



Bridging Global Standards and Local Classrooms: A Teacher Competency Framework for Sindh

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Abstract

The role of teachers in educational transformation is universally recognized. Countries like Finland and Singapore have demonstrated how structured competency frameworks can enhance teaching quality and system accountability. In contrast, the Sindh province of Pakistan continues to struggle with fragmented teacher preparation systems, insufficient professional development, and the absence of a localized competency framework aligned with global standards. This study addresses the need to contextualize UNESCO's teacher competency frameworks within the public education landscape of Sindh.

Adopting a convergent mixed-methods approach, the study collected data through 242 teacher surveys, 60 classroom observations, and 20 semi-structured interviews across six districts. It also involved document analysis of UNESCO frameworks, Pakistan's National Professional Standards for Teachers (2009), and the Teaching License Policy (2023). Findings revealed considerable gaps between policy expectations and teaching practice, especially in digital pedagogy, formative assessment, and reflective teaching. Based on the convergence of global frameworks and empirical data, a nine-domain Sindh Contextual Teacher Competency Framework (SCTCF) was developed. The SCTCF offers a practical, scalable model to support teaching license implementation in Sindh. It reflects the complexities of local classrooms while aligning with international quality standards, and serves as a policy tool for curriculum planners, teacher educators, and regulatory bodies.

Keywords: Teacher competency, Sindh education, UNESCO standards, teaching license, contextualization, education reform, teacher training



Introduction

Teaching is often regarded globally as one of the most significant professions in shaping student learning and driving societal progress. Countries such as Finland, South Korea, and Singapore have consistently invested in professionalizing teaching by establishing strong teacher recruitment systems, competency-based development frameworks, and comprehensive licensing procedures (UNESCO, 2021; Voogt & Roblin, 2020).

In contrast, the province of Sindh in Pakistan faces a different set of challenges. Although the introduction of the Teaching License Policy in 2023 signals a move toward raising teacher quality, its implementation has been fragmented. Many teachers are expected to meet global standards, but there is limited clarity about what these standards mean in local school settings. Overcrowded classrooms, limited access to digital tools, and underdeveloped professional development systems make policy goals difficult to achieve (STEDA, 2023).

Research has shown that simply adopting international models without adapting them to local realities often leads to superficial reforms. Scholars like Tikly (2011), Crossley and Watson (2003), and more recently, Mtebe (2020), have emphasized that meaningful education reform requires localization—building policies that are rooted in the specific needs, capacities, and cultural dynamics of a given region.

This study responds to that call by exploring how global teacher competency standards—particularly those developed by UNESCO—can be contextualized to better fit the teaching and learning conditions in Sindh. It proposes a locally informed framework that reflects both international benchmarks and on-the-ground insights collected through fieldwork in six districts across the province.

This study aims to explore how global teacher competency standards, particularly those developed by UNESCO, can be meaningfully adapted for Sindh's public education system. The purpose is not to replicate these standards directly, but to analyze their relevance, identify contextual gaps, and develop a tailored framework that reflects the actual needs and constraints of government school teachers in Sindh.

Despite various efforts to improve teacher quality in Pakistan, public school classrooms in Sindh continue to face long-standing issues: overcrowded conditions, inadequate teaching materials, weak pedagogical skills, and limited digital readiness. These factors directly affect teaching quality and student learning outcomes (Bhutto & Memon, 2021).

The 2023 Teaching License Policy was introduced to establish a standardized competency-based system for teachers, drawing inspiration from global standards such as UNESCO's teacher competency frameworks. However, research indicates that many teachers are unaware of the policy or lack a clear understanding of the required competencies (Akhtar & Kayani, 2024; STEDA, 2023). Moreover, no existing contextualized framework helps bridge global benchmarks with the realities of Sindh's schools.



This study addresses this gap by proposing a practical, locally adapted framework for teacher competencies, grounded in both international best practices and regional data. This approach aims to support more effective policy implementation and contribute to broader teacher education reforms in the province and beyond.

Objective of Study

The study has four main objectives:

1. To assess how UNESCO's teacher competency standards align with the competencies described in Sindh's Teaching License Policy.
2. To identify the strengths and gaps in the current competencies and professional readiness of government school teachers.
3. To design a localized framework for teacher competencies that reflects both global expectations and local challenges.
4. To suggest policy-level actions that can support successful implementation of the Teaching License Policy in Sindh.

Significance of the Research

This study addresses a critical gap in the current literature by offering an evidence-based, context-specific framework that links global teacher competency standards with the lived realities of public school teachers in Sindh. While recent reforms in Pakistan have emphasized licensing mechanisms and policy alignment, there has been limited exploration of the actual competencies teachers possess or the systemic supports required to help them meet new professional expectations.

