Assessing Implementation and Awareness of National Professional Standards Among Teacher Educators in Training Institutions in Quetta, Baluchistan.

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Abstract

This research investigates the implementation and awareness of the National Professional Teaching Standards (NPTS) in teacher training institutions in Quetta, with a primary focus on the professional growth and competency development of prospective teachers. The study employs a quantitative research design, utilizing regression analysis to examine the impact of NPTS components—subject matter expertise, instructional planning, and assessment strategies—on teaching effectiveness. Findings reveal a strong positive correlation between instructional planning and professional growth ($r = .812$, $p < .001$), highlighting the critical role of strategic lesson design and pedagogical methods in teacher development. Additionally, the study establishes a significant relationship between assessment strategies and professional growth ($r = .648$, $p < .001$), demonstrating the importance of evaluation and feedback mechanisms in teaching effectiveness.Despite these benefits, the study identifies major challenges in NPTS implementation, including limited institutional resources, inadequate training programs, and resistance to pedagogical change. The research suggests that enhancing teacher education curricula, incorporating professional development frameworks such as Kolb's Experiential Learning Theory and the TPACK model, and adopting a comparative approach with other provinces could improve NPTS effectiveness. The findings provide evidence-based recommendations for educational policymakers and training institutions to develop a more sustainable, standardized, and effective teacher education system in Balochistan. This study integrates professional development theories such as Kolb's Experiential Learning, the TPACK model, and Pedagogical Content Knowledge (PCK) to enhance the discussion on teacher training effectiveness.

Keywords: National Professional Teaching Standards (NPTS), Teacher Educators, TPACK model

Introduction

Background and Context

Teacher professional development plays a crucial role in enhancing **teaching quality and** student learning outcomes. To promote standardized teaching practices, Pakistan introduced the National Professional Teaching Standards (NPTS), a framework designed to improve teacher competency nationwide. These standards encompass subject matter expertise, instructional planning, assessment strategies, and lifelong professional growth (Ministry of Education, 2011). This research incorporates professional development theories including Pedagogical Content Knowledge (PCK), the TPACK model, and Kolb's Experiential Learning to improve the conversation about the efficacy of teacher preparation.

Despite the significance of NPTS in fostering educational excellence, their implementation varies across different regions of Pakistan, particularly in areas with limited resources and training facilities. Quetta, the capital of Balochistan, faces persistent barriers in adopting NPTS due to:

- Insufficient infrastructure in teacher training institutions.
- Limited professional development opportunities for educators.
- Lack of awareness regarding NPTS among prospective teachers.

These challenges hinder the effective integration of NPTS into teacher training programs, affecting the overall quality of education in Quetta. A comparison with urban centers like Islamabad, Lahore, and Karachi could provide deeper insights into regional disparities in NPTS implementation. Additionally, integrating global teacher development models, such as Kolb’s Experiential Learning Theory, the Technological Pedagogical Content Knowledge (TPACK) framework, and the Pedagogical Content Knowledge (PCK) model, can strengthen teacher training programs by linking theory with practical application.
Additionally, a comparative perspective is introduced, examining NPTS implementation challenges in Quetta relative to urban centers like Islamabad, Lahore, and Karachi.

Problem Statement

While studies such as Ahmad & Ali (2018) have examined barriers to NPTS implementation in Pakistan, research specifically focusing on pre-service teachers in Quetta remains scarce. Existing literature has not fully explored how prospective teachers in Quetta interpret, apply, and integrate NPTS into their teaching strategies. This gap is critical, as understanding subject matter expertise, instructional planning, and assessment techniques is essential for teacher effectiveness.

This study builds upon previous research by investigating how well pre-service teachers in Quetta understand and utilize NPTS within their training programs. It also examines the alignment of teacher educators with NPTS guidelines, providing a comparative perspective with urban regions to highlight context-specific implementation challenges.

