



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 29<sup>th</sup> – June 1<sup>st</sup>, 2024  
S. Agostino, Bergamo



Edited by Nicole Bianquin and Francesco Magni





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 29<sup>th</sup> – June 1<sup>st</sup>, 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](http://www.dsus.unibg.it)

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

ATEE – Association for Teacher Education in Europe // [www.atee.education](http://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.

# **Informal Support Teacher Networks: training and self-training between Communities of Practice**

Barbara Bocchi, *University of Trieste*, barbara.bocchi@units.it

Elena Bortolotti, *University of Trieste*, ebortolotti@units.it

Paola Damiani, *University of Modena and Reggio Emilia*, paola.damiani@unimore.it

## **Abstract**

The connection between teacher training, both initial and in-service, and the quality of education has been extensively discussed, particularly since the enactment of Law 107/2015. The emphasis has primarily been on formal training, which, however, has proven inadequate in terms of both utilisation and content. When examining the nature of teachers' knowledge and the dynamics within schools, the significance of informal training becomes evident. As knowledge derived from practice is often implicit, situated, and dynamic, communities of practice and informal exchanges among teachers play a crucial role in sharing and constructing this knowledge. This necessitates a reconsideration of the structure of educational institutions, the enhancement of intermediate functions of teachers, and the contemplation of new professional roles to support this restructuring. This paper aims to propose an investigative methodology that can assist pedagogical research in exploring informal digital networks among teachers as well.

**Keywords:** support teacher; communities of practice; initial training; in-service training; netnography.

## 1. Introduction

Communities of practice and learning are social spaces in which individuals engage in the organisation and dissemination of high-quality knowledge, accessible to all participants. Within these communities, members have the opportunity to learn from one another's experiences, fostering a collective process of knowledge construction. The concept of a community of practice is grounded in a vision of learning as a social and experiential process, characterised by dynamic interactions through which participants negotiate meanings and develop shared understandings.

According to Wenger (1998), three key elements define a community of practice: the domain, the community, and the practice. A community of practice is not merely an informal gathering or a network of professional contacts, but a structured social entity with a shared identity built around a common area of interest. Members actively engage in joint activities, address relevant issues, share resources, and cultivate relationships that promote mutual learning. What sets communities of practice apart is the sharing of specialised practices and a repertoire of resources—including experiences, narratives, tools, and strategies for problem-solving. Such collaborative learning processes require time and consistent interaction in order to fully develop and consolidate.

Within these communities, teachers can harness their tacit knowledge through two fundamental processes: storytelling and critical reflection. Storytelling plays a central role in helping educators structure and make sense of their professional experiences. By sharing narratives, teachers disseminate practical knowledge and co-construct shared meaning within the group. This narrative process also contributes to shaping and consolidating professional identity, reinforcing individuals' self-perception and their roles within the community.

Critical reflection is equally vital to the development of educational practices. It enables teachers to analyse their actions, decisions, and underlying pedagogical assumptions in depth, while exploring the theories and models that influence their approach. Reflective practice supports the identification of personal beliefs, the questioning of habitual routines, and the ability to respond to unanticipated situations. Professional dialogue within these reflective communities is fundamental to knowledge exchange and co-construction.

The advent of the internet has significantly expanded opportunities for developing online communities of practice (OCOPs), enabling interaction and collaboration regardless of geographical boundaries. These virtual spaces allow educators to engage in voluntary collaborative learning, reflect on their practices, and access emotional and professional support from peers. Digital tools such as blogs, messaging platforms (e.g., WhatsApp), and educational environments (e.g., Google Classroom) play a key role in facilitating the exchange of ideas and the co-construction of knowledge. Through these platforms, teachers can share resources, discuss innovative approaches, and adapt strategies to their specific teaching contexts. Mobile devices further enhance flexibility, enabling continuous participation in community activities on the go.

Despite the growing relevance of online communities of practice, the existing literature remains limited in analyzing how teachers interact within these virtual environments. For example, Macià and Garcia (2016) examined the impact of online CoPs on professional development but focused primarily on the university context. Further research is needed to explore the dynamics of teacher interaction across various educational levels within online communities.