By proposing the Sindh Contextual Teacher Competency Framework (SCTCF), this research provides actionable insights for teacher education institutions, professional development providers, and education policymakers. It offers a localized model that can inform curriculum redesign, CPD programming, and licensing assessments. Furthermore, the study contributes to global discourse by illustrating how international standards, such as those developed by UNESCO, can be meaningfully adapted for use in low- and middle-income countries. As such, it serves as both a theoretical and practical resource for regions pursuing competency-based teacher reform within resource-constrained educational systems.

Scope of the Research

This study focuses on public school teachers working at the elementary and secondary levels in six districts of Sindh: Karachi, Hyderabad, Matiari, Dadu, Tando Allahyar, and Jamshoro. These districts were chosen for their geographical diversity and range of urban and rural teaching contexts.

The framework proposed in this study draws from three sources: UNESCO's global teacher standards, Pakistan's National Professional Standards for Teachers (2009), and Sindh's Teaching License Policy (2023). The study does not assess the design or technical validity of the licensing test itself. Instead, it concentrates on system-level readiness and the practical alignment of teacher competencies with policy goals.



Research Questions

1. How well do UNESCO's teacher competency standards align with the expectations outlined in the Teaching License Policy for Sindh?
2. What key competencies are currently demonstrated and which are lacking among government school teachers in the province?
3. What barriers do teachers face in meeting global competency expectations, especially in low-resource school settings?
4. How can a localized teacher competency framework support more effective implementation of the licensing policy?

Limitations of the Research

The study is limited to government schools in selected districts of Sindh and does not include private schools or religious institutions. Although the selected districts offer diversity, the findings may not fully reflect the conditions in all parts of Pakistan.

Furthermore, this study does not evaluate the psychometric quality or structure of the Teaching License Test. It focuses only on teacher competencies, classroom practices, and policy understanding based on field observations and teacher feedback.

Ethical Considerations

All participants in this study were informed about its purpose and gave their voluntary consent. The research team ensured anonymity and confidentiality for all teachers, school heads, and education officers who took part in interviews, surveys, or classroom observations. The study also received internal ethical clearance from the affiliated institution and followed standard research ethics throughout the data collection and analysis process.

Literature Review

Theoretical Framework

This study is anchored in two complementary theoretical lenses drawn from both global policy research and learning psychology.

First, Policy Borrowing and Adaptation Theory (Phillips & Ochs, 2003) helps explain how educational models—like teacher competency frameworks—evolve as they move from one country to another. This is crucial in contexts like Sindh, where international standards must be interpreted in ways that align with local schooling conditions, teacher training structures, and governance systems.

Second, Constructivist Learning Theory (Vygotsky, 1962; Piaget, 1970) views teaching as a dialogic, social, and reflective process. It reminds us that competencies are not just technical skills but are shaped by interaction, context, and reflection. This theoretical stance supports the study's view that meaningful teaching is rooted in local realities and continuous learning.

Together, these perspectives inform how the study analyzes the potential for adapting global competency standards in a way that resonates with the everyday work of teachers in Sindh.



Global Standards for Teacher Competency

Over the past two decades, UNESCO's teacher competency frameworks have provided a reference point for countries looking to enhance teaching quality. Tools like the ICT Competency Framework for Teachers (ICT-CFT) and the 21st Century Skills Framework set out expectations around areas such as designing lessons and assessments that match curriculum goals, using technology to support instruction, fostering inclusive and reflective teaching practices, and building a professional learning mindset.

While these frameworks are widely cited, applying them in practice is far from straightforward. In Guyana, for instance, Butcher and Hoosen (2014) found that the ICT-CFT was helpful as a reform guide, but that success depended more on local conditions—such as access to internet and school leadership—than on the framework itself.

Likewise, research in Tanzania (Mtebe, 2020) showed that although the framework raised awareness of digital skills, most schools lacked the basic infrastructure to apply it meaningfully. These examples remind us that global frameworks can offer direction—but they need local grounding to work in real classrooms.

National Frameworks and the Teaching License in Pakistan

Pakistan's efforts to define teacher quality began with the development of the National Professional Standards for Teachers (NPST) in 2009. These standards outlined ten key areas, ranging from subject knowledge and child development to assessment, instructional planning, communication skills, and ethical conduct. In theory, they align well with international frameworks, but in practice, the uptake has been inconsistent across provinces, often depending on the strength of local teacher education systems.