Research Objectives

To address these gaps, this study aims to:

- Assess the level of awareness and implementation of NPTS in teacher training institutions in Quetta.
- Analyze the impact of NPTS components (subject matter expertise, instructional planning, and assessment strategies) on prospective teachers' professional growth.
- Identify institutional barriers that hinder effective NPTS adoption.
- Provide evidence-based recommendations to improve teacher training programs in Quetta.

Significance of the Study

This research contributes to the ongoing discourse on teacher professionalization in Pakistan, offering insights for policymakers, training institutions, and education stakeholders. The findings will:

- Support the enhancement of teacher education curricula by integrating NPTS more effectively.
- Inform policymakers about regional disparities in NPTS implementation and recommend strategies for bridging the gap.
- Contribute to global discussions on teacher training standards by comparing Pakistan’s approach with models used in other developing countries, such as India and Bangladesh.

Ultimately, this study aims to develop a unified and sustainable teacher training framework, ensuring that educators in Quetta and similar regions receive high-quality training aligned with national and international teaching standards. With national teaching standards.

Literature Review

Research communities accept professional standards as fundamental components for education quality improvement through effective teaching methods. Pakistan uses the National Professional Teaching Standards (NPTS) to lead the professional advancement of teachers throughout the country. The standards of NPTS cover extensive competencies which include both content expertise and instructional planning techniques as well as pedagogical methods and assessment practices and lifelong professional development. The implementation of NPTS throughout different areas across Pakistan shows inconsistent execution because officials struggle to raise awareness about it and apply the standards effectively, especially in poorer sections such as Balochistan.

National Professional Teaching Standards and Teacher Development

The NPTS created a complete teaching framework to develop teacher knowledge through effective methods for classroom instruction and teacher education alignment with national education goals (Ministry of Education, 2011). The standards establish competencies that focus on content mastery as well as teaching method development student interaction skills and outcome evaluation methods. Professional standards create an alignment between teacher education curricula and teacher readiness to deliver critical educational support based on Darling-Hammond and Bransford (2005). This research team supports that professional standards function as primary indicators for essential teacher competencies alongside a basis to verify teachers' abilities in addressing multiple learning requirements.

The system of National Professional Standards for Teachers receives analysis through various studies that evaluate its effect on educational development in Pakistan. Ali et al. (2023) explain that the standards receive praise as a development tool yet institutions struggle to enact their applications. The mismatch between NPTS standards and the teaching curriculum design creates a theoretical-to-practical knowledge disconnect. Even so, Khalid et al. (2020) point out that Baluchistan faces important challenges to NPTS implementation due to limited resources

undertrained instructors, and uncooperative institutions. The problems emanate from the inadequate local adaptation of these standards by regional teacher training programs according to Khalid et al. (2020)..

Challenges in NPTS Implementation

NPTS implementation difficulties exist across all countries since they stem from a worldwide problem of converting policies to actionable teaching approaches. Hargreaves (2003) establishes that standards-based reforms intended to improve teaching professionalism encounter implementation problems because of poor system resources and unsatisfactory teacher training and administrative backing. The existing educational problems in Pakistan become worse because of societal economic conditions combined with political instability and insufficient infrastructure which affects rural locations like Balochistan (Ahmad & Ali, 2018). NPTS implementation remains inconsistent because of these factors which prevent teacher training institutions from successfully incorporating these standards into their curriculum.

Multiple studies by Zubair et al. (2019) and Rehman (2021) demonstrate that teachers' attitudes combined with their perceptions need to be addressed for the successful adoption of professional standards. Research shows that teachers avoid adopting new teaching practices because of their lack of NPTS exposure and unwillingness to change. The research findings indicate that teacher development efforts need to move past basic information dissemination because teachers must directly experience standard implementation via practical instructional methods and ongoing mentoring and evaluation.

Impact of NPTS on Teacher Growth and Development

Research shows NPTS work when properly executed because they enhance teaching professionals' growth significantly. The research conducted by Shabbir et al. (2020) revealed that teachers who got training based on NPTS achieved substantial development in their teaching methods with a focus on lesson planning and student evaluation. The reported increase in self-efficacy together with professional satisfaction shows that teachers experience critical components for career growth (Pajares, 1992). New research echoes international studies in teacher professional development by proving that educational training linked to professional standards generates better professional performance and academic results (Darling-Hammond, 2017).

