



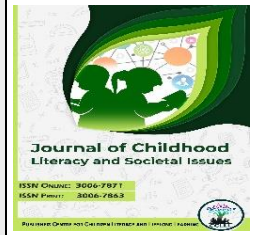
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# Bridging Theory and Practice: Enhancing Teacher Preparedness through Action Research in Norway

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| <p><b>Affiliations</b></p> <p><sup>1</sup> Advocate High Court, Member District Bar Association Kotli, AJ&amp;K Bar Council, Muzaffarabad, Pakistan Occupied Jammu &amp; Kashmir, PAKISTAN.</p> <p><b>Email:</b> <a href="mailto:junaidstarrbutt@yahoo.com">junaidstarrbutt@yahoo.com</a></p> <p><b>iD</b> <a href="https://www.orcid.org/0009-0000-0530-962X">https://www.orcid.org/0009-0000-0530-962X</a></p> <p><sup>2</sup> Science Teacher at Anjuman Himayat-i-Islam, Intellectual and Social Welfare Organization, Lahore, Pakistan.</p> <p><b>iD</b> <a href="https://orcid.org/0009-0009-9956-663X">https://orcid.org/0009-0009-9956-663X</a></p> | <p><b>Abstract</b></p> <p>This research article explores how action research empowers educators and boosts their readiness to excel in Norway's dynamic educational landscape. With a growing emphasis on evidence-based teaching practices, the integration of research training into teacher education programs has become increasingly crucial. This study explores how action research serves as a bridge between theoretical knowledge and classroom practice, empowering educators to critically reflect on their teaching methods and implement evidence-based strategies. Drawing on data collected from experienced teachers engaged in action research projects, this paper examines the impact of such initiatives on teacher professional development and student learning outcomes. Through empirical investigations and case studies, this research explores the impact of inquiry-based learning, blended learning approaches, differentiated instruction, and authentic assessment on student learning outcomes. Furthermore, it investigates the integration of research training into teacher education programs, the role of mentorship in teacher development, and the effectiveness of professional development initiatives in empowering educators. Findings highlight the value of action research in fostering a culture of continuous improvement within Norwegian schools, facilitating collaborative learning communities, and ultimately enhancing teacher efficacy and student achievement. Implications for teacher education programs and recommendations for future research are discussed.</p> <p><b>Keywords:</b> Research Fusion; Blending Brilliance; Innovative Pedagogy; Unlocking Potential; Norwegian Education.</p> |  |
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## Introduction

In his final official speech as President of the Union of Education Norway (UEN), Steffen Handal, also a member of Education International (EI) Executive Board, reflected on educational realities in his country and around the world: “Never has the shortage of teachers been more pressing than now! Never have more teachers said that they consider changing to another profession, even when they love their profession!”. In the dynamic landscape of education, the integration of theory and practice is essential for fostering effective teaching methodologies and enhancing student learning outcomes. Recognizing the significance of this integration, educational institutions worldwide are seeking innovative approaches to bridge the gap between theoretical knowledge and classroom application. In recent years, the pursuit of educational excellence has driven scholars and practitioners alike to explore innovative avenues to enhance teacher preparedness. Among these avenues, action research stands out as a dynamic approach that not only bridges the gap between theory and practice but also empowers educators to actively engage in reflective and transformative processes within their own classrooms. This research article delves into the unique landscape of doctoral research studies scholarship in Norway, where a distinctive model has been employed over the past four years. This model combines rigorous research training with a 25% teaching obligation, offering doctoral candidates a comprehensive platform to develop both scholarly expertise and practical pedagogical skills. Norway's commitment to fostering a culture of inquiry and continuous improvement in education is exemplified through its integration of action research within doctoral training programs. By immersing aspiring educators in real-world teaching environments while simultaneously nurturing their research capabilities, this approach addresses the evolving demands of modern education. Through a synthesis of theoretical frameworks and hands-on

classroom experiences, doctoral candidates in Norway are equipped not only to advance academic knowledge but also to enact meaningful change within educational settings. This article explores the multifaceted benefits of the Norwegian doctoral research studies scholarship model, shedding light on its impact on teacher preparedness and professional development. Drawing upon empirical evidence and scholarly insights, we examine how this integrated approach fosters a symbiotic relationship between theory and practice, ultimately enhancing the quality of education delivery. Furthermore, we delve into the experiences and perspectives of doctoral candidates who have participated in this program, offering valuable insights into the transformative journey from student to scholar-practitioner. Through a comprehensive analysis of the Norwegian context, this research contributes to the broader discourse on teacher education and professional development. By elucidating the synergies between academic research and practical application, we aim to inspire educators and policymakers worldwide to embrace innovative approaches that empower teachers as agents of change. As we navigate the complex landscape of 21st-century education, the integration of theory and practice through action research emerges as a powerful catalyst for educational excellence and societal progress.

