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Editorial

Innovation in Teacher Education Practices

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Teacher education involves both global challenges and local innovation. We note persistent concerns about teacher recruitment and retention, pressures on workload, and the demands of equipping teachers with the skills to navigate complex digital learning environments. The following Special Issue of *Education Sciences* on Innovation in Teacher Education Practices brings together a diverse set of contributions that demonstrate how teacher education can respond creatively and critically to these challenges.

Several articles included in this collection highlight the transformative potential of digital technologies. For example, Dobečková and colleagues explore the integration of AI and Q methodology through online escape games in chemistry classrooms, offering insights into how playful, technology-rich learning environments can engage learners. Lejonberg et al. examine the role of video-based learning designs in developing teacher, mentor, and school leader competence, highlighting their potential to support authentic professional learning. The findings of these studies demonstrate how digital tools can prompt innovative pedagogies and professional growth.

A second strand of the issue addresses teacher education policy and structure. Within this strand, Dawborn-Gundlach analyses alternative pathways to teacher qualifications in Australia, suggesting diversification as a response to workforce shortages and a reconfiguration of the profession itself. In the English context, Quickfall and Wood consider the 'perfect storm' of workload, leadership, and research demands facing teacher educators in universities, raising important questions about sustainability and professional identity within initial teacher education.

The authors of the other contributions focus on relational themes related to teaching and teacher education. Botha, du Toit-Brits, and Blignaut advocate for the centrality of self-directed learning, emphasising the teacher's role in creating supportive conditions for learners' autonomy. Miralles-Sánchez, Rodríguez-Medina, and Gómez-Carrasco analyse teacher discourse and its relationship with the development of critical thinking skills in history classrooms, identifying how subject-specific pedagogies can shape broader educational aims.

The social and ethical responsibilities of teacher education also feature prominently. González-Doğan and colleagues draw attention to the needs of refugee students and the role of boundary-spanning professionals in supporting their educational journeys, calling for greater recognition of the Funds of Knowledge that learners bring from their life experiences. Caldwell, Whewell, West, and Tiplady, in their transnational Digital Learning Across Boundaries project, illustrate how novel digital and physical spaces can act as catalysts for transformative learning and identity formation, preparing future teachers to become changemakers. Lastly, Eirín-Nemiña and collaborators investigate the preconceptions of undergraduate students about physical education, demonstrating the importance of engaging with prior beliefs as a foundation for teacher development.

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Received: 8 October 2025
Accepted: 13 November 2025
Published: 18 November 2025

Citation: Whewell, E., & Caldwell, H. (2025). Innovation in Teacher Education Practices. *Education Sciences*, *15*(11), 1554. https://doi.org/10.3390/educsci15111554

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Taken together, these articles show a rich diversity of innovation in current teacher education practices that span digital technologies, alternative routes, professional learning designs, subject pedagogies, and socially responsive approaches. What unites them is a commitment to rethinking how teachers are prepared and supported in today's evolving educational contexts.

We hope that readers of this special issue will find inspiration and provocation in these contributions. They challenge us to reconsider how teacher education can encourage us to be adaptive by keeping sight of human relationships and by embracing diversity and inclusion. As teacher education continues to evolve, it is through such innovative practices and critical reflections that we can shape futures that are equitable and full of possibility. We hope that this edition helps us reimagine our purpose.

Conflicts of Interest: The authors declare no conflict of interest.

List of Contributions

1. Botha, A., du Toit-Brits, C., & Blignaut, J. H. (2025). Charting new pathways: Unleashing the potential of self-directed learning and the transformative role of teachers in education. *Education Sciences*, *15*(5), 524. https://doi.org/10.3390/educsci15050524.
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9. Quickfall, A., & Wood, P. (2025). The perfect storm for teacher education research in English universities: The tensions of workload, expectations from leadership and research. *Education Sciences*, *15*(4), 434. https://doi.org/10.3390/educsci15040434.

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