In 2023, Sindh introduced a more ambitious reform: the Teaching License Policy. This policy aims to move beyond qualification-based appointments by introducing a competency-based licensing mechanism. While promising on paper, the reality is more complex. Research by Akhtar and Kayani (2024) reveals that many in-service teachers remain unaware of the policy or uncertain about what competencies it demands. For those who are aware, there is often a gap between the policy's expectations and the support available to meet them.

Teachers interviewed during this study described their experiences with continuous professional development (CPD) as limited and inconsistent. Many expressed frustration about the absence of clear guidance or tools that would help them understand and meet the new competency expectations. The lack of a localized framework that breaks down global standards into practical, observable behaviors further complicates the situation. Without such a framework, even well-intentioned reforms risk becoming disconnected from classroom realities.

Regional Empirical Studies on Adapting Global Standards

Across the Global South, countries have experimented with ways to make international teacher standards more relevant to their own contexts. These efforts offer useful lessons for Sindh as it navigates its licensing reform.



In Indonesia, Arifin and Barizi (2024) explored how religious and ethics teachers responded to the Independent Learning Curriculum, which draws on global benchmarks. They found that successful implementation relied on three factors: access to government-funded training, ongoing school-based mentoring, and a sense of ownership among teachers over the changes being introduced. In Mexico, Salgado (2019) analyzed the predictive validity of the country's teacher entry exam. While the exam did a reasonable job of testing content knowledge, it failed to capture broader indicators of teaching quality. This raised concerns about relying solely on standardized tests to assess professional competencies—an issue highly relevant to Sindh's new licensing exam. In the Philippines, a study by Contreras and Mercado (2024) tested a weekly lesson planning tool aligned with national standards. Science teachers who used the tool showed notable improvements in their planning skills. The authors stressed that providing feedback and practical tools—rather than just setting standards—is what helped teachers improve.

Closer to home, a study by Bhutto and Rawat (2018) in Sindh revealed that despite curriculum reforms, rote memorization still dominates classroom teaching, especially in science subjects like chemistry. This disconnect between policy documents and actual practice signals the urgent need for a competency framework that is not just well-intentioned, but visible and usable in classrooms. Across these studies, one theme is clear: simply adopting global frameworks is not enough. For teacher standards to make a difference, they must be translated into local tools, supported with training, and reinforced through feedback systems that are rooted in the realities of everyday teaching.

Conceptual Framework for Contextualization

This study proposes a practical framework for understanding how teacher competencies can be localized in Sindh without losing sight of international standards. The conceptual model is built by drawing from three layers of input: global benchmarks, national policy anchors, and ground-level insights from teachers and classrooms.

At the global level, frameworks such as UNESCO's ICT Competency Framework and the 21st Century Skills model offer guidance on what teachers should ideally be able to do—design inclusive lessons, use technology responsibly, assess student progress meaningfully, and continue growing through professional reflection.

Nationally, Pakistan's National Professional Standards for Teachers (2009) and Sindh's Teaching License Policy (2023) provide a foundation for aligning teacher expectations with policy objectives. These documents indicate a policy intent to professionalize teaching—but they don't yet offer a usable roadmap for how competencies should look in day-to-day practice. The real substance of this framework, however, comes from Sindh's classrooms. Through this study's fieldwork—surveys, interviews, and observations—five key domains emerged as both relevant and actionable for public school teachers. These domains are: Pedagogical Content Knowledge, Assessment Literacy, Digital and Technological Integration, Inclusive Pedagogy and Classroom Management, and Reflective Practice and CPD Engagement. These five areas serve as the core of the Sindh Contextual Teacher Competency Framework