Research about the direct link between NPTS and teacher development in Quetta remains scarce due to scarce empirical studies. Shah and Turi (2020) present research findings about Balochistan's teacher development environment although comprehensive evidence regarding NPTS remains scarce. The research recommends customized approaches for Balochistan with consideration for its economic and cultural specifics because these factors might affect how well NPTS works in practice.

Gaps in the Literature

Research on professional standards implementation in teacher education shows ample evidence from global areas and Pakistan but lacks specific exploration of NPTS implementation challenges and opportunities in Quetta and Balochistan. Research about professional standards mainly occurs within urbanized parts of the world which creates abundant gaps in knowledge about rural and distant areas. This research addresses the literary void by examining NPTS perception and implementation at teacher training institutions within Quetta with special attention to student educators' growth and development. This research investigates subject matter knowledge connections with instructional planning and assessment practices to generate practical recommendations for teacher training improvement in regions with limited resources.

Research Methodology

Research Design

The research design adopts a descriptive-correlational approach to examine both NPTS implementation standards and connections between subject matter knowledge and instructional planning together with assessment practices for professional development in teachers. The research benefits from descriptive design because Creswell (2014) states that such methodology enables researchers to study phenomena through observations of real-world variables and their interrelations. This research design helps to measure the implementation levels together with the strength of relationships between essential variables.

To ensure methodological rigor, the sample size selection is justified using Cohen’s effect size analysis. Moreover, qualitative insights from teacher interviews and classroom observations were incorporated to complement survey findings.

Population and Sample

- All prospective teaching students who attend both public and private educational institutions in Quetta Balochistan form the research population. The study utilizes universities that reflect different settings across the teacher training sector of Quetta.
- Random sampling provided a representative participant sample of 162 prospective teachers from 280 eligible participants who fulfilled these inclusion requirements. Enrollment in a teacher training program in Quetta.
- Active participation in a practicum in higher educational institutes within the region.
- Familiarity with the National Professional Teaching Standards (NPTS).

Research Instruments

The pre-tested survey questionnaire functioned as the main instrument to collect data. Development of the questionnaire took place through research into existing literature together with insights from the NPTS framework. The instrument has two main operational parts. **Demographic Information**: The author obtains data about participants' educational standing along with their work experience institution types and NPTS awareness levels in this part of the examination.

- **NPTS Awareness and Implementation**: The section uses Likert-scale items to evaluate both participant knowledge about NPTS and their related attitudes alongside their classroom implementation of the standards. The survey includes three important sections that organize all questions: **Subject Matter Knowledge (SMK)**: The purpose of assessment questions is to determine how well teachers both understand their teaching subject and deliver instruction to their students.
- **Instructional Planning and Strategies (IPS)**: This domain features assessment items that measure instructors' competence to create strong plans for instruction and adapt their methods using various teaching approaches.
- **Assessment Practices (AP)**: This section evaluates teachers' implementation of assessment methods for evaluating student comprehension while giving feedback that drives instructional adjustments.
- Each item is rated on a **5-point Likert scale**, ranging from 1 = **Strongly Disagree** to 5 = **Strongly Agree**. The instrument underwent **pilot testing** with a small group of teacher trainees (n = 20) to ensure clarity, reliability, and validity. **Cronbach's Alpha**

was used to assess internal consistency, with an acceptable threshold of 0.80 for the overall scale.

Data Collection Procedures

Surveys were collected throughout two months of the data collection period. The survey team distributed the questionnaire to chosen participants using both online and traditional paper methods to reach various participant demographics. Every participant provided their informed consent before the study while ethical considerations received the highest attention points. Survey participants received instructions about confidentiality voluntarily and the right to withdraw at any point.

The survey team sent multiple reminder notices to enhance participant response quantity. The total number of responded surveys reached 85% with 162 participants out of 190 participants who received the survey.