## Research Problem

Despite the integration of doctoral research studies scholarships in Norway, which include a three-year research training period and a 25% teaching obligation, there remains a gap in understanding how this model effectively enhances teacher preparedness. This research aims to investigate the efficacy of this integrated approach in preparing teachers for the demands of their profession, specifically focusing on the intersection of theoretical knowledge gained through research and practical application in classroom settings. The research problem revolves around exploring the extent to which the

doctoral research studies scholarship effectively bridges the gap between theory and practice, thereby enhancing teacher preparedness in Norway.

## Research Questions

In the field of education, the perpetual challenge lies in bridging the chasm between theoretical understanding and practical application. Nowhere is this more evident than in the preparation of teachers, where the ability to seamlessly integrate pedagogical theory with real-world classroom dynamics is paramount. In Norway, doctoral research studies scholarship has emerged as a significant avenue for cultivating the next generation of educational leaders. Notably, these programs, spanning four years and incorporating research training alongside a 25% teaching obligation, offer a unique opportunity to explore the intersection of theory and practice. This article delves into the central inquiry:

**Q.** How does the integration of action research within doctoral research studies scholarship in Norway, which spans four years and includes research training alongside a 25% teaching obligation, enhance teacher preparedness in bridging theory and practice?

Through an examination of the specific area of doctoral education in Norway, this study seeks to illuminate the efficacy of action research as a transformative tool for educators, shedding light on its potential to enhance teaching readiness and foster a more dynamic educational landscape.

## Research Objectives

- Investigate the current landscape of doctoral research studies scholarship in Norway, particularly focusing on the integration of action research methodologies.
- Examine the structure and components of the doctoral programs in Norway that involve a four-year duration, including

research training and a 25% teaching obligation.

- Evaluate the effectiveness of action research as a pedagogical tool within these doctoral programs in bridging the gap between theoretical knowledge and practical teaching skills.
- Assess the impact of the research training component on the preparedness of doctoral students to engage in action research and apply theoretical concepts in educational practice.
- Identify the challenges and opportunities encountered by doctoral students participating in these programs, particularly in relation to balancing research commitments with teaching responsibilities.
- Explore the perceptions and experiences of stakeholders, including students, faculty members, and educational institutions, regarding the implementation of action research within doctoral education in Norway.
- Provide recommendations for enhancing the integration of action research into doctoral programs in Norway to further improve teacher preparedness and promote the effective translation of theory into practice.

## Literature Review

Westbroek et al. (2024) highlights that goal-system representation 'GSR' tool facilitates professional dialogue by making implicit teaching practices and pedagogical motives explicit and shareable, thus enhancing student teachers' personal theories. It helps bridge the gap between theory and practice by fostering goal-means connections and encouraging deeper exploration of theoretical concepts. Wells et al. (2023) critically examines the theory-practice divide in initial teacher education (ITE) through the lens of process drama. Based on research in

Aotearoa New Zealand, the study explores ITE students' experiences of embodied learning both on campus and in primary schools. Resch et al. (2022) highlights the Austrian 'Partner School Programme' as a model for bridging the theory-practice divide in teacher education by fostering collaboration between universities and schools. It emphasizes the importance of integrated fieldwork approaches, such as project-based learning, community-based research, and service-learning, to enhance pre-service teachers' reflective practice and better prepare them for their teaching careers. Phillips and Condry (2023) highlights disconnect between university-based theoretical instruction and practical school teaching experience in teacher education programs. It calls for creating hybrid spaces to merge theory and practice, emphasizing the need for more coordinated field experiences and better support for pre-service teachers, as well as more involvement from teacher educators in real-world classroom settings to bridge the gap. Sharma and Mullick (2021) identifies key challenges faced by teacher education programs and proposes the CHANGE framework—focusing on collaboration, hands-on activities, assessment of readiness, networking, greater contact with diverse learners, and effective coaching—to bridge the gap between theory and practice in inclusive education, adaptable to various country contexts. Kyriakides et al. (2024) emphasizes tailoring professional development to the specific needs and improvement priorities of teachers, using a framework that categorizes teachers into three stages based on their assessment skills. A study across four European countries demonstrated that the Dynamic Approach 'DA' effectively enhanced teachers' assessment skills and had varying positive impacts on student learning outcomes in mathematics. Long et al. (2024) provides the significant role of positive emotions in mediating the relationship between emotional intelligence and various professional outcomes, such as teaching enthusiasm, professional identity, and teacher-student relationships among novice teachers. The study

