



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.

FRANCESCO MAGNI is an Associate Professor of General and Social Pedagogy (PAED-01/A) at the Department of Human and Social Sciences, University of Bergamo, Italy. He is a member of the board and Deputy Director of CQIIA (Center for the Quality of Teaching, Didactic Innovation, and Learning). He is also a member of the ATEE - Association for Teacher Education in Europe.

NICOLE BIANQUIN is an Associate Professor of Didactics and Special Education (PAED-02/A) at the Department of Human and Social Sciences, University of the Aosta Valley, Aosta, Italy. She is a member of the ATEE - Association for Teacher Education in Europe.

ATEE Spring Conference 2024

ATEE Spring Conference 2024

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



UNIVERSITÀ
DEGLI STUDI
DI BERGAMO





UNIVERSITÀ
DEGLI STUDI
DI BERGAMO | Dipartimento
di Scienze Umane
e Sociali



CQIA

Centro per la Qualità dell'Insegnamento,
dell'Innovazione Didattica e dell'Apprendimento
UNIVERSITÀ DEGLI STUDI
DI BERGAMO



BOOK OF PROCEEDINGS

ATEE Spring Conference 2024

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

May 29th – June 1st, 2024

S. Agostino, 2 - Bergamo, Italy

Edited by Nicole Bianquin and Francesco Magni



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)

This publication is released under the Creative Commons
[Attribution Non-Commercial No Derivatives license \(CC BY-NC-ND 4.0\)](https://creativecommons.org/licenses/by-nc-nd/4.0/)



© 2025 The Authors

<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

ATEE – Association for Teacher Education in Europe // www.atee.education

In collaboration with:

Siped
Società Italiana di Pedagogia
fondata nel 1989

SIPED
Società Italiana di
Pedagogia

BAUHAUS4EU
European University Alliance

Bahuhus4EU
European University
Alliance



CIRSE
Centro italiano per la
ricerca storico
educativa

SIRD
Società Italiana di Ricerca Didattica

SIRD
Società Italiana di Ricerca
Didattica

SIPSE
SOCIETÀ ITALIANA
PER LO STUDIO DEL
PATRIMONIO
STORICO-EDUCATIVO

SIPSE
Società Italiana per lo
Studio del Patrimonio
Storico-Educativo

**COMENIUS
ASSOCIATION
COMENIUS**

Comenius Association
European Higher Education
Network of Teacher and
Social Education

sipeges
Associazione italiana di pedagogia generale e sociale

SIPeGeS
Società Italiana di
Pedagogia Generale e
Sociale

EFVET
European Forum
of Technical
and Vocational
Education and Training

EfVET
European forum of
Technical and Vocational
Education and Training

SIPeS
Società Italiana
di Pedagogia
speciale

SIPeS
Società Italiana di
Pedagogia Speciale

ETF
Working Together
Learning for All
European Training Foundation

ETF
European Training
Foundation

C.I.R.PED
Centro
Italiano di
Ricerca
Pedagogica

C.I.R.PED
Centro Italiano di
Ricerca Pedagogica

INVALSI

INVALSI
Istituto nazionale per
la valutazione del
sistema educativo di
istruzione e di
formazione

SIREF
Società Italiana di Ricerca Educativa e Formativa

SIREF
Società Italiana di
Ricerca Educativa e
Formativa

**Ufficio
Scolastico
Territoriale
di Bergamo**

**Ufficio Scolastico
Territoriale di Bergamo**

Conference Chair

Nicole Bianquin, associate professor in Special Education, University of the Aosta Valley, ATEE member;

Francesco Magni, associate professor in Education, University of Bergamo, ATEE member.

Scientific committee

Adolfo Scotto Di Luzio, Vice-Rector for Didactics, Guidance and Placement, University of Bergamo, Italy

Marco Lazzari, Head of the Department of Human and Social Sciences, University of Bergamo, Italy (until September 2024).