Data Analysis

The research analysis utilized SPSS version 25 as the statistical analysis program. A descriptive statistics analysis included mean, standard deviation, and frequency distribution to summarize the demographic data and NPTS awareness and implementation levels.

Pearson’s correlation coefficient enabled the evaluation of the relationships between the NPTS components and teachers' overall professional development. Analysis of correlations helped establish both the magnitude and the orientation of variable relationships.

The researchers performed a multiple regression analysis to determine the independent impact that NPTS components make on professional growth. The research design revealed the independent influence of SMK teaching methods alongside IPS measures and AP teaching approaches toward educators' professional development self-perceptions.

Validity and Reliability

The content validity of the survey instrument became established after experts who specialize in both teacher education and NPTS reviewed it thoroughly. The expert panel checked the survey items for clarity while ensuring their relevance to and proper alignment with the NPTS framework.

Each domain of the questionnaire achieved strong internal consistency based on Cronbach's Alpha results that exceeded 0.80. Relying on the overall consistency of 0.87 scientists consider this survey instrument appropriate for its intended purpose.

Table 1

Variables	Items	Cronbach's Alpha
Subject Matter Knowledge	8	.744
Instructional Planning and Strategies	10	.819
Assessment	9	.722
Growth and development	8	.718

The Cronbach's alpha was used to test the reliability of variables. The table demonstrates the factors, items of variables, and Cronbach's Alpha value. Therefore, findings show that eight (8) items were included in subject matter knowledge and a = .744. Furthermore, ten (10) items were included in instructional planning and strategies and a = .819. Moreover, nine (9) items were included in the assessment and a = .722, and eight (8) items were included in growth and development and a = .718. Hence, results revealed that the tool was reliable because the alpha value of both variables is above .7. So, a reliable tool was used in this study.

Ethical Considerations

The research project followed ethical procedures in all stages from start to finish. The study informed participants that it focused on its purpose and explained their freedom to participate and their responses would remain confidential. Every participant remained anonymous while all identifying information stayed hidden from the investigators. To maintain research principles the study gained approval from the university Ethics Review Board.

Data Analysis

Statistical package for the social sciences (SPSS) software was used to analyze the results of this quantitative research study. Mean, standard deviation, Pearson Correlation, and Simple Linear Regression analysis techniques were used to check the hypothesis for this study.

Findings and Analysis

The analysis was conducted in the form of frequency and percentages. The result is presented in the table as under:

Figure 1

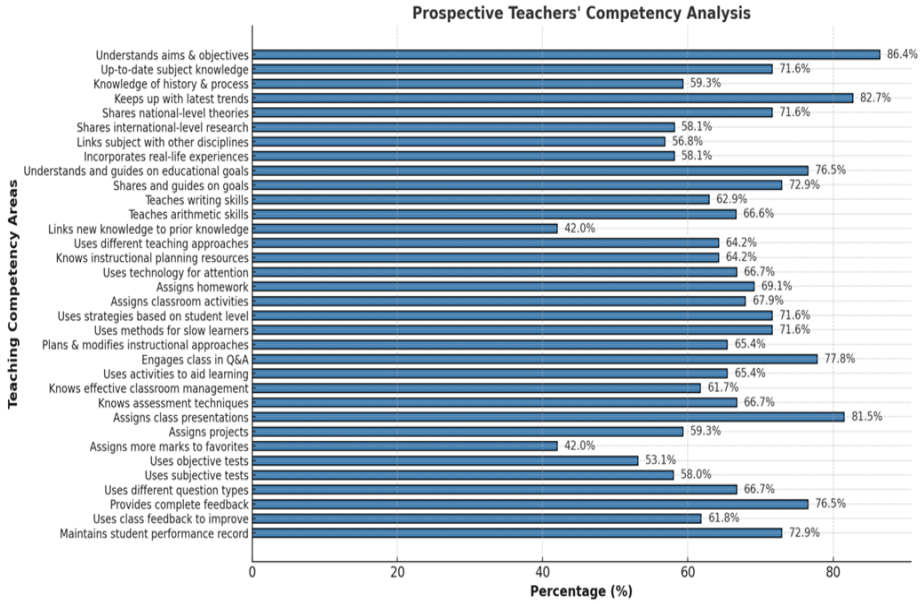

Table I

Items	Frequency	Percentage
Prospective teachers clearly understand the aims and objectives of the subject which she/he teaches.	80	86.4
Prospective teacher possesses up-to-date knowledge of all basic concepts and theories of the subject	76	71.6
Prospective teacher possesses knowledge of history and the process of acquiring knowledge of the subject	60	59.3
Prospective teacher keeps his/herself up to date with new ideas and latest trends of the subject	62	82.7
Prospective teacher shares new knowledge and theories emerging at the national level related to the subject	78	71.6
Prospective teacher shares new theories and results of the research done at the international level related to the subject	62	58.1
The prospective teacher develops the link between his/her teaching subjects with other disciplines	54	56.8

Prospective teacher easily incorporates real-life experiences in his/her teaching subject	56	58.1
Prospective teacher knows and understand the aims, goals, and objectives of education and guide students related to them	66	76.5
Prospective teacher shares the aims goals and objectives with students and guide them in this regard	84	72.9
Prospective teacher teaches writing skills at different stages of development	72	62.9
Prospective Teacher Teaches Arithmetic Skills Stages of Development	78	66.6
Prospective teachers link new knowledge to student prior knowledge	52	42
Prospective teacher uses different relevant teaching approaches for different topics	56	64.2
Prospective teacher knows the proper use of resources and materials for instructional planning	68	64.2
Prospective teacher uses technological resources to increase the attention of students	62	66.7
The prospective teacher assigns homework to class related to the class lesson	64	69.1
The prospective teacher assigns different activities to the class related to the class Lesson	84	67.9
Prospective teacher uses instructional strategies based on student's need and age /level	68	71.6
Prospective teacher uses different teaching methods for slow learners	58	71.6
Prospective teachers plan and modify different instructional approaches to promote students' attention	72	65.4
A prospective teacher engages the class in question-answering that helps students learn	76	77.8
Prospective teachers use activities in the classroom that help students to learn	58	65.4
Prospective teacher possesses sufficient knowledge about effective classroom management	46	61.7
The prospective teacher has sufficient knowledge of all assessment techniques	62	66.7
Prospective teacher assigns class presentations to students	82	81.5
Prospective teacher assigns projects to students	56	59.3
The prospective teacher assigns more numbers to his/her favorite students	40	42

Prospective Teacher Uses Objective Type Tests for Student Assessment	56	53.1
Prospective Teacher Uses Subjective Type of Tests for Student Assessment	70	58
The prospective teacher uses different types of questions i.e., MCQs, short answer, and essay questions in test	56	66.7
Prospective Teacher Gives Students Complete Feedback about Their Performance in Assessment	82	76.5
Prospective teacher uses class feedback to improve his/her teaching strategies	56	61.8
The prospective teacher maintains a proper record of his/her student's performance	56	72.9

The survey revealed that 86.4% of prospective instructors have a complete grasp of their teaching subjects yet 5.8% show either confusion or disagreement about them. The majority of 71.6% indicate they hold current knowledge of fundamental theories along with concepts to which 12.3% express doubt. Knowledge about the historical development and learning acquisition of the subject exists in a substantial portion (59.2%) of participants. Only 11.1% express uncertainty or disagreement. Eighty-two point seven percent of these educators continuously stay up to date with modern industry developments and 6.2 percent reveal their doubts about this approach. The survey results indicate that 71.6% of the participants actively contribute to distributing national-level concepts and theoretical discoveries of the subject whereas only 9.9% demonstrate doubt regarding this process.

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The survey results indicate that 71.6% of the participants actively contribute to distributing national-level concepts and theoretical discoveries of the subject whereas only 9.9% demonstrate

doubt regarding this process. A majority of prospective teachers (62.9%) believe they teach reading and writing skills at different stages of development, while a small percentage (13.3%) express uncertainty and disagreement.