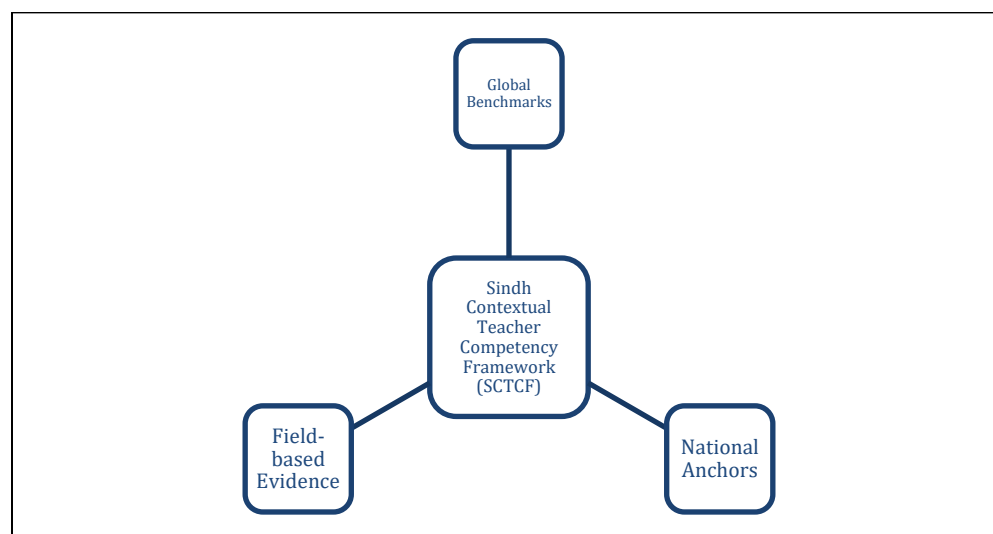


(SCTCF). They are not abstract ideals, but reflections of what is needed and possible within local classrooms. Each domain will be used as a lens to evaluate where teachers currently stand and what kind of support they need to grow.

This layered framework—rooted in policy, anchored in field evidence, and aligned with global models—forms the basis for developing a competency structure that is not only aspirational but also realistic and implementable in the Sindh context.

Figure 1

Conceptual Framework



Conclusion of the Literature Review

The literature reviewed in this chapter highlights an important tension: while global teacher competency frameworks provide a clear direction for quality teaching, their direct application in contexts like Sindh often proves difficult. Issues such as limited digital infrastructure, inconsistent professional development systems, and the absence of school-level support structures can dilute even the best-designed reforms.

The review also shows that adaptation—not adoption—is key. Countries that have made meaningful progress in improving teacher quality—whether through curriculum alignment, mentoring programs, or classroom-based assessment tools—have done so by tailoring global standards to their local realities. These adaptations are supported by strong policy frameworks, teacher voice, and feedback systems that close the gap between expectation and execution. In Sindh, the introduction of the Teaching License Policy (2023) has created a timely opportunity to build such a system. But without a localized competency framework, teachers are left without a map to navigate these new expectations. The research presented in this paper aims to fill that gap by proposing a structured yet flexible model the Sindh Contextual Teacher Competency Framework (SCTCF)—that blends global insights with ground realities.

The next chapter outlines how this study was designed to capture those realities through a mix of surveys, interviews, classroom observations, and policy reviews.



Research Methodology and Design

Research Philosophy: Pragmatism

This study adopted a pragmatic research philosophy, which supports the integration of both quantitative and qualitative methods to investigate real-world challenges. Pragmatism emphasizes practical inquiry, allowing the researcher to use the most effective tools available to address complex educational phenomena. Given the multifaceted nature of adapting global teacher standards to local contexts, pragmatism enabled the researcher to blend empirical data with experiential insights from the field.

Research Approach: Convergent Design

A convergent approach was used, combining inductive and deductive reasoning. The study began by collecting field-based evidence (inductive), identifying emergent patterns from teacher practices and perceptions. These patterns were then compared and aligned with pre-existing global teacher competency frameworks (deductive). This iterative process allowed the research to stay grounded in local realities while benefiting from international educational benchmarks.

Research Strategy: Mixed Methods

A mixed-methods strategy was employed to capture both breadth and depth. Quantitative data (via surveys) helped generalize findings across a larger population, while qualitative data (from interviews, focus groups, and observations) provided rich, contextual insights. This triangulation of data strengthened the validity and utility of the resulting Sindh Contextual Teacher Competency Framework (SCTCF).

Time Horizon: Cross-sectional Design

The study adopted a cross-sectional time horizon. Data were collected from October 2023 to February 2024, coinciding with the early implementation phase of the Teaching License Policy in Sindh. This timing allowed the study to examine teacher readiness and systemic responses in real-time.

Data Collection Methods

Five complementary tools were used:

- Document Analysis: Reviewed UNESCO's ICT-CFT, the NPST (2009), and the Teaching License Policy (2023).
- Survey: A 41-item questionnaire, piloted and validated, administered to 300 government school teachers.
- Interviews: Conducted with 20 key stakeholders including policymakers, headteachers, and education officers.
- Focus Group Discussions: Three sessions representing urban, rural, and mixed teacher groups.



- Classroom Observations: 60 classroom sessions were observed using a rubric aligned with global competency domains.

Sampling and Participants

A combination of stratified random sampling (for surveys) and purposive sampling (for interviews and observations) was used. Teachers were selected from six districts representing diverse geographies (urban and rural), teaching levels (primary to secondary), and involvement with the licensing policy.

Data Analysis Techniques

Quantitative data were analyzed using SPSS. Descriptive statistics identified trends, while factor analysis grouped related competencies. Qualitative data from interviews, focus groups, and observations were coded using Saldana's thematic analysis method. A convergence matrix was then used to align findings across data sources, forming the foundation of the SCTCF.

