



Teacher education is a deeply pedagogical process rooted in values, ethics, and the social purpose of schooling. Globally, it sits at the core of educational quality and fairness, as research in comparative and international education demonstrates: the training of teachers directly influences students' learning chances, social inclusion, and the democratic aims of schools. Teachers are not simply transmitters of curricula, but active professionals whose convictions, reflective skills, and ability to manage the complexities of classroom life give shape and substance to the educational experience itself.

The pedagogical dimension of teacher education frames teaching as a relational, context-aware, and ethically grounded profession rather than just a set of procedural skills. From a research perspective, this demands robust research methodologies that can critically examine the complex realities of schools and inform evidence-based policies. Equally important is the connection between theory and practice, which helps to bridge the persistent gap between universities and schools.

The contributions gathered in this volume reflect the richness and diversity of experiences showcased during the ATEE Spring Conference 2024, held at the University of Bergamo from May 29 to June 1, 2024. The volume presents 70 selected papers out of more than 300 presented by researchers representing over 40 countries.

This broad spectrum of studies highlights promising directions that can inspire renewed inquiry and concrete proposals aimed at improving contemporary educational systems.

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ATEE Spring Conference 2024

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Teacher education research in Europe: trends, challenges, practices and perspectives

May 29th – June 1st, 2024
S. Agostino, Bergamo



Edited by Nicole Bianquin and Francesco Magni





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BOOK OF PROCEEDINGS

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Università degli studi di Bergamo

2025

BOOK OF PROCEEDINGS ATEE Spring Conference 2024. Teacher education research in Europe: trends, challenges, practices and perspectives / Nicole Bianquin, Francesco Magni (edited by) - Bergamo: Università degli studi di Bergamo, 2025

ISBN: **978-88-97253-27-3**

DOI: [10.62336/unibg.978-88-97253-27-3](https://doi.org/10.62336/unibg.978-88-97253-27-3)

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<https://aisberg.unibg.it/handle/10446/309209>

An event organised by:

Dipartimento di Scienze Umane e Sociali, **University of Bergamo** // www.dsus.unibg.it

CQIIA – Centro per la Qualità dell’Insegnamento, dell’Innovazione didattica e dell’Apprendimento, **University of Bergamo** // www.cqia.unibg.it

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Table of contents

Introduction

Francesco Magni, Nicole Bianquin, *Back to the Core: Rediscovering the Power of Teacher Education Research* 7

Teacher education and pedagogical perspective in uncertain times: history, theory, policies and practices

Brigitta Bekesi, Eva Ulbrich, Tony Houghton, Jana Trgalova & Zsolt Lavicza, *The Reflected Double Tetrahedron Model: Project-based learning in teacher training* 11

Andrea Dessardo, «*The Italian didactic secret*». *Teachers' education according to Giuseppe Lombardo-Radice's thought* 19

Ylenia Falzone & Alessandra La Marca, *Lifelong Learning for Mongolia: Occupational Health & Safety project (3L4MHOS)* 25

Ylenia Falzone, Benedetta Miro & Elif Gülbay, *Teachers and Artificial Intelligence: Developing Digital Citizenship Skills* 31

Eleonora Florio, Tanu Biswas, Ilaria Castelli & Letizia Caso, *Bleak Pedagogy: A new term unveiled from research on Adultcentrism* 38

Deirdre Harvey & Maria Campbell, *Promoting and supporting learner resilience in the hospital school* 44

Aggelos Kavasakalis & Angeliki-Despoina Varouxli, *Reasons and beliefs of (Greek) teachers for participating in an MSc relevant to their profession* 54

Semih Kaygisiz & Hanife Akar, *Challenges Head to Train Culturally and Linguistically Responsive Teachers* 62

Sabina Leoncini, *Gender Stereotypes between School and Guidance: A Look at European Regulations and Vocational Education in Italy* 69

Silvia Maggiolini & Elena Zanfroni, *Emergency and people with intellectual disabilities. Teachers' training in the LEBEL proposal* 77

Cristina Miralles-Cardona, María C. Cardona-Moltó & José M. Esteve-Faubel, <i>Gender-responsive teaching: What strategies are teacher educators using for gender mainstreaming implementation?</i>	83
Benedetta Miro & Alessandra La Marca, <i>Service Learning in teacher education for soft skills development</i>	93
Georgia Natsiou & Melpomeni Tsitouridou, <i>Reflecting together online and offline: A systematic review on the types of peer reflection activities in teacher education</i>	102
Laura Parigi & Maria Elisabetta Cicognini, <i>Exploring the Transformative Impact of Teacher Professional Development on Student-Centered Assessment Approaches</i>	109
Francesca Pileggi, <i>Non-cognitive competence and critical-creative skills. A critical review of the current perspectives</i>	116
Francis J. Prescott-Pickup, <i>Finding a successful teacher identity: the role of the mentor-mentee relationship</i>	122
Nathanaili Valbona, <i>Analyzing poor academic performance of Albanian pupils in PISA</i>	129
Elena Zanfroni, <i>Problematic behaviours and classroom management: teachers' representations</i>	137