In contrast to traditional Communities of Practice—where membership typically requires explicit or implicit validation from existing members, reflecting the notion of legitimate peripheral participation (Lave & Wenger, 1991) online communities are generally more open and accessible. Entry usually involves minimal barriers, requiring only internet access and the appropriate platform. The use of computer-mediated communication (CMC) allows for scalable, asynchronous, and multi-directional interaction, often resulting in larger and more geographically dispersed memberships than those found in conventional CoPs.

However, the implications of community size for the formation and sustainability of CoPs remain a subject of scholarly debate (Roberts, 2006). While a larger member base can enrich the community's collective knowledge and expose individuals to diverse experiences, it may also hinder the establishment of shared meaning and a unified sense of purpose. Interactions may become sporadic

and unsustainable, and difficulties in developing or maintaining a shared repertoire can lead to disengagement. These factors may impede identity formation and, in some cases, lead to the dissolution of the community. Nevertheless, as members become more proficient in the use of CMC, they are increasingly able to express emotion and non-verbal cues, thereby narrowing the communicative gap often associated with digital interaction.

A common feature of online communities is the uneven level of participation among members, with a small core group contributing frequently while the majority engage sporadically (Baym, 1999; Finholt & Sproull, 1990). This imbalance can challenge the emergence of vibrant online CoPs, as more active members may become disheartened by the low involvement of others. However, online environments may be better equipped to manage this dynamic. Even if individual contributions from less active members are limited, their aggregate input can still be significant due to their sheer numbers. Moreover, the persistent nature of CMC ensures that these contributions remain visible, thereby enhancing the perceived level of engagement. Nonetheless, the actual impact of "light" participation on the effectiveness and sustainability of online communities warrants further empirical investigation (Zhang & Watts, 2008).

This study explores the use of WhatsApp as a professional development tool for teachers. WhatsApp offers an accessible, user-friendly platform that facilitates immediate and informal communication among members. Teachers use it to share experiences, discuss pedagogical strategies, solve problems collaboratively, and provide mutual support. In the context of communities of practice, WhatsApp interactions often reflect the same dynamics as offline networks, with the added advantage of flexibility and constant availability.

To fully harness the potential of both online and offline communities of practice, educational institutions must acknowledge their value and actively support their development. This involves investing in appropriate resources—including funding, technological infrastructure, and training opportunities—and creating environments that foster collaboration, socialization, and knowledge sharing. Online communities of practice offer powerful avenues for professional growth, equipping educators to navigate evolving educational challenges. Future research should continue to explore the dynamics of these communities, focusing on the behaviors, motivations, and barriers that shape teachers' participation. As digital technologies become increasingly embedded in educational practice, a comprehensive approach that integrates both in-person and virtual interactions is essential to fostering inclusive, sustainable, and effective learning ecosystems.

## **2. Methodology**

Therefore, this study was also conducted using the netnography method (Özüdoğru, 2014). In this study, messages shared by special education teachers (or future teachers) on WhatsApp, a mobile chat application, were considered. WhatsApp messages for 12 months: from April 2023 to April 2024, were included in the data for the study. WhatsApp is a mobile application programme. WhatsApp Messenger is a cross-platform smartphone messaging system that uses existing internet data plans to connect users' learning communities. Users interacting online are visible at all times. They can have synchronous and asynchronous conversations within their social networks. Users can send photos, voice recordings and videos. From a technical viewpoint, this programme can be considered as a social network, where people have quick access to a variety of information. WhatsApp allows users to connect with anyone who has a smartphone, an active internet connection and has downloaded the application. In addition, users can create groups, and add and remove people. Participants have equal rights in this programme (Bouhnik & Deshen, 2014). Content analysis was used in this study to analyse the WhatsApp correspondences that served as the data source. Content analysis can be seen as an attempt to condense qualitative data in order to identify and make sense of consistent aspects within the large amount of data obtained, according to Patton (2002). Initially, open coding was used, which resulted in the identification of fifteen codes. In this context, the messages were read one by one and coded. The codes were then reviewed, leading to the creation of subcategories and a reduction in the total number of codes (four main categories and eleven subcategories). These codes were organised into

overarching themes in the next step. These themes were then subjected to final refinement and interpretation. Comparison with the literature validated the emerging themes. In addition to comparison with the reference literature, the frequency with which the categories appear allows us to understand the pattern of interests, needs and problems identified by teachers over a short or longer time. And also how the wider school context influences these.

