

Deanery Digests are short, plain language summaries of the Department of Education's research outputs. This Deanery Digest is based on the following published research article: Thompson-Lee, S., See, B.H. & Klassen, R.M. A systematic review of STEM teacher recruitment and retention interventions. *IJ STEM Ed* 12, 33 (2025). <https://doi.org/10.1186/s40594-025-00550-6>

Specified Audience: Policy | School leaders

STEM teacher recruitment and retention: What works?

What is this research about and why is it important?

This study aimed to find and evaluate evidence-based research into strategies and approaches to increase STEM (Science, Technology, Engineering and Mathematics) teacher recruitment and retention. This is important as there is currently a global crisis in STEM teacher recruitment and retention. A lack of STEM teachers will likely have a negative effect on current STEM student attainment and the future STEM workforce. The main takeaway was that, despite being the most common approach, financial incentives do not appear effective for recruitment. We found very little robust evidence suggesting that commonly used approaches to increase the teacher workforce are successful.

What did we do?

- We searched using nine educational, psychological, and sociological electronic databases. Keywords included teacher recruitment, teacher retention, teacher attrition, and their synonyms, and science or STEM and their synonyms.
- We found 25 studies: 9 recruitment, 11 retention, 5 both.
- Most approaches used financial incentives (13/25), others included teacher education, and alternative pathways to teaching certification.
- We judged quality based on the study's design, how large it was, how many people dropped out, how the results were measured, and any other factors that could affect accuracy (e.g. conflict of interest).
- We categorised studies as focused on recruitment or retention and what type of strategy or approach they used.
- Approaches included: financial interventions (e.g. scholarships, bonuses, pay rises), alternative routes to certification (e.g. university courses vs. school-based training), and training support (e.g. mentoring).

What did we find?

- Financial incentives, such as scholarships, do not appear to be effective for recruitment although they were the most used incentive.
- There was some evidence that financial incentives, specifically bonuses, might work for retention (3 studies).
- Lack of robust research means that we cannot be certain about the effectiveness of most of the approaches and strategies. Most studies were in the USA, many collected a small amount of data (from a small number of people / schools), and many relied upon

participants' reported commitment to enter teaching rather than actual entry into the teacher workforce.

What does it all mean anyway?

- There is much argument about teacher pay and payment to train, and governments globally spend a lot of money on these approaches. However, there is very little robust evidence that they are successful in increasing, and maintaining, the teacher workforce.
- Evidence-based studies, with robust designs, need to be carried out to be confident about the best approach for teacher recruitment and retention.

Material, data, open access article: Open access paper available: <https://rdcu.be/e14T6>

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