Teaching and learning challenges and professional development

Monica Banzato, <i>Attitudes of Humanities Students and Aspiring Teachers Toward Quantitative Educational Research: An Introductory Study</i>	146
Ane Bergersen, <i>Global awareness and professional teacher competence through student mobility from Norway to Zambia</i>	152
Barbara Bocchi, Elena Bortolitti & Paola Damiani, <i>Informal Support Teacher Networks: training and self-training between Communities of Practice</i>	160
Barbara Bocchi, Elena Bortolitti, Paola Damiani, Giuseppe Filippo Dettori & Barbara Letteri, <i>The use of artificial intelligence (AI) in inclusive learning: an exploratory investigation</i>	167
Virginia Capriotti, <i>The Impact of Teaching and Learning Centers (TLCs) on Initial Teacher Education Programs in Italy</i>	176
Giorgia Coppola, <i>From Burnout toward Pedagogical Teacher Education. A communities perspective</i>	183
Alexandra Efstathiades, Christiane Gesierich, Christian Rudloff & Anna Kapsalis, <i>FOOTT PRINTTS: Advancing Quality Standards in Teacher Training</i>	189

Elena Gabbi, Ilaria ancillotti & Maria Ranieri, <i>Rethinking digital competences for teaching in the Post-Covid Era: A participatory approach</i>	197
Marco Giganti, <i>Emergency Remote Teaching and Teacher Training: The Role of Implicit Beliefs in Lasting Educational Change</i>	205
Hege Knudsmoen & Mette Birgitte Helleve, <i>Develop teachers' professional identity through global internship</i>	212
Charlotte Kohlloffel, <i>Opening the black box of writing instruction in times of change: insights from Italian secondary school teachers</i>	220
Regine Lehberger, <i>A learning-design to promote reflection and digital media skills for professionalisation of teacher students</i>	229
Marica Liotino, Taiwo Isaac Olatunji, Marianne Grace Araneta, & Monica Fedeli, <i>Reflective Practice in MOOCs: Exploring the Role of Tutors and Fostering Teacher Professional Development</i>	236
Cristina Lisimberty & Katia Montalbetti, <i>Guiding students from lower to upper secondary: a challenging and shared task for families and schools</i>	244
Sabrina Natali, <i>Rethinking teacher training in emotional education through sports</i>	256
Sara Nosari & Emanuela Guarcello, <i>The question of non-cognitive skills and the cheetah's coat perspective</i>	262
Alessandro Oro, Ira Vannini & Elisa Guasconi, <i>A formative assessment framework to develop primary school pre-service and in-service teachers' video analysis programs</i>	271
Federica Pelizzari & Simona Ferrari, <i>Exploring Coding and Educational Robotics in Primary Schools. Results and Perspectives from an Action Research Approach to Teaching Innovation</i>	278
Annfrid Rosey & Tove Leming, <i>Internationalization in Teacher Education: How can student practice in Southern Africa contribute to strengthening the professional work as teachers in Northern Norway?</i>	293
Stefano Spennati, <i>Educating on complexity at the time of transition</i>	300
Chiara Urbani, <i>Collaborative and epistemic advances: a study on teacher agency</i>	305
Gerd Wikan, <i>Global Teachers and Practicum in the Global South. A study of Long-Term Impact of International Practicum in Namibia</i>	312
Franco Zengaro & Sally A. Zengaro, <i>Teachers Reflect on Their Identities as Former Students and Future Teachers</i>	318
Sally A. Zengaro & Franco Zengaro, <i>Supporting Active Learning in Online Learning: Creating a Culture of Care</i>	326

Inclusion in teaching and learning processes and school improvement

Luca Angelone & Federica Festa, <i>Cultivating Inclusive Education: A Collaborative Journey of Secondary School Teachers in Promoting Cognitive and Linguistic Accessibility through Picture Books and AAC</i>	333
Luca Ballestra Caffaratti, Cecilia Marchisio, Alessandro Monchietto, Alessandro Zanzo & Marco Secchia, <i>The Use of Artificial Intelligence in Secondary Schools: Experiences in Initial Teacher Training</i>	340
Daniele Bullegas & Martina Monteverde, <i>Theory into practice: exploring teacher perceptions about Early Intervention in the Italian school system</i>	346
Sara Cecchetti & Nicole Bianquin, <i>The work plan (Plan de Travail) as an educational device that addresses everyone's needs. A survey of teachers' and pupils' perspectives</i>	354
Federica Cilia, Jeanne Kruck, Marie-Hélène Plumet & Mélina Dell'armi, <i>Well-Being and Social Participation of Autism Spectrum Disorder Students at University: the impact of Atypie Friendly Inclusion Program</i>	362
Alice Di Leva & Federica Festa, <i>The Student Voice in teacher training, an investigation into the inclusiveness of European practices</i>	370
Ilaria Folci & Anna Monauni, <i>Differentiation in Preschool. Pedagogical Issues and Best Practices</i>	378
Mabel Giraldo & Fabio Sacchi, <i>Planning the transition to adulthood for students with disabilities: knowledge, perceptions, challenges from STRADE teacher training program</i>	384
Jørgen Klein, Ann Sylvi Larsen & Tove Grete Lie, <i>'People are people' - An investigation of long-term impacts of an international practicum</i>	393
Daniela Maccario & Annamaria Garibaldi, <i>Helping to learn. What are good practices of educational intervention? Structure and preliminary results of a participatory research study</i>	400
Cecilia Marchisio & Alessandro Monchietto, <i>Improving Inclusive Education: The Turin Model of Collaboration between Schools, Universities and Communities</i>	405
Francesca Placanica, Rosa Sgambelluri & Alessandra Priore, <i>Life Designing and inclusive prospects in Italian schools</i>	411
Ilaria Ravasi, <i>Preventing early school leaving. Perspectives of intervention research between school and territory</i>	417

