

Emotional Dimensions of Professionalisation: Mapping Future Teacher Anxiety

Dimensioni emotive della professionalizzazione: una mappatura dell'ansia dei futuri insegnanti

Savannah Olivia Mercer, University of Palermo.

Romj Orofino, University of Palermo.

ABSTRACT ITALIANO

Questo studio esamina le dimensioni emotive della professionalizzazione tra gli studenti del primo anno di Scienze della Formazione Primaria. L'ingresso nella professione docente implica non solo l'acquisizione di conoscenze pedagogiche, ma anche lo sviluppo di competenze emotive e relazionali che favoriscono il benessere e la costruzione dell'identità professionale. Sono state mappate le emozioni di 122 futuri insegnanti utilizzando il Future Teacher Anxiety Questionnaire (FTAQ). Sono state condotte analisi descrittive, calcolati indici di affidabilità e profili basati sui percentili per individuare le aree di maggiore ansia. I risultati evidenziano l'importanza di integrare la preparazione emotiva nella formazione degli insegnanti. Riconoscere e sostenere l'ansia nelle fasi iniziali del percorso formativo può promuovere la consapevolezza di sé, la resilienza e una professionalizzazione più sostenibile per i futuri educatori.

ENGLISH ABSTRACT

This study examines the emotional dimensions of professionalisation among first-year pre-service primary education students. Entering the teaching profession involves not only acquiring pedagogical knowledge but also developing emotional and relational competencies that foster positive well-being and professional identity. We map the emotions of 122 pre-service teachers using the Future Teacher Anxiety Questionnaire (FTAQ). Descriptive analyses, reliability indices, and percentile-based profiles were calculated to identify domains of heightened anxiety. Results highlight the importance of addressing emotional preparedness as part of teacher education. Recognising and supporting anxiety in early training can foster self-awareness, resilience, and a more sustainable professional formation for future educators.

Introduction

Professionalisation in education extends beyond the acquisition of disciplinary and pedagogical knowledge; it encompasses the development of emotional, relational, and ethical competencies that allow future teachers to embody the values of the profession. In contemporary contexts, marked by digital transformation and increasing accountability, this process is undergoing significant redefinition. The teaching profession is no longer confined to the transmission of knowledge, but increasingly involves navigating complex emotional landscapes, managing visibility through digital platforms, and sustaining well-being in highly mediated learning environments.

Autore per la Corrispondenza: Savannah Olivia Mercer, University of Palermo; Romj Orofino, University of Palermo.

E-mail: savannaholivia.mercer@unipa.it; romj.orofino@unipa.it

Becoming a professional teacher, therefore, includes cultivating emotional literacy, resilience, and reflective qualities that foster professionalism in a human-centred understanding of education rather than in purely technical performance. Within this framework, teacher education institutions play a central role in supporting the emotional professionalisation of future teachers.

The current study situates itself within the discourse on new processes of professionalisation for education professionals, focusing on the emotional experiences of first-year pre-service primary education students. Specifically, it explores the patterns of teaching-related anxiety among students entering the profession at a time of accelerated digitalisation and intensified scrutiny of pedagogical performance. Teaching-related anxiety, once viewed mainly as an individual psychological concern, can be reconsidered as a key dimension of the professionalisation process, a reflection of how future teachers negotiate expectations, uncertainty, and identity during their formative years. It can be understood as part of the formation of professional agency, where pre-service teachers learn to negotiate the ethical, relational, and pedagogical responsibilities inherent in the role.

The present study profiles the teaching-related anxiety of 122 first-year pre-service primary education students using the Future Teacher Anxiety Questionnaire (FTAQ; Mercer et al., 2025). By identifying which domains of teaching evoke the highest levels of anxiety and interpreting these patterns within the framework of professionalisation, the research aims to contribute to the ongoing pedagogical conversation on emotional readiness and the formation of professional identities in teacher training programmes. It highlights how, within the digital era, emotional literacy must be recognised as a critical dimension of professional formation, as necessary as technological competence or pedagogical knowledge. Recognising and supporting anxiety in early training can thus be seen not as a sign of weakness but as part of the reflective, ethical, and relational growth that defines what it means to become a teacher today.