### **2.1 Research Objectives**

This study focused on the use of WhatsApp as an online community of practice by teachers (or future teachers) for their professional development. Therefore, in the context of communities of practice, the sharing among teachers on WhatsApp, the subject of this study, was investigated. Teachers have been observed to use online learning applications extensively for their professional development (Macia & Garcia, 2016; Cranefield & Garcia, 2016; Lantz-Andersson, Lundin & Selwyn, 2018).

The question we asked ourselves was: how can the online community of practice be studied? Do we have the elements to infer teachers' professional development?

### **2.2 Research Sample**

The data collection was based on WhatsApp chat created by students of the course for supporting teachers of the VIII cycle from different universities. The group includes former students from previous cycles (VI and VII) as moderators and 126 students. The choice of the group was not probabilistic but of convenience. Indeed, it was not easy to enter the group to observe the internal dynamics. Before analysing the chat interventions, the participants were informed about the research. They were asked to answer questionnaire to provide contextual information.

This study only considered written interventions in the WhatsApp chat. These were analysed using content analysis and served as the primary data source.

## **3. Results**

Therefore, this study was also conducted using the netnography method (Özüdoğru, 2014). In this study, messages shared by special education teachers (or future teachers) on WhatsApp, a mobile chat application, were considered. WhatsApp messages for 12 months: from April 2023 to April 2024, were included in the data for data collection, a WhatsApp chat created by students enrolled in the "TFA Sostegno" course of the eighth cycle from various universities was analyzed. The group included moderators who were former students from previous cycles (VI and VII, in particular). Before beginning the analysis of chat interactions, participants were informed about the research, and they were asked to complete a brief questionnaire to provide contextual information. The majority of the group (98%) responded to the questionnaire. The chat group consists of 174 participants. The majority identified as female (86%), with the remaining 14% identifying as male. In terms of age distribution, 38% were between 40-49 years old, 33% were 30-39, 20% were 50-59, 7% were 21-29, and the remainder were 60 years or older. Most participants had attained a Master's degree (68%), while 30% reported having completed postgraduate studies, and only 2% held a high school diploma. Regarding teaching levels, 70% of participants teach (or are enrolled to qualify to teach) at the primary school level, 4% at preschool, 18% at lower secondary school, and 8% at upper secondary school. In terms of teaching experience, 48% had been teaching for at least 4 years, 27% for 0-3 years, 14% were not yet teaching, 6% had 11-20 years of experience, and 5% had been teaching for over 20 years. Once the profile of the chat participants was established, attention turned to identifying how many members were actively engaged (i.e., contributing at least one message over a two-week period). On average, at least 70% of participants interacted in the group (excluding emojis or stickers) within a two-week timeframe. For this study, only written contributions in the WhatsApp chat were considered. These messages were analyzed through content analysis, forming the primary data source for the research.

## 4. Analysis and Discussion of Data

In this study, content analysis was employed to examine the WhatsApp correspondences, which served as the primary data source. According to Patton (2002), content analysis can be considered a qualitative data reduction effort aimed at identifying consistent aspects of extensive data and making sense of them. Initially, open coding was performed, resulting in the identification of fifteen codes. In this process, the messages were individually read and coded. Subsequently, the codes were reviewed to create subcategories, reducing the total number of codes to four macro-categories and six subcategories. In the next phase, these codes were organized into broader themes. These themes were then finalized and interpreted. A comparison with the literature validated the emergent themes. The identified macro-categories are as follows:

- Discussions on specific field knowledge: Topics related to special pedagogy and school legislation, particularly regarding inclusion.
- Discussions on school practices: Exchanges of activities, suggestions regarding approaches, and methodologies.
- Emotional support: Motivational phrases to acknowledge efforts and achievements, as well as expressions aimed at fostering mutual trust.
- Non-relevant messages: For example, messages about selling materials (such as books and notes) used in various courses, as well as personal photos.