Digital innovation and artificial intelligence (AI): schools, teachers and students between real and virtual world

Valentina Berardinetti, Michele Ciletti, Andreana Lavanga & Giusi Antonia Toto, <i>Digital Innovation and Artificial Intelligence in Museum Education: perspectives, debates and psychological implications</i>	424
Roxana-Madalina Cristea, <i>Investigating the Relationships between In-service Teachers' Technology Pedagogy Content Knowledge and Virtual Learning Environment Success</i>	432
Francesca De Vitis & Marcello Tempesta, <i>Touch in small hands. Responding to the challenges of technology in childhood 0-6</i>	439
Silvia Larghi & Edoardo Datteri, <i>Programming errors and the attribution of intentionality to educational robots</i>	445
Juliana Elisa Raffaghelli, Francesca Crudele, Laura Foschi & Graziano Cecchinato, <i>Let me introduce open education... Facilitating Prospective teachers' understanding of open Education through an ai-based tool</i>	453
Alice Roffi, <i>Digital technologies and collaborative activities for science teaching in the upper secondary school: a qualitative study on teacher's perspective</i>	464
Alice Roffi, Gabriele Biagini, Stefano Cuomo & Maria Ranieri, <i>Development of teachers' competences on Learning Design and on supporting student's Self-Regulated Learning in the lower secondary school</i>	472
Marcello Tempesta, <i>Teacher education and motivation culture</i>	481

School & work and the role of teachers in Vocational Education and Training

Maria Concetta Carruba, Mariateresa Cairo & Magdalena Tsoneva, <i>Comparative Analysis of Inclusive Education Practices in Italy and Bulgaria: Reflections from the Erasmus Plus ASuMIE Project</i>	488
Valerio Ferrero, <i>Teacher Education as a Game Changer: Non-Traditional Factors of Inequality and the Role of Teachers for Equity</i>	494
Anna Granata & Valerio Ferrero, <i>Beyond Patriarchy: Teaching Profession, Gender Issues and Teacher Education in Italy</i>	502
Paola Zini & Dalila Raccagni, <i>Teacher training and well-being best practices: the 3H project</i>	508



POSTER SESSION

Antinea Ambretti, Chiara Gamberini & Arianna Fogliata, <i>Integration of the Sincrony method in physical education during school age in the digital era</i>	517
Francesca Finestrone, <i>Music as an inclusive tool for promoting a sustainable Culture</i>	523
Francesca Finestrone, Francesco Pio Savino, Leonardo Palmisano & Giusi Antonia Toto, <i>Nature Connection and Music in Early Education: Insights from the CNS-ch Scale and TEAL Methods</i>	532
Paula Matijašević, Bruno Matijašević, Ana Žnidarec Čučković & Vesna Babić, <i>Kinesiologists' and Coaches' Self-Assessment of Their Pedagogical Competences</i>	538

The contributions published in this book of proceedings have been evaluated through a double-blind peer review process. We would like to thank the members of the Scientific Committee, as well as the many other professors, researchers and experts who agreed to act as reviewers.

Gender-responsive teaching: What strategies are teacher educators using for gender mainstreaming implementation?

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Abstract

Gender equality (GE) in education remains a global priority, yet its inclusion in teacher education programs is inconsistent. This study explored the integration of gender-responsive pedagogy (GRP), analyzing faculty teaching content and methods. Using a descriptive cross-sectional survey, data from 161 pre-service teachers were gathered through validated GRT scales. Results show that gender-related topics are moderately covered, focusing on gender-based violence and equal opportunities, while foundational concepts are overlooked. Teaching methods relied on lectures and projects, with limited use of interactive strategies. Findings revealed weak institutional commitment to gender, emphasizing the need for curricular reform, faculty training, and accountability to advance GE teaching.

Keywords: initial teacher education; gender equality; gender-sensitive pedagogy; pre-service teachers; 2030 Agenda for Sustainable Development.

1. Introduction

Gender equality (GE) is a fundamental issue of human rights and social justice, recognized as essential for sustainable development and democratic progress. While GE has been a longstanding focus of international and national policies, it has only gained global prominence as a strategic priority in recent decades. Organizations like the United Nations (UN) and the European Union (EU) emphasize its importance in ensuring equal opportunities. Pivotal initiatives such as the Beijing Declaration (UN, 1995), the Education for All (EFA) movement (UNESCO, 2000), and recently the 2030 Agenda (UN, 2015) through SDG 5 (Gender Equality) highlight education's role in achieving gender equality. Despite these initiatives, significant inequalities persist, necessitating further education to reduce them.