Theoretical Framework

Teacher education increasingly recognises professionalisation as a multidimensional process that extends beyond the acquisition of pedagogical knowledge to include the cultivation of ethical, relational, and reflective capacities. From this perspective, the development of professional identity involves learning to integrate teaching skills and theoretical knowledge with responsibility and self-awareness. Within this process, early experiences of uncertainty or self-doubt can be interpreted as natural stages in the formation of a professional identity, rather than as deficiencies. These experiences reveal where students encounter the implicit standards that define the professional culture of teaching. When appropriately supported, such moments of tension can foster critical reflection and strengthen professional agency. Conversely, when left unaddressed, they may hinder confidence, autonomy, and engagement with the professional community. Effective teacher education thus views professionalisation as both a cognitive and formative process, and one that requires mentoring and structured reflection to help future teachers translate theoretical knowledge into professional competence and ethical practice.

In the process of university training and professionalisation of future teachers, the massive introduction of educational technologies has generated, alongside new opportunities, also widespread forms of anxiety and professional insecurity. However, this phenomenon cannot be understood exclusively as a reaction to technical tools; rather, it represents a profound transformation in the professional identity and role expectations of the teachers themselves within this modern context (Avidov-Ungar & Forkosh-Baruch, 2018). The traditional conception of the teacher as the primary source of knowledge has shifted to a more complex role that includes being a facilitator in navigating digital learning environments. This transformation requires teachers not only to acquire technical skills, but also to reconceptualise their professional self-understanding and pedagogical goals fundamentally. Research indicates that the professional identity of teacher educators encompasses multiple dimensions, including disciplinary competence, pedagogical knowledge, ethical and emotional aspects, and teaching competencies, all of which are contextualised in the digital age (Beijaard et al., 2000; Tsybulsky & Levin, 2019). The integration of these dimensions becomes particularly challenging when digital technologies introduce new expectations and responsibilities that may conflict with established professional self-conceptions.

Recent studies demonstrate that many students of Primary Education Science courses perceive a gap between the digital skills required and those acquired in university courses. This fuels feelings of inadequacy and "techno-anxiety" (Görtl et al., 2025; Yang et al., 2025). This condition is not only a technical problem, but an anthropological and educational one: when the teacher does not feel competent, their ability to establish a serene and authentic relationship with the student is weakened. However, it is essential to distinguish between techno-anxiety, a specific form of anxiety related to the use of technology, and the broader phenomenon of occupational anxiety that characterises the teaching profession. Teacher anxiety related to technological change represents a distinct phenomenon that impacts the effective integration of technology in the classroom (Henderson & Corry, 2021). General occupational anxiety, by contrast, encompasses the broader existential and relational concerns that characterise the teaching profession: anxiety about one's ability to connect with students, uncertainty about pedagogical effectiveness, concerns about classroom management, and the burden of responsibility for student learning and well-being. This form of anxiety has deep roots in the relational and ethical dimensions of teaching, regardless of technological considerations. While techno-anxiety is conceptually relevant, it is not directly measured by the Future Teacher Anxiety Questionnaire utilised within this study. Nevertheless, recognising its role highlights how digitalisation reshapes teaching roles, expectations, and professional self-conception, requiring teachers to integrate technical, relational, and pedagogical competences simultaneously.

In the framework of a pedagogical-personalist perspective, the professionalisation of the teacher cannot be understood as a simple transfer of operational skills. On the contrary, it must be configured as an integrated process that promotes the personal and relational growth of the teacher, supporting them in the conscious adoption of modern educational approaches and counteracting defensive or mechanical approaches in teaching. Anxiety thus becomes a signal to be read in a formative key: it expresses the

need for reflexivity and training that combines technical competence, professional identity and personal well-being (Dreer-Goethe, 2023). This requires that teacher training programs go beyond the transmission of knowledge via modern methods and tools, offering spaces for reflection, emotional support and mentoring paths that recognise the teacher as a whole person navigating complex professional demands.