Anna Maria Falzoni, Director of CQIIA - Centre for Teaching Quality, Teaching Innovation and Learning, University of Bergamo, Italy

Maria Assunção Flores, University of Minho, Portugal

Joanne Banks, Trinity College of Dublin, Ireland

Federica Baroni, University of Bergamo, Italy

Tore Bernt Sorensen, University of Glasgow,

Scotland (UK)

Paolo Bertuletti, University of Bergamo, Italy

Serenella Besio, University of Bergamo, Italy

Antonio Borgogni, University of Bergamo, Italy

T.J. Ó Ceallaigh, University College Cork, Ireland;

ATEE AC member

Monica Crotti, University of Bergamo, Italy

Linda Daniela, University of Latvia, Latvia

Dietmar Frommberger, University of Osnabrück,

Germany

Paola Gandolfi, University of Bergamo, Italy

Mabel Giraldo, University of Bergamo, Italy

Etti Gordon Ginzburg, Oranim College of Education,

Israel

Michiel Heijnen, Marnix Academy, Netherlands; ATEE

AC President

Erika Kopp, Eötvös Loránd University, Hungary;

ATEE AC member

Marta Kowalczyk-Walędziak, University of Białystok,

Poland

Anna Lazzarini, University of Bergamo, Italy

Hagen Lehmann, University of Bergamo, Italy

Nicola Lovecchio, University of Bergamo, Italy

Gale MacLeod, University of Edinburgh, Scotland

(UK)

Fernando Marhuenda Fluixá, Universitat de València, Spain

Alessandra Mazzini, University of Bergamo, Italy

Sara Nijs, Leuven University, Belgium,

Katrin Poom-Valickis, University of Tallinn, Estonia

Andrea Potestio, University of Bergamo, Italy

Evelina Scaglia, University of Bergamo, Italy

Johannes Karl Schmees, Norwegian University of

Science and Technology (NTNU), Norway

Leah Shagrir, Levinsky College of Education, Israel;

ATEE AC member

Olena Shyyann, Lviv State University of Physical

Culture, Ukraine; ATEE AC member

Vasileios Symeonidis, Pädagogische Hochschule

Freiburg, Germany

Ronny Smet, Karel de Grote University of Applied

Science and Arts, Belgium; RDCs Coordinator of

ATEE

Agnieszka Szplit, Jan Kochanowski University of

Kielce, Poland; ATEE AC Vice-President

Elena Theodoropoulou, University of the Aegean,

Greece

Philippe Tremblay, Université de Laval, Québec

Vidmantas Tūtlys, Academy of Education, Vytautas

Magnus University, Lithuania

Wieland Wermke, Stockholm University, Sweden

Mara Westling Allodi, Stockholm University, Sweden

Jenny Wilder, Stockholm University, Sweden

Rano Zakirova Engstrand, Stockholm University,

Sweden

Organizing committee

Virginia Capriotti, University of Bergamo

Sara Cecchetti, University of Bergamo

Federico Chiappetta, University of Bergamo

Emilio Conte, University of Bergamo

Ester Guerini, University of Bergamo

Paolo Lazzaroni, University of Bergamo

Alice Locatelli, University of Bergamo

Isabel Maggiarra, University of Bergamo

Fabio Sacchi, University of Bergamo

Arianna Taravella, University of Bergamo

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 Varouxi, *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, *Integration of the Sincrony method in physical education during school age in the digital era* 517

Francesca Finestrone, *Music as an inclusive tool for promoting a sustainable Culture* 523

Francesca Finestrone, Francesco Pio Savino, Leonardo Palmisano & Giusi Antonia Toto, *Nature Connection and Music in Early Education: Insights from the CNS-ch Scale and TEAL Methods* 532

Paula Matijašević, Bruno Matijašević, Ana Žnidarec Čučković & Vesna Babić, *Kinesiologists' and Coaches' Self-Assessment of Their Pedagogical Competences* 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.

Kinesiologists' and Coaches' Self-Assessment of Their Pedagogical Competences

Paula Matijašević, *University of Split - University of Zagreb*, paula.matijasevic@kifst.eu

Bruno Matijašević, *University of Split - University of Osijek*

Ana Žnidarec Čučković, *University of Zagreb*, ana.znidarec.cuckovic@kif.unizg.hr

Vesna Babić, *University of Zagreb*, vesna.babic@kif.unizg.hr

Abstract

This study aimed to evaluate the pedagogical competence of kinesiologists and coaches through self-reflection, in order to identify areas for pedagogical improvement and professional development. The research included 302 participants from Croatia—217 kinesiologists and 85 coaches. The instrument used was the “Self-Assessment of Pedagogical Competence of the Teacher's Role” questionnaire, which demonstrated high reliability (Cronbach's alpha = 0.98). Results showed a high level of motivation and interest in working with children and athletes, which is a key trait of pedagogically competent professionals. Additionally, a negative correlation was found between pedagogical competence and both uncertainty in work and perceived existing knowledge, highlighting the value of self-reflection.