reveals that while emotional intelligence influences professional growth, only positive emotions contribute to enhancing these key aspects of teaching practice. Weissenbacher et al. (2024) enhances our understanding of academic success by identifying distinct predictive patterns among various criteria, highlighting the roles of cognitive traits like verbal ability and non-cognitive traits such as intrinsic motivation in academic achievement and retention. These findings offer practical implications for educators and policymakers, suggesting tailored interventions that can foster intrinsic motivation and support students with risk factors to improve educational outcomes and retention rates. Kyriakides et al. (2024) underline Dynamic Approach (DA) to Teacher Professional Development (TPD) emphasizes the need to tailor development based on individual teacher assessment skills, which were classified into three stages for targeted improvement. A study across four European countries demonstrated that the DA effectively enhanced teachers' assessment skills and had varying positive impacts on students' cognitive and metacognitive learning outcomes in mathematics. Mentel et al. (2024) examines the effects of a theory-practice-based professionalization program on student teachers' knowledge, motivation, and beliefs during their university education, revealing that the program positively influences their professional competence. It emphasizes the importance of in-depth theoretical training that is directly applicable in the school context, offering valuable insights for designing effective teacher education programs in their early phases. Elm and Liljestrand (2024) highlight the importance of critical reasoning in using digital technology effectively, suggesting that university courses should foster this awareness to improve pedagogical choices and outcomes in teaching. Guberman et al. (2024) evaluates two retraining projects aimed at addressing Israel's STEM teacher shortage, revealing retention rates of 78% for academic professionals and 62% for practical engineers. Recommendations for improving

retention include enhanced pedagogical preparation, better school support, increased wages, and fostering professional autonomy and principal support. Giurastante (2024) reveals that lower secondary foreign language teacher educators at a Swiss University are significantly motivated by relational aspects, particularly their connections with student teachers and colleagues. Insights from the findings can guide policymakers and the academic community in enhancing teacher education and better supporting teacher educators. Dreer-Goethe (2024) highlights that student teachers experience a complex emotional landscape during practical phases, with significant co-occurrence of mixed emotions, particularly between stress and positive feelings like excitement and confidence. Over time, as student teachers gain experience, the prevalence of mixed emotions decreases while positive emotions increase, indicating improved emotional regulation and professional development throughout their field experiences. Wahab (2023) conducted a quantitative study and proved that reading habits of teachers is directly connected with their employed classroom methodologies. Tammets et al. (2024) emphasizes the need for a collaborative school culture to enhance student-centered learning (SCL) during emergency remote teaching (ERT), revealing that effective SCL practices are often constrained by school-level factors, including leadership styles. Future research should investigate how different leadership approaches can foster environments that support diverse teaching methods, while also addressing the limitations of relying solely on self-reported data to capture the complexities of teachers' experiences in adapting to ERT. Wang et al. (2024) compares the competencies outlined in the national teacher education frameworks of Finland and China, highlighting key differences such as the greater emphasis on ethics, student management, and assessment in China, versus adaptive teaching, innovation, and partnering in Finland. Despite significant contributions from prior studies, gaps remain in the literature

concerning how action research can specifically enhance teacher preparedness by bridging the theory-practice divide in different educational contexts, such as Norway. While Westbroek et al. (2024) introduced the GSR tool to facilitate professional dialogue, and Wells et al. (2023) explored embodied learning in New Zealand, there is limited research on how action research frameworks can integrate these elements within Norwegian teacher education programs. Additionally, studies like Resch et al. (2022) and Phillips and Condy (2023) emphasize collaborative and field-based approaches, yet further exploration is needed to evaluate how action research can facilitate these practices in Norway's unique educational landscape. Moreover, although the emotional and motivational aspects of teacher development, as discussed by Long et al. (2024), offer valuable insights, there is a paucity of research connecting these emotional factors with the outcomes of action research in fostering reflective teaching practices. Addressing these gaps could enrich the understanding of how action research can be tailored to specific national contexts to enhance teacher readiness.