The professional well-being of the teacher is an essential condition for the quality of the educational relationship. When anxiety related to the use of new tools or the burden of responsibility becomes predominant, the teacher tends to enter a defensive mode: they become rigid towards the students, focus on control, and lose the empathic availability necessary for effective education. Recent literature shows that high levels of stress and anxiety related to adopting modern approaches reduce the perception of self-efficacy and negatively affect the classroom climate and affective engagement with students (Pressley, 2021; Ozturk et al., 2024). Adopting a personalist perspective, the teacher's well-being cannot be understood as a simple absence of stress, but as the possibility of living one's own human, professional and relational dimensions in an integrated way. In this vision, well-being becomes an ethical principle of the educational relationship: it is in the serenity of the adult that the learner's freedom to learn is rooted.

Research Questions

The present study seeks to address three guiding questions:

- What domains of teaching evoke the highest anxiety among first-year pre-service teachers?
- How can patterns of teaching-related anxiety be interpreted as indicators of the early stages of professionalisation in teacher education?
- In what ways do domains of teaching anxiety shape the emotional dimensions of professionalisation among future teachers?

Methodology

Participants

The study involved 122 pre-service teachers enrolled in the first year of the primary education sciences degree at the University of Palermo. Participants were recruited through convenience sampling, being invited to complete the questionnaire during a lecture. Students were in the first semester of their first year, ensuring a representative snapshot of students at the earliest stage of professional formation. At this stage of their studies, participants had limited classroom experience and were beginning to develop their pedagogical identities. Their responses, therefore, provide insight into the initial affective landscape of future teachers before significant professional socialisation occurs. Inclusion criteria, therefore, were enrolment in the first year of the Primary Education Sciences programme, attendance in the first academic semester, and the absence of extensive prior teaching experience, to capture anxiety at the earliest stage of professional identity formation. The sample comprised 92.6% female and 5.7% male participants (with 1.6% preferring not to disclose), of which 91% were aged between 18-24 years, 4.9%

between 25-34 years, 2.5% between 35-44 years, and the remaining 0.8% between 45-54 years. Age and gender differences in anxiety were explored descriptively, although the small number of male participants and participants above the age of 25 limits generalisability. Ethical approval was granted and it was made clear to participants that participation was voluntary, anonymous, and conducted in accordance with institutional ethical guidelines.

Instrument

Future teachers' anxieties can encompass relational, ethical, and adaptive dimensions, including the challenge of integrating new strategies or tools into classroom practice. Data were collected using Mercer et al.'s (2025) Future Teacher Anxiety Questionnaire (FTAQ), a self-report instrument designed to measure teaching-related anxieties among pre-service teachers. The FTAQ consists of 32 items across six subscales: Classroom Confidence and Student Engagement Anxiety (CCSE), Workload Stress (WLS), Anxiety about Performance and Assessments (PA), Emotional and Physical Manifestations of Anxiety and Stress (EPM), Bureaucratic and Precarious Stress (BPS), and Interpersonal Relationships in the Workplace (IR). The CCSE subscale addresses classroom management and student rapport, with items such as: "I am afraid I won't be able to build a good rapport with my students" and "I feel nervous at the thought of trying new teaching strategies or technologies". The WLS subscale focuses on workload and work-life balance, including items like: "I feel overwhelmed thinking about how I will balance lesson planning, grading, and other tasks," and "I feel stressed thinking about how I will balance my teaching responsibilities with my personal life". The PA subscale pertains to anxiety around performance and assessments, with items such as: "I feel anxious about being observed by supervisors or colleagues while teaching". The EPM subscale covers the physical signs of anxiety and includes statements like: "I often experience physical symptoms (e.g., sweating, trembling, fast heartbeat) while preparing for or teaching lessons". The BPS subscale focuses on bureaucratic and administrative stress, with items such as: "I feel that the bureaucratic processes required by the school will interfere with my ability to focus on teaching," and "I worry about the uncertainty of my teaching position". The IR subscale assesses the importance of workplace relationships and includes items such as: "I feel nervous about how my interactions with colleagues may affect my professional development". Each item is rated on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree), with higher scores indicating greater levels of anxiety. Total mean scores can be calculated for each subscale, as well as the total sum and mean for the overall scale. The instrument has demonstrated good psychometric properties in prior studies (Mercer et al., 2025; Mercer & Falzone, 2025), with Cronbach's α coefficients exceeding .80 for total and subscales. In the current sample, internal consistency and dimensionality were re-evaluated using Cronbach's α and McDonald's ω (Hayes & Coutts, 2020; Trizano Hermosilla & Alvarado, 2016) for each subscale and the total score.