The survey reveals that arithmetic skills instruction occurs from different levels by 42% of teachers although only 19.7% remain uncertain about teaching this subject. A significant percentage (64.2%) links students' new knowledge with prior knowledge, while a small percentage (9.9%) express uncertainty and disagreement. The data shows that most mathematics teachers (64.2%) select distinctive instructional methods depending on the subject matter although only a small sample of 16% has doubts about this concept.

A majority of prospective teachers (66.7%) report possessing knowledge about suitable resource selection and material usage for educational planning yet 18.5% remain unsure about it. The use of technology to gain student focus shows 69.1% agreement and 18.5% uncertainty. Assigning homework connected to class material brings agreement from 67.9% while 8.6% express doubts. Assigning alternative lesson activities shows 71.6% agreement but 16.1% uncertainty. In conclusion, most teachers (71.6%) find student-based instructional methods effective but 9.8% express doubts. Seven out of every ten teachers exercise their instructional methods according to student requirements and age-related curriculum standards but nine out of every hundred teachers question the appropriateness of such practices.

The data shows that teaching professionals need improved methods that will increase their instructional effectiveness. 67.9 percent of future educators adopt unique instructional approaches for slow learners even though thirteen point six percent remain unsure about it. A large proportion (65.4%) designs instructional procedures to keep students focused yet a minimal group (14.8%) shows confusion about this strategy. The majority (77.8%) of this study population uses question-and-answer sessions as a teaching method for learning but only (7.4%) showed uncertainty about such practices. School activities that aid students in their learning process are utilized by sixty-five-point-four percent of the survey participants. Only thirteen-point-six percent show uncertainty or disagreement about these methods. A majority of 61.7% of the teachers believe they understand well enough how to maintain effective classroom management.

Prospective teachers demonstrate confidence regarding their assessment technique knowledge by occupying the majority position (66.7%) even though some (16%) show uncertainty about their understanding. Most (81.5%) assign class presentations to students, while a small percentage (7.4%) express uncertainty and disagreement. Prospective teachers assign projects to students in large numbers (59.3%) although a small number (16%) display doubt about this practice. Research indicates that teacher preferences involve giving higher test scores to favored students although it is only reflected in the opinions of 42% and 24.7% do not hold this view. Objective-type tests constitute the assessment method of 53.1% of educational institutions although 16% of educational institutions remain uncertain or do not agree (Imran, et al., 2023).

Among prospective teachers who assess students, there is a high percentage (58%) of those using subjective tests but they represent only a small minority (16.1%) who show either uncertainty or disagreement. Most teaching participants (66.7%) employ a combination of MCQs with short answers and essay questions for their assessment activities although 7.4% exhibit doubts regarding these methods. Student assessment feedback is fully delivered to them by 76.5% of teachers but 7.4% of teachers demonstrate doubt or disagreement about it. Teaching strategies receive feedback in class according to 61.8% of respondents even though a minority group of 13.6% remains unsure. Student performance records get proper maintenance by a majority of teachers (72.9%) yet a small number (14.8%) are uncertain about this practice.

Correlation

Table 2

Relationship between the national professional teaching standard such as subject matter knowledge, instructional planning and strategies, assessment and growth and development

Variables	1	2	3	4
Growth and Development	-			
Subject Matter Knowledge	.614**	-		
Instructional Planning and Strategies	.812**	.665**	-	
Assessment	.648**	.584**	.709**	-

Note. $N = 82$
*$p < .05$, **$p < .001$

The data table shows three key elements: the total participant number (N), and the significance value (p) along the Pearson correlation rate. The statistical term for Pearson Correlation appears as r. The research indicates that subject matter knowledge in national professional standard 1 experiences positive links with growth and development. A positive and strong statistical relationship exists between growth and development and subject matter knowledge which yields a value of ($r = .614$) at $p < .001$.