To achieve gender equality, as aimed in the 2030 Agenda, the entire educational system must change by adopting policies, plans and strategies that take gender issues into account and address biased gender social norms. The strategy adopted internationally to address unequal access to and inadequate education opportunities for all has been gender mainstreaming (UN-Women, 2022). Gender mainstreaming (GM) is not a policy itself but a means to achieving gender equality. The European Union (EU) conceptualizes GM as a 'dual approach', which involves mainstreaming a gender perspective in all policies, while also implementing specific measures to eliminate, prevent or remedy gender inequalities (EIGE, n.d). Applied to higher education teaching, GM refers to the process of including a gender perspective both in teaching and in the organizational structures (faculties and departments) using GE plans as instruments for its implementation. It is a teaching that considers sex and gender as key analytical and explanatory variables, which implies paying attention to the similarities and differences in the experiences, interests, expectations, attitudes and behavior of women, men, and disadvantaged groups as well as the causes and consequences of gender inequality to face them (Cardona-Moltó & Miralles-Cardona, 2022). Mainstreaming a gender perspective into teaching impacts study programs and teaching methods, enhancing education quality by addressing diverse student needs rather than assuming male experiences are universal. This process helps prevent gender blindness by recognizing socially imposed roles and responsibilities and fostering awareness of inequalities. However, despite being considered a core strategy for accelerating progress on gender equality (UN-Women, 2022), in practice, many countries face challenges in implementing the strategy.

One of the primary obstacles is the absence of gender-sensitive training within higher education programs. In teacher education, studies suggest that many educators have limited awareness of gender issues, which contributes to the perpetuation of stereotypes and inequalities in classrooms (Aznar-Martínez et al., 2025; Sanabrias-Moreno et al., 2022). Additionally, many teacher training programs fail to provide future teachers with the necessary skills to effectively implement teaching with a gender perspective. Research also points to significant resistance against integrating gender perspectives into university curricula, reflecting broader structural, cultural, and institutional barriers that hinder progress toward more equitable societies (Lombardo & Mergaert, 2013).

Few studies exist on teaching gender in teacher education, demonstrating that gender-related topics are poorly integrated into the curriculum (Aikman et al., 2005; Edwards et al., 2020). There appears to be a general knowledge gap and a low awareness of gender issues among teacher educators and institutions, a gap that needs to be overcome by providing gender training opportunities. Because fragmented approaches are the norm, future teachers complete their university preparation without having adequately developed the skills necessary to incorporate gender pedagogy into their future professional practice. In Spain, studies such as those of González-Pérez (2017), Rodríguez-Jaume and Gil-Gonzalez (2021) at Xarxa Vives Universities, Valdivieso (2016) at the University of Las Palmas, or Resa (2023) at the Complutense University of Madrid, among others, highlight indifference to including gender issues in university curricula and pedagogy, a case that seems to be common to all branches of knowledge in European countries (Atchison, 2013; Grünberg, 2011; Kreitz-Sandberg & Lahelma, 2021; Weiner, 2000; Zippel et al., 2016), as well as the broader global context (Bothwell, 2022; World Economic Forum, 2023).

To bridge these gaps, adopting gender-responsive pedagogy (GRP) is essential. Gender-responsive pedagogy is a transformative approach to learning and teaching that considers learners' unique needs, experiences, and capacities based on their gender (Chapin et al., 2020; Doroba et al., 2015; Mlama et al. 2005). It seeks to challenge and dismantle traditional gender norms and stereotypes that may limit individuals' potential and restrict their access to quality education. It is about being conscious of the intersection between gender and learners' needs to rectify the imbalances in society. Gender-responsive pedagogy brings in gender-sensitive teaching that focuses on what is taught, how it is delivered, and how it is retained in both male and female learners (Thege et al., 2020). Teachers trained in GRP are better equipped to plan lessons, manage classrooms, and evaluate student performance through a gender-sensitive lens (Kumar, 2024). The goals of GRP training include: (1) raising educators' awareness of gender issues and concepts; (2) providing educators with strategies to integrate gender into all aspects of teaching and learning; (3) encouraging problem-solving and innovation in addressing gender disparities in educational settings; and (4) enhancing institutional capacities to develop gender-transformative curricula and practices (Kumar, 2024; UNESCO, 2024). By adopting GPR, educators can act as agents of change, fostering an educational landscape that promotes GE and dismantles systemic barriers.

Much of the research to date related to GRP has been conducted in African countries and the strategies carried out there are inspired (FAWE, Forum for African Women Educationalists, 2020). However, in Spain, research on this topic remains lacking. The insufficient evidence about what teacher educators are teaching when they teach GE in teacher education demands further research. In this regard, this study investigated in a higher education institution in Spain (the University of Alicante, UA) how teacher educators embed gender responsive pedagogy into their teaching practices with pre-service teachers. Specifically, we focused on the following research question:

RQ. What content and methods do teacher educators use to address gender equality through their teaching assignments?

Identifying the content and methods used by teacher educators will highlight gaps and best practices in preparing future teachers for gender-responsive teaching at UA. The findings can inform the development of professional training programs that enhance teacher educators' ability to integrate gender equality into their instruction. Furthermore, assessing self-efficacy levels among student teachers will help design targeted interventions to strengthen their confidence in applying gender-responsive pedagogy.

2. Method

To answer the research question, this study employed a descriptive cross-sectional survey design (Bryman, 2016). The study adhered to the Declaration of Helsinki and EU Regulation 2016/679 (General Data Protection Regulation) and was granted exemption from review by the UA Ethics Committee (Approval Code: UA12162/2023).