Validity, Reliability, and Trustworthiness

- Reliability: The survey instrument showed high internal consistency (Cronbach's Alpha > 0.9).
- Validity: Instruments were reviewed by teacher education experts for content validity.
- Trustworthiness: Ensured through triangulation, member checking, and maintaining an audit trail. The framework was built through rigorous synthesis of field data and international standards.

Ethical Considerations

Ethical clearance was obtained from the affiliated academic institution. All participants provided informed consent and were assured anonymity and confidentiality. Participants were made aware of their right to withdraw at any stage, and data were securely stored throughout the research process.

Results

Overview of Data Sources

This study used a mixed-methods approach to build a teacher competency framework that reflects both global standards and the local realities of Sindh. Data were gathered from the following sources:

- A structured survey completed by 242 in-service government teachers across 30 districts.
- Classroom observations of 60 teachers using a competency-based checklist.
- Thematic analysis of international frameworks (e.g., UNESCO) and national frameworks (e.g., NPST, 2009).
- Review of policy documents, including the 2023 Teaching License Policy.



Survey Findings: Teachers' Self-Perceived Competencies

The survey consisted of 41 items designed to capture teachers' confidence and practices in key competency areas. The responses were analyzed using descriptive statistics and Principal Component Analysis (PCA) to identify underlying patterns.

The survey tool showed strong reliability (Cronbach's Alpha = 0.928) and a high sampling adequacy score (KMO = 0.905), confirming that the data were suitable for factor analysis.

From the analysis, eight key competency areas were identified:

1. Instructional Design and Reflection
2. Awareness of Teaching License Requirements and Assessment
3. Use of Technology in Teaching
4. Strategies for Assessment for Learning
5. Inclusive Practices and Student Engagement
6. Leadership and Peer Collaboration
7. Support for Students' Emotional and Social Development
8. Resource Use and Local Problem Solving

Key Gaps Identified

- Teachers rated themselves lowest in using digital tools and applying formative assessment techniques.
- Reflective practices and ongoing professional development also received low scores.
- However, higher scores were observed in lesson delivery and inclusive approaches.

Classroom Observation Findings

Observations were conducted in 60 classrooms to see how teacher competencies were demonstrated in practice. A structured rubric based on global and national standards was used to assess key areas.

Table 1
Findings Summary

Domain	% Teachers Needing Improvement	Main Issues Identified
Technology Use	53.3%	Rare use of ICT or digital aids in classrooms
Assessment Techniques	30%	Limited use of formative feedback strategies
Reflective Practices	38.3%	Teachers rarely adjusted methods post-lesson
Lesson Planning	11.7%	Weak differentiation for mixed-ability learners



Teachers showed more strength in areas like basic lesson planning and engaging students during delivery. However, the use of digital tools, self-evaluation, and effective assessment methods were underdeveloped.

Thematic Analysis of International Frameworks

To understand how global teacher standards might be adapted for Sindh, the study analyzed multiple international and national frameworks. These included documents from UNESCO, iNACOL, ACTEQ, Somaliland, and Pakistan's NPST (2009). Each was reviewed using Saldaña's coding method to identify recurring themes.

The analysis revealed common focus areas such as digital competence, ethical behavior, inclusive teaching, and reflective practice. However, applying these themes in Sindh requires careful adaptation, as most local classrooms operate under very different conditions than those assumed in global models.

Convergence Matrix: Bringing Data Together

To ensure the proposed framework was accurate and grounded in evidence, a convergence matrix was developed. This tool brought together findings from surveys, classroom observations, and thematic analysis.

For example:

- Survey data showed that digital pedagogy was a weak area.
- Observations confirmed minimal use of technology in lessons.
- International frameworks emphasized the same domain as a core skill.

Finalized Teacher Competency Framework for Sindh

Based on all sources of data, a **nine-domain Teacher Competency Framework** was finalized. Each domain includes detailed descriptions of expected teacher behaviors, from basic to advanced levels.

The nine domains are:

1. Instructional Planning and Delivery
2. Assessment for Learning
3. Inclusive Pedagogy
4. Use of Technology in Teaching
5. Reflective Practice and CPD Engagement
6. Professional Conduct and Collaboration
7. Socio-Emotional Support for Students
8. Adaptation to Local Context and Resources
9. Awareness of Licensing Requirements



This framework aims to give clear guidance for teachers, supervisors, and training providers in Sindh.

