to address the problem of not having enough qualified teachers to meet the demand for education in a particular region or subject area. Solving teacher shortages requires a comprehensive approach that addresses the multiple factors that contribute to the issue: (1) attracting people to the profession; (2) retaining teachers within the profession; and (3) improving teacher quality. Because teacher shortages are a complex issue, there is no 'silver bullet', and interventions are required at various levels, i.e. at the level of individual teachers, of schools, and at system level.

Teacher-level interventions

First, we recommend the use of targeted financial incentives, as these appear promising with respect to cost-effectiveness, especially in promoting the retention of teachers in areas of high need. Such incentives include bonuses, salary differentials and deferred retirement plans. Furthermore, financial incentives can be an effective tool to promote the retention of teachers in disadvantaged schools, and consequently to foster equity in education. On the basis of a high base of evidence, we rate financial incentives for teachers in disadvantaged schools and hard-to-staff subjects as being highly effective, at a medium level of cost. Conversely, we argue that financial incentives for retired teachers or career switchers are potentially less cost-effective, with only a medium-sized base of evidence.

Second, we recommend closing the salary gap between teachers and similarly educated workers. An across-the-board salary increase could be an effective policy measure to tackle teacher shortages by improving both the attractiveness of the profession and the retention of in-service teachers. However, while 'closing the salary gap with similarly tertiary-educated workers' is rated as being highly effective, it comes at a very high cost. In addition, across-the-board salary increases have the potential positive side effect of increasing diversity in the teaching profession

with respect to gender and ethnicity, as well as attracting more high-quality teachers by enhancing the profession's status. However, the evidence for these potential positive side effects is low.

Third, we recommend focusing on combined interventions, such as an across-the-board salary increase implemented together with a proportional increase in class sizes. The available evidence suggests that this would be a cost-effective way to increase the attractiveness of the teaching profession, while being budget-neutral. If this across-the-board salary increase were to attract higher-quality teachers, this would offset any small potential negative effects on students' learning that might result from larger class sizes.

Lastly, we recommend exploring the use of teaching assistants to reduce teachers' workload. Teaching assistants can carry out certain tasks at a similar level of quality to teachers, but at a lower cost. One particularly promising avenue to reduce teachers' workload while increasing educational quality is the provision of small-scale tutoring by less qualified teaching personnel.

School-level interventions

At school level, our first recommendation in this section is to implement longer induction and mentoring programmes, of at least two years. Induction programmes for new teachers lead to higher rates of teacher retention, faster professional development, and enhanced student learning outcomes. The most successful mentorship programmes are those that offer same-subject mentors, regular collaboration and external networking. In addition, providing mentor training and allowing partial release from regular duties can improve the teaching practice of new teachers through the provision of personalised coaching and support.

Second, we suggest that stimulating continuous professional development could be an effective means to increase teacher retention. Professional development activities should have a high content focus, involve active learning, have a sustained duration, include collective participation, and offer coherence and ownership. It also appears that teacher collaboration, e.g. through professional learning communities, can result in the increased retention of teachers.

System-level interventions

Our first recommendation at system level is the promotion of existing initial teacher education (ITE) programmes. ITE provides a valuable path into teaching, and the quality of ITE programmes contributes to the attractiveness of the teaching profession. Thus, in debating whether to professionalise or deregulate teacher education, countries should carefully consider the evidence and retention rates among ITE-educated teachers compared with those who receive training via an alternative route into teaching.

Second, countries facing teacher shortages could make use of alternative pathways to attract potential teachers, especially in areas of high need, as little difference can be discerned in terms student achievement between teachers who are traditionally trained, versus those who are trained via alternative routes. However, teachers who are trained via alternative pathways are more likely to leave their school, compared with traditionally trained teachers. To combat these higher attrition rates among alternatively trained teachers, recruitment and retaining incentives must therefore be balanced.

Third, we recommend improving the use of computer-assisted learning (CAL) in education. In conditions where there is adequate hardware and software, as well as professional teacher development and ongoing technical support, and where CAL is well integrated into the curriculum, its use can increase the efficiency of education by providing teachers with access to a wide range of educational resources and tools, and reducing their workload by automating administrative tasks. Although CAL can be beneficial in supporting student learning in situations where direct teacher instruction is unavailable, it should only be used as a temporary solution to address teacher shortages. This is because teachers have a critical role to play in promoting students' social and emotional development, as well as providing guidance and support that cannot be substituted using CAL.

Knowledge gaps

Overall, the report makes clear that there is an overall lack of evidence regarding some of the less obvious and potentially interesting solutions to the problem of teacher shortages. These include promoting the use of hybrid teachers, facilitating task differentiation, or introducing a multi-level career structure. Further research into the effectiveness of these approaches is needed. In line with recommendation of the European Commission report “Investing in our future: Quality investment in education and training” (2022), we suggest experimenting with these measures using small-scale, randomised controlled trials (RCTs), before implementing them on a larger scale.



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