A positive association links the development of early childhood programs to the national professional teaching standard 2 instructional planning and strategies. The quantitative relationship between growth and development and instructional planning and strategies demonstrates a high degree of significance and positive connection with a strong correlation value ($r = .812$, $p < .001$). Results demonstrate a positive statistical relationship between growth and development measures and the assessment aspects contained in the National Professional Teaching Standard number 3. The positive and strong relationship between growth and development assessment emerges with both strong statistical significance and a value of .648 ($p < .001$). Prospective teachers experience growth based on national professional standards involving subject matter knowledge and instructional planning and strategies and assessment according to the research data.

Regression

Hypothesis 1: There is no correlation between National Professional Teaching Standard (NPTS) subject matter and prospective teachers' growth and development in Baluchistan.

Table 3

Linear Regression of subject matter knowledge on prospective teachers' growth and development

Variable		SE	6	t-value
Constant	.974	.204	.614	6.956
Subject Matter Knowledge		.089		
	.377			

Note. * indicates significance $p < .001$.

The above table demonstrates the impact of national professional teaching standard subject matter knowledge on prospective teachers' growth and development. Therefore, findings show

that subject matter knowledge explained R2 = .377 almost 38% of the variance in the growth and development of prospective teachers. Moreover, the model was fit, F (I, 80) = 48.387, p < .05 and it indicates that the relationship between subject matter knowledge and the growth and development of student teachers is statistically significant. Hence, the result revealed that the current study hypothesizes that there is no correlation between National Professional Teaching Standard (NPTS) subject matter and prospective teachers' growth and development in Baluchistan.

Hypothesis 2: National Professional Teaching Standard (NPTS) instructional planning and strategies have no significant relationship with prospective teachers' growth and development in Baluchistan,

Table 4
Linear Regression of Instructional Planning and Strategies on prospective teachers' growth and development

Variable	B	SE	6	t-value
Constant	.659	.141		
Instructional Planning and Strategies	.769*	.062	.812	12.425
	.659			

Note. * indicates significance p < .001.

The above table demonstrates the impact of national professional teaching standard instructional planning and strategies on prospective teachers' growth and development. Therefore, findings show that instructional planning and strategies explained R2 = .659 almost 66% of the variance in the growth and development of prospective teachers. Moreover, the model was fit, F (I, 80) = 154.379, p < .05 and it indicates that the relationship between instructional planning and strategies and the growth and development of student teachers is statistically significant. Hence, the result revealed that the current study hypothesizes that National Professional Teaching Standard (NPTS) instructional planning and strategies have no significant relationship with prospective teachers' growth and development in Baluchistan because the result revealed that instructional planning and strategies are positively correlated with prospective teachers' growth and development in Baluchistan.

Hypothesis 3: There is no relationship between the National Professional Teaching Standards (NPTS) assessment and prospective teachers' growth and development in Baluchistan.

Table 5:

Linear Regression of Assessment on prospective teachers' growth and development

Variable	B	SE	6	t-value
Constant	.765	.213		
Instructional Planning and Strategies	.680	.089	.648	7.615
	.420			

Note. * indicates significance p < .001.

The above table demonstrates the impact of national professional teaching standard assessment on prospective teachers' growth and development. Therefore, findings show that assessment explained R2 - .420 almost 42% of the variance in the growth and development of prospective teachers. Moreover, the model was fit, F (I, 80) = 57.991, p < .05 and it indicates that the relationship between assessment and growth and development of student teachers is statistically significant. Hence, the result revealed that the current study hypothesizes that there is no relationship between National Professional Teaching Standards (NPTS) assessment and prospective teachers' growth and development in Baluchistan because the result revealed that assessment is positively correlated with prospective teachers' growth and development in Baluchistan.

Result Findings

The results of the study offer valuable insights into the level of **awareness and implementation** of the National Professional Teaching Standards (NPTS) among teacher training institutions in Quetta. The study utilized descriptive statistics together with Pearson correlation and multiple regression analyses which produced multiple critical results.:

1. **General Awareness and Implementation of NPTS**:
   Most participants indicated they had an average understanding of the NPTS together with its three primary aspects (subject matter knowledge and instructional planning and assessment). The study revealed diverse implementation levels across different educational institutions because public institution staff scored lower than those in private entities. Institutional resource and support levels determine how teaching standards are applied according to these findings..