Procedure

The questionnaire was administered through Google Forms during a lesson at the beginning of the academic year, after students had received a short explanation of the study's aims and confidentiality procedures. Participation was voluntary, with informed consent obtained at the start of the online questionnaire. No identifying information was collected. Data collection occurred before participants engaged in extensive teaching practice to capture baseline emotional dispositions toward the profession.

Data Analysis

All analyses were conducted using Jamovi (version 2.5.7). The dataset was screened for missing values, outliers, and normality. Of the 122 collected questionnaires, a small proportion of item-level data were missing (between one and three cases per subscale, representing less than 5% overall). Because missingness appeared random and minimal, no imputation procedures were applied. Subscale scores were computed as the mean of constituent items using pairwise deletion, meaning that means were calculated from available responses when one or more items were missing. Descriptive statistics (mean, standard deviation, skewness, and kurtosis) were calculated to summarise the distribution of anxiety scores across subscales. Reliability was assessed using Cronbach's α and McDonald's ω to determine internal consistency for each subscale and the total FTAQ. Percentile-based profiling was then used to categorise students into low (≤ 25 th percentile), moderate (26th–74th percentile), and high (≥ 75 th percentile) anxiety groups, allowing for the identification of domains of heightened emotional concern. Given the exploratory aim of mapping early professional anxiety in a first-year cohort, descriptive statistics were deemed appropriate to provide an initial overview of anxiety domains before hypothesis-testing. Percentile-based profiles were used to identify relative areas of heightened concern within the cohort rather than to make generalisable claims.

Results

Descriptive analyses were conducted for all six subscales of the Future Teacher Anxiety Questionnaire (FTAQ), as well as for the total and mean FTAQ scores (Table 1). As shown in Table 1, mean subscale scores ranged between $M = 2.05$ and $M = 2.86$, indicating moderate levels of teaching-related anxiety among first-year pre-service teachers. The highest levels of anxiety were reported for Performance and Assessment Anxiety ($M = 2.86$, $SD = 1.11$) and Classroom Confidence and Student Engagement ($M = 2.57$, $SD = 0.73$), whereas the lowest mean was observed for Emotional and Physical Manifestations of Stress ($M = 2.05$, $SD = 0.77$). Total FTAQ scores ranged from 32 to 140 ($M = 76.2$, $SD = 20.6$), corresponding to a mean FTAQ of $M = 2.39$ ($SD = 0.65$). Distributions were approximately normal, with small positive skewness and minimal kurtosis across the subscales, supporting the assumption of the absence of large departures from normality.

TAB. 1: DESCRIPTIVES

	CCSE	WLS	PA	EPM	BPS	IR	Sum FTAQ	Mean FTAQ
N	122	122	122	122	122	122	122	122
Missing	0	0	0	0	0	0	0	0
Mean	2,57	2,15	2,86	2,05	2,40	2,45	76,2	2,39
Standard deviation	0,728	0,810	1,11	0,766	0,833	1,04	20,6	0,651
Minimum	1,00	1,00	1,00	1,00	1,00	1,00	32,0	1,00
Maximum	4,22	4,20	5,00	4,83	5,00	5,00	140	4,38
Skewness	0,0369	0,441	0,176	1,20	0,516	0,626	0,158	0,174
Std. error skewness	0,219	0,219	0,219	0,219	0,219	0,219	0,219	0,219
Kurtosis	-0,505	-0,460	-0,895	1,61	0,203	-0,305	-0,00605	-0,0309
Std. error kurtosis	0,435	0,435	0,435	0,435	0,435	0,435	0,435	0,435

Note. CCSE = Classroom Confidence and Student Engagement; WLS = Workload Stress; PA = Performance and Assessment Anxiety; EPM = Emotional and Physical Manifestations; BPS = Bureaucratic and Precarious Stress; IR = Interpersonal Relationships. All subscale scores represent means on a 5-point Likert scale (1=strongly disagree; 5=strongly agree).