Alignment with Curriculum and Licensing Policy

To ensure the framework is practical and usable, it was mapped against:

- B.Ed curriculum modules (such as assessment, classroom management, and ICT)
- The content structure of the Teaching License Test

The framework also includes differentiated guidance for novice teachers, experienced teachers, and those working in rural areas. This allows it to be used more flexibly across different school settings.

Conclusion and Discussion

Conclusion

This chapter shows how the research combined global ideas, field data, and classroom realities to build a teacher competency framework that fits Sindh's needs. The final framework is:

- Based on actual teaching practices and teacher feedback
- Informed by both national and international standards
- Aligned with Sindh's policy on teacher licensing and curriculum reform

This localized framework can now serve as a foundation for professional development, licensing preparation, and long-term improvements in teacher quality across the province.

Discussion

Reaffirming the Purpose of the Study

The goal of this study was to understand how UNESCO's global teacher competency standards can be realistically applied in Sindh's public school system. To do this, the study combined global frameworks, national policies, teacher feedback, classroom observations, and document analysis. The aim was to design a local framework that is both ambitious and achievable. This chapter now reflects on the findings and their meaning, based on the theories and research reviewed earlier.

Global Standards vs. Local Realities

Global frameworks such as those developed by UNESCO highlight essential teaching skills like digital integration, inclusive teaching, assessment for learning, and reflective practice (UNESCO, 2018; Voogt & Roblin, 2010). While Pakistan's National Professional Standards (2009) also mention these areas, this study found that teachers in Sindh face challenges in applying them.

Teachers felt more confident in ethical conduct and inclusive teaching but struggled with digital tools, feedback-based assessments, and reflective habits. These gaps reflect findings in other countries too. For example, Mtebe (2020) and Butcher and Hoosen (2014) showed that in countries like Tanzania and Guyana, global frameworks were helpful in theory but difficult to implement without the right resources and support.



Teachers' Perceptions and Competency Gaps

Survey results showed that most teachers are aware of key teaching skills but are unsure how to meet them in practice. For example, many teachers saw assessment and digital literacy as important, but did not feel confident using these tools in the classroom. This mirrors earlier studies, such as the one by Arifin and Barizi (2024), which found that teachers need more than policy—they need time, tools, and training.

Classroom observations confirmed this pattern. Although teachers were trained in some areas, they often relied on traditional methods and did not apply newer strategies (Ali & Haider, 2021). This finding supports Salgado's (2019) view that licensing exams or policies must be backed by meaningful professional development to bring real change.

Contextualized Competency Development

By analyzing surveys, classroom observations, and policy documents together, this study developed a nine-domain teacher competency framework for Sindh. While many domains matched international frameworks, two additional areas emerged that are especially important in the local context:

- **Contextual Responsiveness:** Teachers in Sindh often manage multigrade classrooms with limited resources. This domain recognizes their ability to adapt to such challenges.
- **Licensing Awareness:** Many teachers were unfamiliar with the expectations of the new Teaching License Policy. This domain addresses the need to build understanding and readiness for licensing reforms.

These additions highlight what Tikly (2011) and Crossley & Watson (2003) emphasized—that policies should be adapted to fit local realities rather than applied directly from global models.

Policy and Practice Implications

For Teacher Education and Licensing Reform

The Sindh Contextual Teacher Competency Framework (SCTCF) provides a clear structure for teacher training and licensing. By integrating these domains into the B.Ed and ADE curriculum, teacher education institutions can better align coursework with the real demands of classrooms and licensing assessments.

Adding a focus on licensing awareness to training programs can also help teachers understand what is expected of them and prepare with more confidence.

For CPD and School-Level Implementation

Professional development programs should move beyond policy orientation sessions and offer practical workshops on digital tools, assessment techniques, and reflective practices. Schools can use the framework to create observation tools and mentoring plans tailored to different types of teachers—new, experienced, and those working in rural areas.

Embedding these competencies into school planning and teacher evaluation systems will also help make them part of everyday practice.



For Policymakers and STEDA

STEDA and other policymaking bodies can use this framework to shape licensing policy, test design, and teacher evaluation guidelines. Developing a policy brief based on this study would be useful for initiating dialogue with relevant stakeholders. The framework can also guide evaluator training and CPD resource development.

Contribution to Global and Regional Discourse

This study adds to the global conversation on teacher reform by showing how international frameworks can be translated into local practice. The framework developed here is based on multiple sources of evidence, includes local insights, and introduces new domains that are missing in many global models.

It stands alongside international adaptation efforts, such as those in the Philippines and Tanzania, and offers a strong example of how research can lead to practical reform in teacher education.