2.1 Participants and context

The UA is a publicly funded university located in the Valencian Community, Spain. Established in 1979, it serves as a modern, multidisciplinary institution committed to teaching, research, and innovation. It has a student population of approximately 25,000, of whom about 1,200 graduate annually from the Faculty of Education, most of them being Spaniards (99%) and women (71%). The UA has aligned its policies with the 2030 Agenda for Sustainable Development and the European GE directives following the enactment of *Organic Law 3/2007* by the Spanish Government (2007). Since then, the institution has undertaken various initiatives to develop gender-related policies through GE plans and is currently operating under its *Fourth Equality Plan* (UA, 2022). Despite institutional efforts, the implementation of the plan remains limited, particularly regarding Axis 1 (Gender

Awareness and Training) and Axis 2 (Teaching with a Gender Perspective). Notably, although 67% of degree programs incorporate gender-related competencies, few offer dedicated courses on the subject or include the gender perspective in the subjects taught. Specifically, only seven out of 45 degree programs (15.5%) include gender-specific courses, with three programs offering compulsory gender-focused courses and four providing them as elective options. These courses are primarily concentrated in faculties such as Economics, Law, Education, and Philosophy, with minimal representation in other disciplines. On the other hand, although some educators claim to teach their subjects with a gender perspective, most teaching guides do not usually refer to gender in the objectives, content or methodology sections (UA, 2022).

The participants in this study were 161 undergraduate pre-service teachers pursuing degrees in Elementary and Secondary Education teaching degrees at the College of Education. They were selected purposely from an advanced-level course within their teaching degree programs. Of the 161 participants, 78 (48.44%) were in the Elementary Education track and 83 (51.55%) in the Secondary Education track. Their ages ranged from 19 to 44 years old ($M = 24.13$, $SD = 5.67$). The majority were female ($n = 122$, 76%), while 24% were male ($n = 39$). Nearly all participants were Spaniards (99%). Twenty-three percent of the participants ($n = 37$) reported having received formal gender training (11 hours on average), while 77 percent ($n = 124$) did not receive any. Thirty-three percent ($n = 53$) observed institutional changes due to the implementation of gender policies at UA and 46% ($n = 74$) perceived also changes in teaching practices. Overall, participants rated gender equality training as very important for their education as future teachers ($M = 9.06$, $SD = 1.53$). Although gender is considered a transversal competence in some degree programs, gender topics are often absent from coursework. However, students have the option to take a three-credit elective course on 'Education for Gender Equality.'

2.2 Measures

The study assessed gender-responsive teaching using the *Gender-Responsive Teaching* (GRT) index. It measures what gender content is taught and how it is taught. This index is a subscale of the Spanish version of the *Education for Sustainable Development of Gender Equality (ESD 5)* index (Miralles-Cardona, 2024). It consists of 13 items grouped into two factors: (1) Gender Content in Coursework (7 items) that assesses the extent to which faculty include gender topics in their teaching subjects, and (2) Gender-Responsive Teaching Methods (6 items) that measures the use of gender-inclusive teaching approaches. The participants were asked to answer two questions: (1) How often did faculty address gender equality topics during their teaching assignments? and (2) How often did faculty employ different methodological approaches to teach gender? Responses were recorded on a 5-point Likert scale (1 = *Never*, 2 = *Rarely*, 3 = *Sometimes*, 4 = *Often*, and, 5 = *Always*), with higher values indicating greater integration of gender into their teaching. Preliminary analysis of the GRT index using Spanish student teachers reveals that the instrument has internal consistency (Cronbach's $\alpha > .90$) and it is valid for what it aims to measure, having shown evidence of its content validity, CVI .97 (Lawshe, 1995) and construct validity (Miralles-Cardona et al., 2024).

2.3 Data collection procedure

Data were collected during class time in the second semester of the 2022-2023 academic year from one of the mandatory courses of the teaching degree program. All of the participants gave informed consent after being advised of the voluntary, anonymous, and confidential nature of the study, as well as their right to decline participation at any time during the survey administration. The questionnaire was administered in-person to all students enrolled in the selected course. Students who chose not to participate returned blank surveys. Completion time was approximately 10 minutes. The questionnaire consisted of two parts. Part I contained Demographic Information (8 items) and Part II, the Gender-Responsive Teaching index (13 items).

2.4 Data analysis

Preliminary analyses involved conducting an exploratory factor analysis (EFA) of the GRT index to examine its underlying structure, alongside an assessment of reliability using Cronbach's alpha. Data distribution was evaluated through skewness and kurtosis values, while normality was assessed based on the Muthén and Kaplan (1985) criteria (-2 to +2 range). To address the research questions, a range of statistical methods were employed. Descriptive statistics (means, frequencies, and percentages) were used to summarize the data. Independent samples *t*-tests were conducted to compare TEGEP scores between participants with and without gender training, with effect sizes calculated using Cohen's *d*. All statistical analyses were carried out using SPSS (version 28).

3. Results

3.1 Exploratory factor analysis, normality check and reliability

EFA. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy yielded a value of 0.772, indicating that the sample was suitable for EFA. Bartlett's test of sphericity confirmed the appropriateness of the analysis, yielding a statistically significant result: $\chi^2(78) = 257.51, p < .000$. Principal component analysis was employed for factor extraction, followed by Varimax rotation. The results identified two factors within the index. The first factor, with an eigenvalue of 5.83, accounted for 44.83% of the total variance, while the second factor (eigenvalue of 2.11) explained an additional 16.26%, culminating in a cumulative variance of 61.09% (Table 1).

Reliability. The internal consistency of the GRT was assessed using item-total correlation and Cronbach's alpha for both the overall scale and its subscales. The overall Cronbach's alpha coefficient was high ($\alpha = .877$), indicating strong internal consistency. By subscale, the Gender Content Taught factor showed a reliability coefficient of $\alpha = .887$, while the Gender Approaches factor had a coefficient of $\alpha = .800$, both of which are considered good reliability, according to Thorndike (1997). Item-total correlation values ranged from .288 to .796, supporting the scale's reliability.