## Research Design

The study employed a mixed-methods approach to explore the role of action research in enhancing teacher preparedness among doctoral students in Norway. A survey was administered to doctoral students in research scholarship programs, gathering data on their experiences, perceived benefits, and challenges with action research. Descriptive and inferential statistics, including regression analysis, were used to analyze these relationships. Semi-structured interviews with students, faculty, and educational stakeholders provided qualitative insights, analyzed through thematic analysis to identify recurring themes. Additionally, program documents and curriculum guides were reviewed to assess the integration of action research in doctoral education. A comparison with existing literature contextualized the findings, contrasting the

Norwegian experience with global practices. Finally, the integration of quantitative and qualitative data offered a comprehensive understanding of action research's impact, with implications for policy, practice, and future research aimed at improving teacher preparedness in Norway and beyond.

### **Action Research as a Tool for Teacher Development**

Action research has emerged as a powerful tool for teacher development, offering a structured yet flexible approach to bridging the gap between theory and practice. Recent investigations revealed that several student teachers were critical of the research approaches they learned and the estimated value of writing a master's thesis for their professional work (Bakken & Langørgen, 2024; Olsen et al., 2022). By engaging in cycles of planning, action, observation, and reflection, teachers can critically examine their own teaching practices, adapt theoretical concepts to real-world classroom settings, and make data-driven improvements. This process not only deepens teachers' understanding of pedagogical theories but also fosters a culture of continuous professional growth. In the context of Norwegian education, action research provides a framework for teachers to collaborate, reflect on student learning outcomes, and refine their instructional strategies in alignment with local educational goals and challenges. Action research has been used in the bachelor thesis in the third year of the piloted master's-based teacher education program at UiT (Antonsen et al., 2022). Through this iterative approach, teachers become active participants in their own development, enhancing their preparedness and competence in meeting the diverse needs of their students. Setting practice-based research on the agenda for student teachers also gives them knowledge and tools that can potentially be used in inquiry-oriented teaching (Cao et al., 2023). Action research serves as an essential tool for enhancing teachers' professional development by enabling them to assess and refine their teaching practices, leading to

improved pedagogical competence. It empowers educators to address classroom challenges, enhance instruction, and positively impact student development. Workshops and training activities that focus on action research methods—such as planning, implementation, and producing research—have been shown to improve teachers' ability to conduct classroom research. Moreover, engaging in action research helps teachers build their identity as teacher-researchers and meet professional expectations, while also boosting their attitudes, self-efficacy, and reflective thinking skills, particularly for English language instructors.

### **The Educational Landscape in Norway: Challenges and Opportunities**

Norway's educational landscape offers both challenges and opportunities for teacher preparedness, particularly in bridging theory and practice. While the focus on equity and student-centered learning aligns with modern pedagogical frameworks, teachers often struggle to apply theoretical concepts in diverse, real-world classroom settings. However, integrating action research and collaborative projects into teacher education can empower educators to develop adaptive teaching strategies, ultimately enhancing their effectiveness in a rapidly evolving, multicultural society. Lifelong learning is a key component of Norwegian government policy, influenced by the European Commission and OECD. It aims to ensure that all citizens can pursue education and skill development throughout their lives, enhancing individual quality of life and economic resilience. However, Norway faces challenges such as global competition, environmental issues, and a fragmented adult education system. Despite high average proficiency in literacy and numeracy, a significant portion of the adult population, particularly young people, older adults, and immigrants, lacks foundational skills. The 2020 government white paper on lifelong learning emphasized a comprehensive approach, leading to recommendations by the OECD to improve the skills system and address skill imbalances.



Key actions proposed include establishing a "Skills Strategy for Norway," enhancing continuous education and training, and strengthening career guidance. The Ministry of Education oversees primary and secondary education, while various ministries manage adult education and training, highlighting the importance of collaboration among public and private actors in addressing these challenges.

### **Higher Education system and of its structure in Norway**

Higher education in Norway is defined as education and training provided at universities, specialized university institutions, university colleges, university colleges of arts, other public university colleges not under the auspices of the Ministry of Education and Research, and private higher education institutions. Higher education in Norway is generally free and offers multiple admission pathways to accommodate diverse applicants. These include completion of an upper secondary school certificate from general studies or vocational education, a bridging course for those with upper secondary vocational qualifications, and recognition of prior learning for individuals aged 25 and older. Applicants aged 23 and above can enter higher education through the 23/5 pathway, which requires five years of work experience and proficiency in six core subjects. Vocational qualifications can also lead to tailored engineering programs through the VET pathway. Most higher education institutions in Norway are state-run, responsible for their own instruction and research quality. The educational structure includes various programs: one-year supplemental studies, two-year college candidate degrees, three-year bachelor's degrees, five-year master's degrees (either continuous or following a bachelor's), three-year Ph.D. programs (often with teaching duties), and professional studies that can take three to six years. The grading system adheres to the European Credit Transfer System (ECTS), using letter grades from A (highest) to F (fail). There are distinctions in accreditation rights among institutions; universities have self-accreditation for all levels