Limitations of the Study

While the study gathered rich data, it is limited in scope to public-sector schools in Sindh. Private and religious schools were not included. Also, while the survey analysis was statistically strong, a more detailed validation (e.g., Confirmatory Factor Analysis) could further support the findings. Lastly, although policymakers were consulted through interviews, a formal Delphi process was not conducted.

Bringing global standards into local classrooms is not a simple process. It requires listening to teachers, understanding the context, and translating policy into practical tools. This study shows that a localized, data-driven framework like the SCTCF can help bridge the gap between what policies expect and what teachers actually experience.

It offers a path forward—not just for Sindh, but for other regions seeking to improve teaching quality in meaningful and sustainable ways.

Overview of the Study

This research explored how UNESCO's teacher competency frameworks can be adapted to meet the unique needs of Sindh's public education system. The study responded to the growing demand for a teacher development model that is not only aligned with international standards but also grounded in the realities of local schools.

Using a mixed-methods approach, the study collected and analyzed data from teacher surveys, classroom observations, policy documents, and expert interviews. These insights were combined to create a nine-domain Sindh Contextual Teacher Competency Framework (SCTCF), which is designed to support teacher development in a realistic and structured way.

Key Findings

- **Global Standards Offer Guidance, Not Ready-Made Solutions:** While UNESCO's frameworks provide a helpful structure, they must be adjusted to fit local conditions in Sindh.



- **Awareness and Skills Gaps Exist:** Many teachers are unfamiliar with the 2023 Teaching License Policy and face challenges in areas such as digital teaching, formative assessment, and reflective practice.
- **Competency Depends on Context:** The data showed that teacher competency is strongly influenced by school resources, institutional culture, and access to ongoing professional development.
- **A Local Framework Is Both Necessary and Feasible:** The study demonstrated that a practical, localized competency model can be built using global guidance and field data.
- **Contributions of the Study**
 - This study makes three key contributions:
 - **Empirical Contribution:** It provides a data-informed framework based on inputs from over 300 teachers and education experts across Sindh.
 - **Policy Contribution:** It offers specific recommendations for how the SCTCF can be used by teacher education institutions, school leaders, and licensing authorities.
 - **Theoretical Contribution:** It illustrates how international policies can be adapted using local evidence, contributing to global debates on education policy reform.

Recommendations

For Policymakers

- Adopt the SCTCF as part of the official Teaching License Policy.
- Use the framework to design CPD programs, evaluation tools, and license assessments.
- **For Teacher Education Institutions:**
 - Embed the framework in B.Ed programs and training modules.
 - Emphasize reflective practice, classroom adaptation, and assessment skills.

For School Leaders:

- Use the framework to guide mentoring, lesson planning, and teacher appraisals.
- Develop separate tools for novice and experienced teachers to track progress.

Limitations and Future Directions

The study is limited to public schools in selected districts and does not include the private sector or madrassahs. The statistical analysis was exploratory and would benefit from further validation using a larger sample.

Future research could:

- Track how teacher competencies improve over time using this framework.
- Examine how it impacts student learning outcomes.
- Explore ways to digitize the framework for real-time use in schools.



- Test the model in other provinces of Pakistan to explore broader applicability

Final Reflection

Bringing global standards into the classrooms of Sindh is not just about policy—it's about making change practical and meaningful. This study shows that with the right data, thoughtful adaptation, and teacher involvement, global ideas can be turned into useful tools for local classrooms.

The Sindh Contextual Teacher Competency Framework (SCTCF) offers a practical path forward for improving teacher quality, grounded in both evidence and empathy. It is a bridge between policy and practice—designed not only for teachers but with teachers in mind.

Future Direction

Future Research Directions

Several areas can be explored in follow-up studies:

- Track how teachers grow in competency after using the SCTCF framework over time.
- Study how the framework affects student learning outcomes.
- Develop a digital tool to help schools track teacher competencies in real time.
- Test the framework in other provinces to see if it can be adapted across Pakistan.

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Author Contributions

Dr. Kiran Hashmi conceptualized, designed, and executed the study, including data collection, analysis, and manuscript writing. The research was conducted as part of her postdoctoral work. Dr. Nasir Khan served as the academic supervisor for the project, providing ongoing guidance, critical feedback on the research design and interpretation, and editorial support throughout the development of the manuscript.

Conflicts of Interest

The author declares no conflict of interest.