Normality check. All items met the normal distribution requirement values of the skewness and kurtosis, which were within an acceptable range of -2 to +2, as suggested by Muthén and Kaplan (1985) (see Table 1). Regarding the Gender Content subscale, the highest mean corresponds to Item 4 'Gender-based equal opportunities' with a mean of 3.69, while the lowest corresponds to Item 1 'Foundations and principles of gender equality' with a mean of 3.14, on a five-point scale, thus placing them around the midpoint of the scale, which is 3. The item with the most homogeneous responses was Item 4 ($SD = 0.86$), whereas the most heterogeneous was Item 11 'Abuse in power relations based on gender' ($SD = 1.23$). For the Gender-Responsive Teaching Methods subscale, Item 15 'Project-based teaching' had the highest mean (3.17), while Item 13 'Lecture-based teaching' had the lowest (3.14). The item with the greatest response variability was Item 17 ($SD = 1.34$), whereas the most consistent responses were observed for Item 13 ($SD = 1.16$).

		Factor I	Factor II	M	SD	Skewness	Kurtosis
What Is Taught							
1	Foundations and principles of gender equality.	.790		3.14	1.03	-.132	-.351
3	Diversity and gender identity.	.729		3.26	1.12	-.411	-.368
4	Gender-based equal opportunities.	.796		3.69	0.86	-.104	-.781
5	Gender inequalities.	.738		3.51	1.06	-.116	-1.19
9	Social justice and equity.	.675		3.51	1.09	-.324	-.671
10	Gender violence.	.765		3.60	1.16	-.549	-.389
11	Abuse in power relations based on gender.	.829		3.37	1.23	.278	-.749
How It Is Taught							
13	Lecture-based teaching.		.698	2.23	1.16	.238	-.611

15	Project-based teaching.	.567	3.17	1.33	-.254	-1.13
17	Online and/or technology-based teaching.	.716	2.89	1.34	-.088	-1.16
19	Case Study-based teaching.	.714	2.94	1.25	-.074	-.883
23	Research-based teaching.	.716	2.83	1.31	.007	-1.02
24	Guided discovery teaching.	.763	2.66	1.23	.112	-1.05

KMO = .722

Bartlett test: $\chi^2(78) = 257.51, p < .000$

% Variance explained: 61.09%

Alpha: Whole scale = .877; Factor 1 = .887; Factor 2 = .800

Table 1: Exploratory factor analysis and descriptives for GRT index. Scale range 1-6 (Midpoint 3.50)

3.2 RQ. Gender-responsive teaching

As indicated by the average mean responses of factor 1, Gender Content Taught (Table 1), teacher educators incorporated gender-related issues into their teaching to a moderate extent ($M = 3.40, SD = 0.84$). However, certain gender-related topics were emphasized more than others (see Figure 1). The most frequently addressed topics were gender-based violence (Item 10), gender-based equal opportunities (Item 4), gender inequalities (Item 5), and social justice and equity (Item 9), with 57.1% and 54.3% of respondents, respectively, reporting that these topics were covered frequently and in sufficient depth during coursework. In contrast, the least frequently addressed topic was the foundations and principles of gender equality (Item 1), with only 28.6% of respondents indicating that it was covered frequently and only 8.6% stating that it was addressed extensively.