of study, while university colleges require external accreditation for master's and Ph.D. programs. Private institutions also exist, typically lacking self-accreditation rights but providing accredited programs. The Ministry of Education and Research oversees the state universities and colleges, each governed by a board responsible for their operations. Key regulatory bodies like the Norwegian Agency for Quality Assurance in Education (NOKUT) and the Norwegian Directorate for Higher Education and Skills play significant roles in maintaining educational standards and governance.

### **Specific Legislative Framework**

The Act of June 11, 2021, No. 81, governs all higher education institutions in Norway, both public and private. It aims to ensure that universities and university colleges provide high-quality education and conduct research at an international level, while also promoting sustainable development. Accredited institutions under the Norwegian Agency for Quality Assurance in Education (NOKUT) must meet specific responsibilities, including offering research-based education, facilitating lifelong learning, and engaging in innovation. The Act emphasizes academic freedom, student rights, and the internal quality assurance systems within institutions. It categorizes higher education institutions into universities, specialized university institutions, and university colleges, allowing for transitions between these categories based on set criteria. Private institutions can also seek accreditation similar to public ones. Key provisions include the prohibition of tuition fees for public institutions, the requirement for institutions to prioritize students' welfare, and adherence to the European Credit Transfer System (ECTS) for grading. Additionally, the legislation mandates the issuance of a Diploma Supplement and emphasizes the importance of student welfare services in attracting students to higher education.

Doctoral studies in Norway are available at all university-level institutions, select state

university colleges, and a few private higher education establishments. Admission to PhD programs requires a completed two-year master's degree or a five-year integrated master's program, with institutions having the autonomy to set their own criteria. Doctoral candidates are treated as employees, benefiting from rights such as social security and leave entitlements. The PhD path necessitates writing a research thesis, supervised by a senior researcher, and typically lasts three years, during which candidates may engage in teaching or other institutional responsibilities for a portion of their time. Evaluation includes a committee of senior academics, with at least one external member, assessing the thesis and overseeing a public defense. The Ministry of Education and Research regulates degree and examination matters and is introducing a PhD in artistic research. Additionally, interdisciplinary training and collaboration with industries or public sectors are fostered through specialized PhD schemes.

### **National education strategy and key objectives**

The government envisions a knowledge-driven, inclusive society marked by diversity and cohesion. Education and knowledge serve as pillars for self-reliance, social mobility, democratic engagement, and economic success, while also addressing societal challenges and enhancing quality of life. The competence policy focuses on equitable access to education, fostering a future-ready society with secure jobs and robust welfare systems through lifelong learning and relevant research. In 2023, NOKUT celebrated 20 years by unveiling a strategy to elevate higher and vocational education quality. Renewing ENQA membership and EQAR registration highlighted their dedication to international standards. Despite financial constraints and application backlogs, NOKUT's systematic quality assessments showed positive outcomes, reinforcing trust in Norwegian education.

### **Sectoral approach**

In Norway, the "sector principle" for research assigns each government ministry responsibility for research within its jurisdiction, with the Ministry of Education and Research overseeing the education sector. This principle mandates ministries to identify and communicate their sector's knowledge needs to research institutions, ensuring that research informs policy objectives. Data from policy surveys indicate strong trust between policymakers and researchers. However, the implementation of this approach varies significantly among ministries, leading to a lack of a unified organizational structure for evidence-based policymaking across the government.

### **Key Research Findings**

**Q:** How does the integration of action research within doctoral research studies scholarship in Norway, which spans four years and includes research training alongside a 25% teaching obligation, enhance teacher preparedness in bridging theory and practice?