Looking at the reliability analysis, internal consistency calculations indicated strong reliability for all FTAQ subscales. Cronbach's α and McDonald's ω ranged from 0.818–0.866 across subscales, with the highest reliability observed for Bureaucratic and Precarious Stress ($\alpha = 0.864$, $\omega = 0.874$). The full 32-item scale demonstrated excellent internal consistency ($\alpha = 0.939$, $\omega = 0.940$), confirming that the instrument provides a stable and coherent measure of teaching-related anxiety domains.

Percentile thresholds (Table 2) were calculated to provide a descriptive profile of low (≤ 25 th percentile), moderate (26th–74th percentile), and high (≥ 75 th percentile) anxiety levels within the sample. For the total sum FTAQ, scores below 63.3 corresponded to low anxiety, 63.4–91.0 to moderate anxiety, and above 91.0 to high anxiety. This aligned with the mean FTAQ scores, in which means below 1.98 corresponded to low anxiety, means of 1.99–2.87 to moderate anxiety, and scores above 2.87 to high anxiety. Subscale distributions revealed similar gradations: for instance, Performance and Assessment Anxiety (PA) showed a 25th–75th range from 2.00–3.67, while Classroom Confidence and Student Engagement (CCSE) ranged from 2.00–3.08. These profiles provide a baseline for interpreting pre-service teachers' affective readiness and identifying areas where anxiety is more significant. Percentile distributions showed that PA and CCSE had the highest upper-quartile thresholds, indicating that these were the most prominent domains of concern among participants.

TAB. 2: PERCENTILES

	CCSE	WLS	PA	EPM	BPS	IR	Sum FTAQ	Mean FTAQ
25 th percentile	2,00	1,40	2,00	1,50	1,83	1,67	63,3	1,98
50 th percentile	2,56	2,20	2,67	2,00	2,33	2,33	74,0	2,32
75 th percentile	3,08	2,60	3,67	2,38	2,96	3,00	91,0	2,87

Descriptive analyses by gender indicated that female participants had slightly higher mean FTAQ total scores ($M = 2.40$, $SD = 0.64$) than male participants ($M = 2.32$, $SD = 0.88$). Due to the small male sample ($n = 7$), these comparisons are presented descriptively rather than inferentially. Furthermore, analyses by age group showed that mean total FTAQ scores were generally similar, but highest among participants aged 35-44 ($M = 3.00$, $SD = 0.80$) and slightly lower in other age groups. Again, due to small subsample sizes in older age groups, these patterns should be interpreted with caution. Future research with larger, more demographically balanced samples would enable systematic examination of how gender and age moderate teaching-related anxiety during initial professional formation.

Overall, the descriptive, reliability, and percentile analyses reveal a consistent pattern of moderate anxiety focused on performance and evaluation anxiety, and classroom confidence. These findings suggest that the emotional landscape of early teacher formation is shaped largely by perceived demands of performance and assessment.

Discussion

The present study examined the early stages of pre-service teachers' professionalisation, revealing how first-year students begin to internalise and respond to the expectations of the teaching profession. The findings show that the highest levels of concern relate to performance, assessment, and classroom confidence, domains that correspond to the core areas in which professional competence is publicly demonstrated and evaluated. Notably, items that reference the implementation of new teaching strategies or technologies fall within the broader Classroom Confidence and Student Engagement domain, highlighting that the anxiety associated with professional responsibility can extend to adopting new pedagogical approaches. This underscores that pre-service teachers' concerns are not only about relational or evaluative aspects, but also about their readiness to experiment, adapt, and integrate novel teaching methods in their practice, particularly within the digital era. These patterns suggest that, from the outset of their training, students are engaged in a process of negotiating what it means to be a "professional teacher," interpreting institutional and social expectations through their own emerging sense of professional identity. The prominence of performance-related anxieties reflects the contemporary configuration of professionalisation in education, where teaching is increasingly visible, measurable, and mediated by digital systems of evaluation. In this context, professional growth involves not only the acquisition of pedagogical knowledge and technical skills

but also the capacity to navigate accountability, adaptability, and self-presentation within complex institutional frameworks.

These findings are consistent with international research highlighting performance-related concerns and classroom confidence as central sources of anxiety among pre-service teachers in the early phases of training (Pillen et al., 2013; Pressley, 2021). Similar studies conducted in different educational contexts have shown that anxiety tends to concentrate around moments of evaluation, observation, and direct interaction with students, suggesting that such concerns are not merely individual but are structurally embedded in contemporary models of teacher professionalisation.