References

- Akhtar, N., & Kayani, M. M. (2024). Navigating the pedagogical landscape: A qualitative inquiry into teachers' perceptions and preparedness for teaching license in Sindh, Pakistan. *Voyage Journal of Educational Studies*, 4(2), 197–223.
- Ali, N., & Haider, K. (2021). Teacher professional development in Sindh through NACTE: Analytical study. *Ilkogretim Online*, 2(3).
- Arifin, M. B., & Barizi, A. (2024). *Localizing global standards: Reflections on implementing the Independent Learning Curriculum in Indonesia*. *Journal of Southeast Asian Education Studies*, 6(1), 44–62.
- Baxter Magolda, M. B. (2004). Evolution of a constructivist conceptualization of epistemological reflection. *Educational Psychologist*, 39(1), 31–42.
- Bhutto, F., & Rawat, A. (2018). *Curriculum reform and the persistence of rote learning: A study of secondary schools in Sindh*. *Pakistan Journal of Educational Research*, 21(1), 33–49.
- Bhutto, N., & Memon, R. (2021). Barriers to implementing national teacher standards in Sindh's government schools. *Journal of Educational Research & Practice*, 11(1), 45–61.
- Butcher, N., & Hoosen, S. (2014). *Realising the potential of the UNESCO ICT Competency Framework for Teachers in Guyana: Lessons from practice*. Commonwealth of Learning.
- Clark, L. S. (2004). The journey from postpositivist to constructivist methods. In *Media, home, and family* (pp. 19–34).
- Contreras, F., & Mercado, J. (2024). *Improving science instruction through competency-aligned planning tools: Evidence from the Philippines*. *Asia-Pacific Journal of Teacher Education*, 52(1), 25–42.
- Crossley, M., & Watson, K. (2003). *Comparative and international research in education: Globalisation, context and difference*. RoutledgeFalmer.
- Davies, A., & Elder, C. (Eds.). (2008). *The handbook of applied linguistics*. John Wiley & Sons.
- Embassy, U. S. (2016). *Teaching Excellence and Achievement Program (TEA)*.
- Jochems, W., & Koper, R. (Eds.). (2004). *Integrated e-learning: Implications for pedagogy, technology and organization*. Psychology Press.
- Kenny, L. A. (2011). Doing students justice: How first language acquisition influences second language acquisition. *Illinois Reading Council Journal*, 39(4), 10–14.
- Krashen, S. D. (1981). *Second language acquisition and second language learning*. University of Southern California.
- Mitchell, R., Myles, F., & Marsden, E. (2019). *Second language learning theories*. Routledge.
- Mtebe, J. S. (2020a). Applying UNESCO ICT Competency Framework in Tanzania. In *Handbook of Research on Innovative Pedagogies* (pp. 350–366). IGI Global.
- Mtebe, J. S. (2020b). Applying UNESCO ICT competency framework to evaluate ICT competency level in Tanzania. In *Handbook of research on innovative pedagogies and best practices in teacher education* (pp. 350–366). <https://doi.org/10.4018/978-1>



- Murtonen, M., Gruber, H., & Lehtinen, E. (2017). The return of behaviourist epistemology: A review of learning outcomes studies. *Educational Research Review*, 22, 114–128.
- Ning, B., Rind, I. A., & Asad, M. M. (2020). Influence of teacher educators on the development of prospective teachers' personal epistemology and tolerance. *SAGE Open*, 10(1), 2158244020914639.
- Rehmani, A. (2003). Impact of public examination system on teaching and learning in Pakistan. *International Biannual Newsletter ANTRIEP*, 8(2), 3–7.
- Richards, J. C., & Renandya, W. A. (Eds.). (2002). *Methodology in language teaching: An anthology of current practice*. Cambridge University Press.
- Salgado, R. (2019). *Evaluating teacher entry assessments: Predictive validity in Mexico's licensing reforms*. Latin American Journal of Educational Assessment, 8(2), 117–135.
- STEDA. (2023). *Teaching License Policy 2023*. Government of Sindh. <https://steda.gos.pk>
- Thorndike, E. L. (1970). *Animal intelligence: Experimental studies*. Transaction Publishers.
- Turuk, M. C. (2008). The relevance and implications of Vygotsky's sociocultural theory in the second language classroom. *ARECLS*, 5(1), 244–262.
- UNESCO. (2021). *Transforming teaching: From standards to practice*. <https://unesdoc.unesco.org>
- Voogt, J., & Roblin, N. P. (2020). Framework adaptation and 21st century skills in LMICs. *Educational Technology Research Journal*, 68(4).
- Vygotsky, L. S. (1980). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Tikly, L. (2011). *Towards a framework for researching the quality of education in low-income countries*. Comparative Education, 47(1), 1–23. <https://doi.org/10.1080/03050068.2011.541678>
- UNESCO. (2018). *Preparing teachers for global citizenship education*. Paris: UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000265452>