Keywords: pedagogical practice; education; correlation; initial education.

1. Introduction

A kinesiologist and a coach, as professionals and experts, are participants in a system requiring a wide range of knowledge and skills for successful operation within it. Because kinesiologists are part of the educational system, they can be seen as education subjects with developmental and creative functions (Lukaš & Mušanović, 2020). This is why pedagogical knowledge is necessary to fulfil the prerequisites and lay the foundations for children's holistic growth and development. The initial education of education subjects often influences different levels of competencies. Kinesiologists acquire more pedagogical, didactic, methodological, and sports knowledge during their education than coaches who complete coaching school. Since not everyone has the same initial education, the levels of pedagogical competencies and, subsequently, pedagogical practice differ. However, initial education is not the only precondition for successful pedagogical practice; it is the starting point from which other conditions and factors affecting the level of pedagogical competencies arise.

One of the main parameters of pedagogical competence is the implementation of pedagogical practice and its self-reflection. This is manifested through three elements: "experience of control," "relationship," and "good feeling" (Kostović-Vranješ & Ljubetić, 2008). That is, they should control their actions and work and manage their feelings and behaviour during work to create a positive atmosphere in learning or training. Additionally, it is necessary to establish communication with the education subjects to receive feedback for improvement and enjoyment of their work. As a fundamental human right, education promotes individual freedom and empowerment and yields significant development benefits (Žnidarec Čučković & Ohnjec, 2017). Considering the constant changes in society, improving knowledge and skills and adapting them to new working methods is necessary to be considered competent. According to Weimer (2002), this implies a deviation from the classical frontal teaching, in which the kinesiologist is at the centre of the training process, to modern work methods, in which the student or athlete is placed at the centre. The pedagogical practice of kinesiologists and coaches within training programs plays a significant role in the education of their athletes, contrary to the popular opinion that pedagogical practice belongs exclusively to school systems. This is confirmed by the research conducted by Visak et al. (2015), who determined that the coach's attitude towards the athlete is the second reason for engaging in sports activity. This underscores the vital role of kinesiologists and coaches not only in the development of physical abilities but also in the development of traits and social characteristics. Young people are involved in various sports activities not only because of the sports program offered but also because of the coach's relationship with them and because of the emotional atmosphere that the coach brings to the training program (Jowett, 2017). Athletes perceive coaches precisely through their feelings towards the coach and behaviour during training sessions (Gomes et al., 2020). All the listed characteristics that the coach and kinesiologist bring into the training programs should create a quality relationship with the student/athlete and their intention to stay within the preferred sports activity. Previous research has established the link between a quality relationship between coaches and athletes and athletes' enjoyment of sports (Gardner et al., 2016). If the kinesiologist/coach does not have a quality relationship with their athletes/students, negative feelings will arise, and they will eventually give up sports activities. Factors that often cause students/athletes to give up sports are an autocratic style of physical activity, frequent emphasis on the importance of winning, conflicts with a coach/kinesiologist, and lack of encouragement (Rottensteiner et al., 2015; Birr et al., 2023). Students/athletes observe the behavioural patterns of their coaches and teachers and often apply them in their interactions with peers (Alajbeg & Kovačević, 2019). The role of coaches and teachers is not only to transfer knowledge and teach sports skills but also to provide pedagogical support. Kinesiologists/coaches who possess pedagogical competencies and improve their work and relationships with students/athletes can expect sports progress from their students/athletes (Čokorilo et al., 2011; Stone et al., 2021). Consequently, the importance of pedagogical competencies in all subjects of education, including kinesiologists/trainers, is evident. Therefore, it is important to research this topic to gain insight into the state of pedagogical competence and consequently act on potential shortcomings.

Furthermore, the research intends to assess the pedagogical competence of kinesiologists and coaches through self-reflection. The goal is to identify specific areas for improvement in pedagogical

education and practices, with the potential to significantly contribute to the professional development of kinesiologists and coaches. This study aims to establish specific areas of pedagogical education and practice with the overall aim of enhancing and advancing the profession.