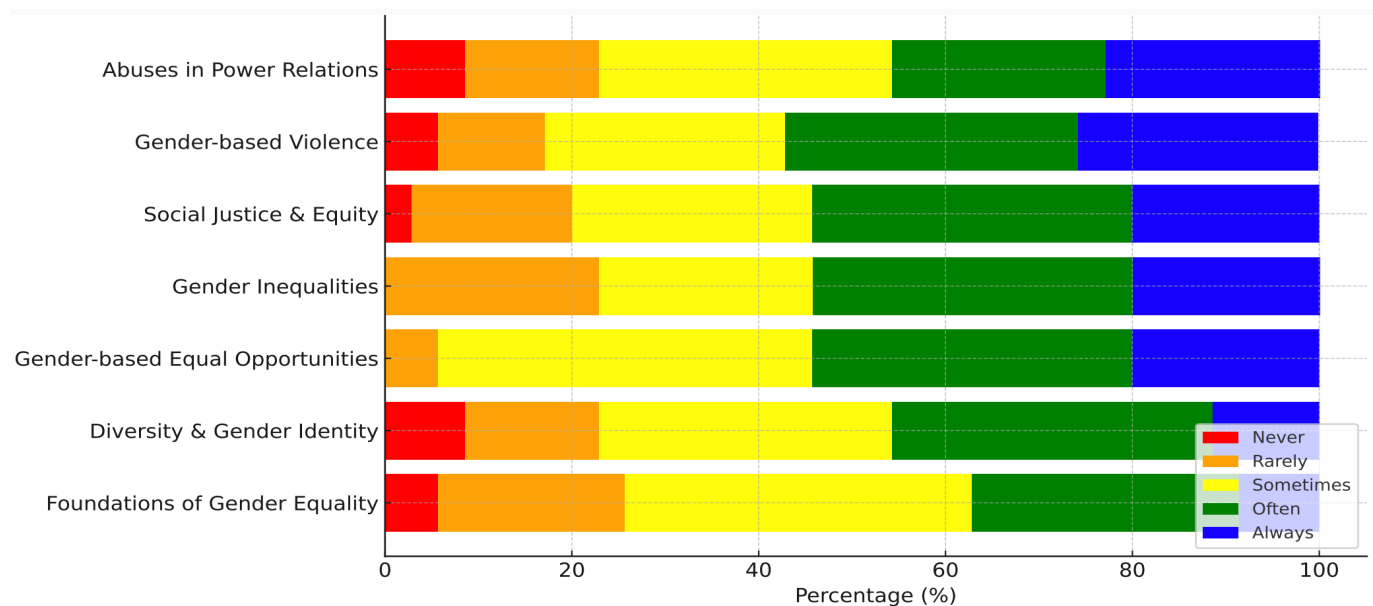


Figure 1: distribution of responses for gender content taught.

Regarding the gender-responsive teaching methods employed by teacher educators to teach gender-related topics, respondents reported that project-based teaching (Item 15) was the most frequently utilized strategy, with 48.5% indicating that their instructors used it often or always. Similarly, lecture-based teaching (Item 13) was also commonly employed, with 42.9% of respondents reporting frequent or very frequent use. In contrast, the least frequently used approaches were online and/or technology-based teaching (Item 17), research-based learning (Item 23), and guided discovery teaching (Item 24). Notably, 22.9% of respondents stated that guided discovery teaching was never used during their coursework, highlighting a significant gap in the application of more interactive and exploratory teaching methodologies. Figure 2 provides a visual representation of these findings.

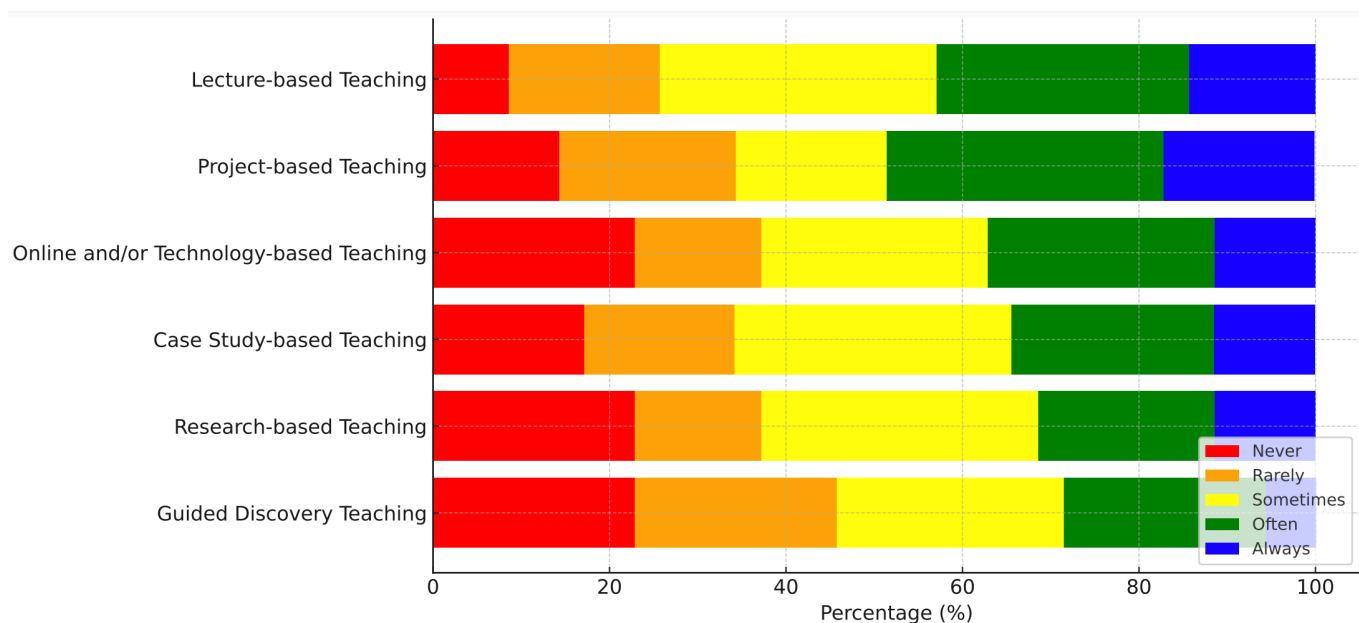


Figure 2: distribution of responses for gender-responsive teaching methods.

In summary, the findings indicate that teacher educators infuse gender-related content into their teaching to a moderate extent, with a tendency to prioritize issues that directly relate to real-world social problems such as gender-based violence over more theoretical topics such as foundations of gender equality. Likewise, the data suggest a preference for familiar teaching methods, such as project-based teaching and lecture-based instruction, rather than less commonly used, more demanding, and more time-consuming approaches, such as guided discovery teaching and research-based learning.

4. Discussion

This study aimed to investigate the extent to which gender-responsive pedagogy is integrated into university teaching at UA, specifically examining how teacher educators incorporate gender-responsive pedagogy into their instructional practices. The research aimed to address two key objectives: (1) identify the teaching content and approaches used by teacher educators to teach gender equality; (2) examine the impact of teaching methods and content on student teachers' self-efficacy in implementing gender equality (GE) practices.