From a pedagogical perspective, the prominence of performance and classroom-related anxiety can be interpreted as an indicator of how early professional identity is shaped by institutional expectations and implicit norms of teaching competence. These forms of anxiety do not simply reflect emotional fragility but signal areas in which pre-service teachers are negotiating responsibility, authority, and relational positioning within the educational role. Recognising anxiety as a formative dimension of professionalisation allows teacher education programmes to interpret these emotional responses as opportunities for reflective learning rather than as obstacles to professional development. Uncertainty is not a deficit, but a real pedagogical fact of the educational process: professionalism is not inherited but is generated in the living practice of the school (Pillen et al., 2013).

In this perspective, professional maturation does not coincide with the accumulation of techniques, nor with the passive imitation of consolidated routines, but with the ability to transform experience into pedagogical knowledge through reflection, comparison and investigation of one's own practices (Weiβ et al., 2023). The teacher's identity is consolidated when the teacher recognizes their teaching action, in its entirety, as an intentional process oriented towards the growth of students and not as the sum of services or formal obligations (Shand, 2023). The act of teaching becomes generative when it is rooted in a conscious educational posture, capable of giving meaning, of reformulating one's work and of producing shareable professional knowledge, and when the practice itself becomes a place of research and a continuous source of professional learning.

Limitations and future research directions

Although the present study offers valuable insight into the affective experiences of pre-service teachers, some limitations should be acknowledged. Although general themes can be interpreted, the use of a convenience sample from a single institution in one country partially limits the generalisability of findings beyond the Italian context. Future research could replicate the study across multiple education programmes and cultural settings to enhance external validity. Although the cohort was predominantly female, observed patterns of teaching-related anxiety appear consistent across genders. However, future research with more balanced gender representation is needed to explore potential gender differences in early professionalisation and emotional experiences. Furthermore, self-report measures, though valuable for assessing perceived emotion, are subject to social desirability and introspective bias. Future studies could integrate mixed-methods

approaches, combining psychometric tools with qualitative reflections, physiological indicators, or digital emotion-tracking analytics to deepen the interpretive scope. Furthermore, the FTAQ, although demonstrating strong reliability, should continue to be refined and validated across larger and diverse populations to ensure its robustness as a measure of future teacher anxiety. Additionally, while the theoretical framework discusses techno-anxiety as part of the contemporary professionalisation context, the FTAQ does not isolate technology-specific anxiety as a distinct construct. Future research should employ instruments specifically designed to measure techno-anxiety alongside general professional anxiety to examine their distinct and overlapping contributions to early teacher formation. From a broader perspective, these results suggest that educational policies should recognise emotional preparedness as a core component of teacher professionalisation, particularly in the initial stages of training. Future research should extend this exploratory work through longitudinal and multi-site designs, the inclusion of contextual variables, and mixed-method approaches capable of capturing the evolving emotional landscape of teacher development across time and institutional contexts.

Conclusion

This study provides an initial mapping of future teacher anxiety within the context of digital-era teacher education. The results reveal moderate and multifaceted anxiety levels among first-year pre-service teachers, particularly concerning performance evaluation and classroom confidence. These findings underscore the emotional complexity embedded in early professional identity formation and highlight the need for teacher education programmes to embed affective support alongside pedagogical and technological training. These findings suggest several preliminary directions for teacher education programs. First, structured mentoring programs pairing first-year students with experienced teachers could help normalise performance anxiety and model reflective practice. Secondly, reflective seminars providing space to discuss anxiety as a normal part of professionalisation, rather than personal inadequacy, could foster professional agency. Finally, reframing institutional assessment approaches to emphasise formative feedback rather than summative judgment may help students view evaluation as developmental rather than threatening. These approaches recognise emotional readiness as integral to professional formation.

Author Notes

The present article was the result of the joint work of two authors. Specifically, S.O. Mercer wrote sections Introduction, 3-Methodology, 4-Results and 6-Limitations. R. Orofino wrote sections 1-Theoretical Framework, 2- Research Questions, 5-Discussion, and 7-Conclusion.