2. Materials & Methods

2.1 Participants

A total of 217 kinesiologists (BA and MA) and 85 trainers who completed coaching school in Croatia participated in this research. Among them, 175 were male and 127 were female. The respondents are employed in primary or secondary schools (N = 184), sports clubs, sports associations, sports or recreation centres (N = 112), and kindergartens (N = 6). The directors of these institutions played a crucial role in the research, approving the implementation and forwarding the questionnaire to their employees/kinesiologists for inspection. The kinesiologists/trainers were given the opportunity to participate in the research by filling out the questionnaire and could withdraw at any time. The research followed the ethical principles outlined in the 1964 Declaration of Helsinki, with appropriate modifications and updates reflecting current ethical standards.

2.2 Data collection

The survey utilized the "Self-assessment of Pedagogical Competence of the Teacher's Role" questionnaire (Kostović-Vranješ & Ljubetić, 2008), which was meticulously modified for kinesiologists' assessments of pedagogical competence. This thorough modification process ensured the questionnaire's relevance and accuracy. It included four independent variables (gender, years of service, education, and employment) and 26 dependent variables related to kinesiologists' self-assessment of their pedagogical competencies. Each dependent variable was assessed on a Likert-type scale ranging from 1 (never) to 5 (always). The questionnaire was distributed to the directors of institutions or directly to kinesiologists. After completion, it was returned to the researchers.

2.3 Data Analysis

After collecting the questionnaires, we analyzed the answers using IBM SPSS Statistics, a system for statistical data processing. The frequency of the data determined how often a particular value appears in each variable. Descriptive statistics were used to determine the questionnaire's reliability, and Cronbach's alpha was found to be 0.98, indicating high reliability. Additionally, descriptive statistics were used to analyze the year of service variable regarding normality and breakdown descriptions.

Our factor analysis was meticulously conducted. We employed the Principal Component Analysis (PCA) model with oblique rotation of Oblimin with Kaiser normalization to validate our findings, instilling confidence and trust in our research results. This approach allowed us to identify clearer manifest variables within the factor. Subsequently, the extracted factors were named, further reinforcing the validity of our analysis.

3. Results

Breakdown descriptive statistics (Table 1) determined the arithmetic mean of the participants' responses regarding the years of service.

Years of service	Number of participants by years of service	By instinct, I know what children or athletes need. M	For the proper treatment of children or athletes, I need more knowledge. M
0-5	72	3.86	3.08
6-10	52	3.98	2.69
11-15	52	3.83	2.52
16-20	29	3.97	2.52
>20	97	3.99	2.45
Total:	302	3.93	2.66

Table 1: arithmetic mean of the participants' responses regarding the years of service.

After descriptive statistics was performed, the obtained results were processed by factor analysis in which 6 factors were extracted out of 26 manifest variables of kinesiologists' pedagogical competence. EFA was conducted using Principal Component Analysis (PCA) with Oblimin rotation to identify coherent factor structures. The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, $KMO = 0.86$ ('excellent' according to Field, 2024), and Bartlett's test of sphericity, $\chi^2(325) = 1023.5$, $p < .001$, indicated that correlations between items were sufficiently large for PCA. An examination of the pattern and structure matrices representing the parallel and orthogonal projection enabled an overview of the variables describing the extracted factors (Table 2).

Bibliography

- Surname(s), Initial(s), (year), *Title italic* (Edition if applicable). Place of publication: Publisher.
- Hirnstain, Marco, H. (2016). *How to Write a Bachelor Thesis in (APA) Style*. Program for universitetspedagogikk, Universitetet i Bergen
- Pauwels, Mannay, Pauwels, Luc, & Mannay, Dawn. (Cur.). (2011). *The Sage handbook of visual research methods*. Los Angeles: Sage.
- Pauwels, Mannay, Pauwels, Luc, & Mannay, Dawn. (2019). *The Sage handbook of visual research methods* (2nd ed.). Los Angeles: Sage.
- Woodruff, C. C. (2018). Reflections of others and of self: The mirror neuron system's relationship to empathy. In L. Stevens & C. C. Woodruff (Eds.), *The neuroscience of empathy, compassion, and self-compassion*. (pp. 157-187). Elsevier Academic Press.
- West, M., & George, C. (1999). Abuse and violence in intimate adult relationships: New perspectives from attachment theory. *Attachment & Human Development*, 1(2), 137-156
- Knudson, M. C. (2012). Attachment in adult relationships: A feminist perspective. *Journal of Family Theory & Review*, 4(4), 299-305. <https://doi-org.ezproxy.unibg.it/10.1111/j.1756-2589.2012.00141.x>