To address the research question, the Spanish version of the GRT index (Miralles-Cardona, 2024) was used. This instrument consists of 13 items distributed across two subscales: Gender Content Taught (7 items) and Gender-Responsive Teaching Methods (6 items). Using this study's sample, the GRT index revealed a two-factor structure that appropriately captures the constructs measured, explaining 61.09% of the total variance. Furthermore, the index exhibited strong internal consistency, with an overall reliability coefficient of $\alpha = .877$ ($\alpha = .887$ for GCT and $\alpha = .800$ for GTA, respectively), indicating that the instrument possesses adequate psychometric properties for use in teaching contexts. This finding is significant as it provides a valid and reliable tool for examining the teaching content and gender-responsive methods educators utilize when teaching gender-related topics. Data collected using the GRT index revealed that gender issues were only occasionally addressed in university teaching. Among the seven assessed topics, none were perceived by students as being covered 'often', suggesting that gender topics were addressed only sporadically. However, a few themes—gender-based violence, gender-based equal opportunities, gender inequality, and social justice and equity—were reported by a majority of respondents (>50%) as being discussed at least 'sometimes'. Regarding the methods used to address gender topics, only project-based teaching and lecture-based instruction were reported as being used frequently or almost always by nearly half of the respondents (48.5% and 42.9%, respectively). In contrast, the

remaining methodological approaches were sporadically implemented. These findings are both revealing and novel, as they indicate that gender equality content is largely absent from lesson plans, hindering the development of gender knowledge and skills among pre-service teachers. The results align with previous literature, which highlights the precarious state of gender-responsive teaching (Cavaghan, 2017; Rodríguez-Jaume & Gil-Gonzalez, 2021) and supports studies emphasizing the existence of a curriculum that lacks commitment to gender (Aikman et al., 2005; Dumbuya, 2023; Grünberg, 2011).

These findings are consistent with existing literature, including studies conducted in Spain (e.g., Aznar-Martinez et al., 2025; Resa, 2023; Sanabrias-Moreno et al., 2022), other European countries (e.g. Engeli & Mazur, 2018; Grenz et al., 2008; Weiner, 2000), and globally (Bothwell et al., 2022; World Economic Forum, 2023), which underscores the limited impact of gender mainstreaming in higher education and teacher education. This study is innovative, as it is among the first published to explore not only the curriculum but also gender pedagogy, two key areas that require greater attention in teacher education programs.

4.1 Limitations

The interpretation of the findings must be considered within the scope of several limitations. First, the analyses were based on cross-sectional data, which does not allow for causal inference. Second, this study relies on student teachers' assessments, which may be influenced by personal biases and individual characteristics. Third, it was conducted with a non-representative sample of pre-service teachers, with a gender imbalance (predominantly female participants), which does not reflect the entire student body, academic levels, or education programs within the UA College of Education. Fourth, the findings do not include insights from teacher educators, who may hold perspectives that differ from those of the students. Finally, complementing this study with interviews from both student teachers and teacher educators, as well as classroom observations, could yield different or more substantive findings.

4.2 Practical implications

Given the limited research on gender-responsive teaching in higher education, there is an urgent need to transform both curricula and pedagogy to promote gender inclusivity (Aikman et al., 2005). The findings highlight universities as key stakeholders in addressing this issue, yet a clear lack of institutional commitment persists in integrating gender mainstreaming into faculty missions and policies. Degree programs, curricula, course syllabi, and pedagogical approaches remain largely disconnected from legislative mandates, despite existing legal requirements. Additionally, the insufficient gender training of faculty members further impedes the effective implementation of gender-responsive teaching. This gap not only slows progress but also reinforces misconceptions about gender equality and perpetuates stereotypical gender norms. To address these challenges, a comprehensive evaluation of gender equality plans in academic institutions is essential, along with a targeted assessment of teacher educators' training needs. Without adequate faculty preparation, gender mainstreaming efforts will remain ineffective. Beyond curricular and institutional reforms, future research should examine the necessity of sustained support and mentorship for teacher educators to ensure meaningful and lasting change.

4.3 Conclusion

This study highlights the challenges and gaps in implementing gender-responsive pedagogy in teacher education at the University of Alicante. The findings reveal that while gender-related content is occasionally integrated into coursework, it is neither systematically addressed nor sufficiently emphasized in instructional practices. Furthermore, the study demonstrates that pre-service teachers who received gender training perceive themselves as more competent in applying gender-responsive pedagogy compared to those without training. However, the absence of significant differences in some self-efficacy indicators suggests that insufficient training may not be enough to foster deep, lasting competence in gender-responsive teaching. Despite institutional

commitments to GE, the limited integration of gender perspectives into teacher education curricula underscores the need for more comprehensive reforms. The UA must move beyond policy declarations and actively embed gender-sensitive content and methodologies into teacher training programs. Additionally, faculty development initiatives are essential to equip teacher educators with the skills and knowledge necessary to implement gender-responsive teaching effectively. Addressing these gaps requires a systemic transformation that includes curricular revision, faculty training, and institutional accountability to ensure that future teachers are fully prepared to promote gender equality in education. Without sustained efforts to integrate gender-responsive pedagogy at all levels of teacher education, the broader goal of achieving gender equity in schools and society remains out of reach.

5. Funding

This research was supported by the Spanish Ministry of Science and Innovation, the European Regional Development Fund (MCIN/AEI/10.13039/501100011033/FEDER, UE), and University of Alicante (Grants #PID2022-142830NB-I00-I and #GRE22-06B).

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