Categories	Sub-categories	Occurrence	Percentages (of total)
<b>Domain-specific knowledge discussions</b>	Comparison and reflection on theoretical issues	23	6,2%
	Regulatory comparisons and considerations	27	7,3%
	Specific training guidance and suggestions	52	14,1%
	Information on access to the teaching profession.	38	10,3%
<b>Discussions related to school practices.</b>	Comparison of experiences and educational interventions in schools	33	9%
	Suggestions for classroom activities/materials	116	31,9%
	Suggestions/sharing of inclusive extracurricular activities/projects in the area aimed at students.	41	11,1%
	Request to complete questionnaires.	8	2,2%
<b>Emotional support</b>	Words of encouragement	20	5,5%
<b>Non-relevant messages</b>	Sale of materials	6	1,7%
	Personal messages or photos	3	0,8%
<b>Total</b>		367	100%

*Table 1: macro-categories and description*

Below is an example excerpt and the corresponding initial analysis:

M1: I'd like to say what I think about what's been said recently about special classes. Premise: I am for inclusion and I am doing the TFA; I have been trained and I am still being trained. I am doing a placement and I am working and in the contexts where I live I am experiencing everything but inclusion. The reflection that comes to me is this: why are we all scandalised by accepting the proposal of differentiated classes? To be honest, I might accept it better than the pseudo-inclusive teachers who cover up exclusive practices by passing them off as something else [...]

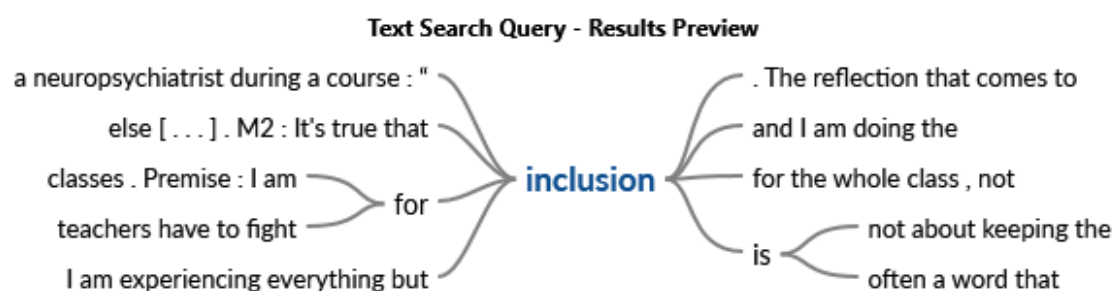
M2: It's true that inclusion is often a word that is spoken but not practised. Unfortunately, compulsory schooling remains one of the few, if not the only opportunity for some children to be with their peers. Unfortunately, nothing is left to relate to them afterwards. So what little we have gained... I would keep it. Then the fact that it is a flawed system is well known...especially to us support teachers [...].

M3: But I remember the words of a neuropsychiatrist during a course: "Inclusion is not about keeping the child in the classroom at all costs, it's about giving them the same opportunities...to learn, to grow and to have fun.

M4: We support teachers have to fight for inclusion for the whole class, not just the student we are following, with the tools we have...Everyone is responsible for their own actions...It takes courage and intelligence to change the school system...on a daily basis...the tools are there...it is up to us to put them into practice.

M5: Everyone does what they can. The ICF model often talks about barriers and facilitators. When the barriers are your own colleagues, it's difficult.

From this brief excerpt of a conversation, we analysed the occurrence of the most frequent words, highlighting their semantic connections. Below is an example.



Grafich 1: semantic analysis

What is inclusion? What they think inclusion is and how do they position themselves about it? Is there a common understanding of the idea of inclusion? How does it fit in with the theoretical idea of inclusion?