**Rep:** The integration of action research within doctoral studies in Norway significantly enhances teacher preparedness by creating a structured yet flexible framework that bridges theory and practice. Over the four-year duration of these programs, which include research training and a 25% teaching obligation, doctoral candidates engage in reflective practice that directly informs their teaching methodologies. This dual focus on research and teaching allows candidates to apply theoretical concepts in real classroom settings, fostering a deeper understanding of how pedagogical theories manifest in practice. As they conduct action research, candidates systematically investigate their teaching strategies, assess their impact on student learning, and adapt their approaches based on evidence. This iterative process not only develops critical thinking and problem-solving skills but also cultivates a culture of continuous improvement and innovation in teaching. Moreover, the collaboration between doctoral



candidates and their academic supervisors facilitates mentorship opportunities, where experienced educators can provide guidance on both research and practical teaching challenges. This collaboration reinforces the relevance of research findings to current educational practices, thereby enhancing the overall quality of teacher preparation. In summary, the integration of action research within the doctoral studies framework in Norway equips teachers with the necessary skills to effectively bridge theory and practice, ultimately leading to improved educational outcomes for students.

## Conclusion

Norway has made significant strides in integrating education research into policy, demonstrating a systems approach that facilitates this integration. The study highlights the importance of regular reflection on education research at the system level, which supports ongoing evaluation and dialogue among stakeholders. This systematic reflection fosters continuity in generating relevant research and clarifies expectations for all involved parties, including local municipalities and schools. Additionally, the Norway Strategy for Educational Research effectively combines research generation with a clear engagement strategy, promoting the dissemination and application of research findings through well-defined processes. The successful development of academic-policy engagement, exemplified by programs like OFFPHD, illustrates the importance of strong collaboration between academia and the public sector. Looking ahead, the Norwegian government is initiating a new cross-sector research and innovation policy aimed at involving young people in education, employment, and society. This initiative emphasizes the necessity of user participation to ensure that research-based knowledge effectively addresses policy challenges. Through these efforts, Norway is positioning itself to enhance teacher preparedness by bridging the gap between theory and practice in education.

## Recommendations

**Strengthen Action Research Integration in Teacher Training:** Institutions should prioritize the integration of action research methodologies within teacher education programs. This can enhance teachers' capacity to bridge theory and practice, fostering a culture of continuous improvement and reflective practice.

**Enhance Collaboration between Academia and Practice:** Develop structured partnerships between universities and schools to facilitate the sharing of research findings and best practices. This collaboration can help ensure that educational theories are grounded in real-world contexts, making them more applicable to classroom settings.

**Support for Professional Development:** Offer ongoing professional development opportunities for teachers focused on action research skills. Workshops and training sessions can empower educators to conduct their research, thus fostering a deeper understanding of the principles of educational practice.

**Encourage Systematic Reflection and Evaluation:** Implement regular reflective practices within schools, allowing teachers to assess their use of action research in the classroom. This could include peer evaluations and sharing sessions where teachers present their findings and experiences.

**Allocate Resources for Research Engagement:** Ensure that sufficient resources are allocated to support action research initiatives within schools. This includes funding for research projects, access to research tools, and time for teachers to engage in research activities.

**Leverage Technology for Research Dissemination:** Utilize digital platforms to disseminate research findings and best practices widely among educators. Creating online repositories of research and case studies can provide accessible resources for teachers looking to implement new strategies.

**Foster a Culture of Trust and Collaboration:**

Build a supportive environment that encourages risk-taking and innovation in teaching practices. This culture can be cultivated through recognition of teacher research contributions and promoting an open dialogue among all stakeholders in the education system.

**Incorporate Student Feedback into Research Practices:**

Actively involve students in the action research process by seeking their feedback on

teaching methods and classroom practices. Their insights can provide valuable perspectives that enhance the relevance and effectiveness of educational strategies.

By implementing these recommendations, Norway can further enhance teacher preparedness, ultimately leading to improved educational outcomes and a more effective bridging of theory and practice in teaching.

**About Authors**

Junaid Sattar Butt, a legal and research professional with extensive expertise in international and comparative law, digitalization, human rights, and sustainability. Currently an Advocate at the High Court under the AJK Bar Council, Mr. Butt has over four years of experience in legal research, court assistance, and legal research. His academic background includes an LL.M. from the University of Lahore, specializing in International & Comparative Laws, Bachelor of Laws, specializing in Local & International Laws, with an M.A. in Political Science from the University of the Punjab and MBA Finance from Virtual University of Pakistan, specializing in economy, banking & financial regulations. Mr. Butt's research interests encompass Digital Transformation in Administrative Processes, AI and Governance, Human Rights Protection, International Arbitration, EU Laws, GDPR, Technology Laws, SDG and sustainability governance. He has published extensively on these topics, including comparative studies of EU GDPR, 2016 and EU AI Act, 2024 regulations, Data Privacy, and International Human Rights Standards, the role of AI in Public Administration, and Digital Currencies' Regulatory Frameworks.

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**Declaration of Competing Interest**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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