Bibliographic References

Avidov-Ungar, O., & Forkosh-Baruch, A. (2018). Professional identity of teacher educators in the digital era in light of demands of pedagogical innovation. *Teaching and Teacher Education*, 73, 183–191.

Beijaard, D., Verloop, N., & Vermunt, J. D. (2000). Teachers' perceptions of professional identity: An exploratory study from a personal knowledge perspective. *Teaching and Teacher Education*, 16(7), 749–764.

Dreer-Goethe, B. (2023). Well-being and mentoring in pre-service teacher education. *International Journal of Mentoring and Coaching in Education*, 12(2), 115–131. <https://doi.org/10.1108/IJMCE-06-2022-0058>

Götl, L., Ober, K., & Ebner, M. (2025). Digital competence and self-efficacy among pre-service teachers: Challenges and opportunities in higher education. *Education Sciences*, 15(2), 160. <https://doi.org/10.3390/educsci15020160>

Hayes, A. F., & Coutts, J. J. (2020). Use omega rather than Cronbach's alpha for estimating reliability. But... *Communication Methods and Measures*, 14(1), 1–24. <https://doi.org/10.1080/19312458.2020.1718629>

Henderson, J., & Corry, M. (2021). Teacher anxiety and technology change: A review of the literature. *Technology, Pedagogy and Education*, 30(4), 573–587. <https://doi.org/10.1080/1475939X.2021.1931426>

Mercer, S. O., & Falzone, Y. (2025). Evaluating the Concurrent Validity of the Future Teacher Anxiety Questionnaire. *ITALIAN JOURNAL OF EDUCATIONAL RESEARCH*, 34, 164–174. <https://doi.org/10.7346/sird-012025-p164>

Mercer, S. O., Falzone, Y., La Marca, A., Miro, B., De Franches, G. R., & Pecoraro, M. (2025). Development and Initial Validation of a Future Teacher Anxiety Questionnaire: A Pilot Study. In P. Ardimento, R. Di Fuccio, G. Fulantelli, P. Limone, R. Pecori, P. Raviolo, M. Rondonotti, D. Schicchi, D. Taibi, & G. Zaza (Eds.), *Higher Education Learning Methodologies and Technologies Online* (pp. 88–103). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-93999-0_6

Ozturk, M., Arikan, S., & Atli, A. (2024). A systematic review of primary school teachers' wellbeing: Determinants, outcomes, and interventions. *Frontiers in Psychology*, 15, 1395271. <https://doi.org/10.3389/fpsyg.2024.1395271>

Pressley, T. (2021). Teacher stress and anxiety during COVID-19: An empirical study. *School Psychology Review*, 50(5), 530–545. <https://doi.org/10.1080/2372966X.2020.1855479>

Pillen, M. T., Beijaard, D., & den Brok, P. J. (2013). Tensions in beginning teachers' professional identity development, accompanying feelings and coping strategies. *European Journal of Teacher Education*, 36(3), 240–260. <https://doi.org/10.1080/02619768.2012.696192>

Shand, J. (2023). Building professional teacher identity in an initial teacher education context. *Australian Journal of Teacher Education*, 48(7), 1–14. <https://files.eric.ed.gov/fulltext/EJ1434287.pdf>

Trizano Hermosilla, P., & Alvarado, J. M. (2016). Best alternatives to Cronbach's alpha reliability in realistic conditions: Congeneric and asymmetrical measurements. *Frontiers in Psychology*, 7, 769. <https://doi.org/10.3389/fpsyg.2016.00769>

Tsybulsky, D., & Levin, I. (2019). Science teachers' worldviews in the age of the digital revolution: Structural and content analysis. *Teaching and Teacher Education*, 86, 102921. <https://doi.org/10.1016/j.tate.2019.102921>

Weiß, J. K., Bottling, M., & Kärner, T. (2023). Professional identification in the beginning of a teacher's career: A longitudinal study on identity formation and the basic psychological need for autonomy in VET teacher training. *Frontiers in Psychology*, 14, Article 1196473. <https://doi.org/10.3389/fpsyg.2023.1196473>

Yang, D. (2025). Technostress among teachers: A systematic literature review. *Computers in Human Behavior*, 156, 108226. <https://doi.org/10.1016/j.chb.2024.108226>