Some possible considerations:

- We have seen that the occurrence of categories varies considerably according to the school period: in particular, given the recruitment of school staff or of school deadlines when certain documentation is required, certain categories (and subcategories) increase or decrease;
- We have seen that perhaps due to a more informal environment, teachers' beliefs and perceptions are more likely to emerge.

## 5. Final reflections

This online learning community is a great example of how teachers support each other through professional challenges, share resources and offer emotional support. However, it is difficult to ascertain the extent to which teachers in training and in-service learn from one another in this context. The absence of a clearly defined reference framework, coupled with the influence of numerous uncontrollable variables, makes it difficult to accurately assess the impact of the online community on professional development.

This study suggests that Communities of Practice Online (CdPO) could be linked to formal in-service training initiatives, which could be beneficial. Participants questions and doubts could be tracked by integrating these communities into structured professional development programs. These issues could then be addressed systematically, and emerging ideas revisited during subsequent group meetings. This approach could foster a more dynamic interplay between formal and informal learning spaces.

The analysis highlights the immediacy with which CdPOs respond to practitioners. These communities serve as platforms for sharing teaching materials, acquiring new knowledge, seeking emotional support and accessing timely information. While such responsiveness is valuable, we need to investigate further how these interactions influence teachers and practices. Without additional data and contextual insights, the impact of the community on long-term pedagogical changes remains uncertain.

Another intriguing avenue for exploration is the role of digital cues, such as emoticons and likes, in fostering emotional support and cohesion within the community. Although seemingly minor, these elements influence the tone and quality of interactions, potentially fostering mutual trust and solidarity among members. Including these aspects in future analyses could provide valuable insights.

In the context of continuous teacher training, the use of WhatsApp as a tool for micro-learning represents an effective and flexible strategy. By regularly sending brief educational content—such as theoretical insights, meaningful quotations, reflective prompts, summary sheets, or short videos—it is possible to promote continuous, gradual, and contextualized learning. This approach, based on frequent exposure to targeted and easily accessible materials, fosters personal reflection and metacognitive activation regarding one's own teaching practices. Reflections can be encouraged individually or in a shared manner, thus stimulating peer-to-peer discussion and collaborative knowledge construction. Moreover, micro-learning via WhatsApp allows for the enhancement of otherwise idle moments in the workday, turning them into opportunities for accessible, immediate, and sustainable professional development.

## Bibliography

- Bouhnik, D., & Dshen, M. (2014). WhatsApp goes to school: Mobile instant messaging between teachers and students. *Journal of Information Technology Education. Research*, 13, 217.
- Crane, J., & Yoong, P. (2009). Crossings: Embedding personal professional knowledge in a complex online community environment. *Online Information Review*, 33(2), pp.257-275.
- Damiani, P. (2011). Le dimensioni implicite e affettive nelle relazioni a scuola ed il successo scolastico. *Formazione & Insegnamento*, IX, 2, pp. 77-89.
- Lantz-Andersson, A., Lundin, M., & Selwyn, N. (2018). Twenty years of online teacher communities: A systematic review of formally-organized and informally-developed professional learning groups. *Teaching and teacher education*, 75, pp. 302-315.
- Macià, M., & García, I. (2016). Informal online communities and networks as a source of teacher professional development: A review. *Teaching and teacher education*, 55, pp. 291-307.
- Özudođru, G. (2022). The effect of distance education on self-efficacy towards online technologies and motivation for online learning. *Journal of Learning and Teaching in Digital Age*, 7(1), 108-115.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Suárez-Lantarón, B.; Deocano-Ruíz, Y.; García-Perales, N.; Castillo-Reche, I.S. (2022). The Educational Use of WhatsApp. *Sustainability*, 14, pp. 1-14.
- Wenger, E. (1998). Communities of practice: Learning as a social system. *Systems thinker*, 9(5), pp. 2-3.
- Zhang, W., & Watts, S. (2008). Online communities as communities of practice: a case study. *Journal of Knowledge Management*, 12(4), pp. 55-71.