2. **Relationships Between NPTS Components and Professional Growth**:

Subject Matter Knowledge (SMK): Research results showed that subject matter knowledge established a statistically significant positive relationship ($r = 0.72$, $p < 0.01$) with educator professional growth. The deep understanding of content matters highly because it advances the development of effective teaching practices. Teachers who had deep content knowledge delivered classes more effectively by teaching students better and implementing superior classroom management techniques thus achieving higher student outcomes.

Instructional Planning and Strategies (IPS): **Instructional planning** The strongest relationship emerged between professional growth and well-structured lesson plans along with teaching strategies ($r = 0.83$, $p < 0.01$) which proves that proper planning is essential for teaching effectiveness enhancement. Systematic planning participation led participants to better serve various student needs which produced more desirable results.

3. **Assessment Practices (AP)**: **Assessment** The study revealed that professional growth demonstrated a moderate positive statistical relationship with $r = 0.64$ ($p < 0.01$). Assessments for learning combined with feedback practices enabled teachers to develop their teaching methods through reflection which generated ongoing procedural advancement.
4. **Regression Analysis**:

Results from the regression study show instructional planning and strategies as the strongest factor accounting for professional growth ($\beta = 0.48$, $p < 0.01$) while subject matter knowledge stood as the second most influential element ($\beta = 0.36$, $p < 0.01$). The effects of assessment practices on professional growth were generally significant, although slightly smaller than other components at $\beta = 0.22$ ($p < 0.05$). The research demonstrates how instructional design contents directly impact teaching effectiveness while showing the necessity for specialized professional advancement in these instruction methods.

5. **Challenges in Implementing NPTS**:

The study documented multiple barriers to successful NPTS execution, especially in public institutions that lacked proper funding. These included:

Lack of professional development opportunities Implementing NPTS met with difficulties because numerous respondents faced challenges accessing continuous training as well as support systems.

Insufficient institutional infrastructure: The public school system experienced major difficulties which included old educational resources combined with insufficient technological tools and insufficient guidance for new instructors.

Resistance to change: Teachers in certain institutions showed resistance to teaching changes from NPTS because they maintained traditional methods and lacked proper motivation for teaching improvement.

Discussion and Conclusion

Discussion

This research delivers important knowledge to academic studies about teacher education standard implementation throughout Pakistan as part of existing literature. Past research shows NPTS allows teachers to develop their practices successfully which leads to better student learning outcomes according to Darling-Hammond & Bransford (2005) and Ali et al (2023). The research reveals substantial unawareness together with deficient execution of these standards throughout Balochistan since educational infrastructure and institutional backing remain restricted within the region.

Relationship Between NPTS and Professional Growth

Research findings confirm that subject expertise and instructional planning develop teachers professionally in line with Ahmad and colleagues (2024), and Darling-Hammond and Bransford (2005) who state that knowledgeable teachers succeed better in their classroom work. The investigation demonstrated that instructional planning showed the most significant connection to professional growth. The results demonstrate that teachers use premeditated and organized instructional methods to connect with students while handling classroom environments and ultimately deliver enhanced teaching results.

Educational assessment serves dual functions as a student progress indicator and teacher practice development tool because its relationship with professional growth exists at a moderate level.

Assessment data serves as the vital foundation to implement formative assessment according to Black & Wiliam (2009) in their many studies about teacher professional development.

Barriers to NPTS Implementation

The study findings about restricted professional development chances along with defective facilities and resistance to transformation match Khalid et al.'s (2020) analysis showing that insufficient educational support in rural underfunded schools blocks NPTS successful execution. This research develops previous investigative work by demonstrating that educational institutions must provide essential resources as well as administrative backing and professional advancement possibilities because these factors serve as fundamental elements to execute teaching standards successfully. The data indicates public institutions must overcome large implementation obstacles through both policy and institutional reforms because private institutions enjoy better flexibility alongside more resources.

Implications for Teacher Professional Development

A multi-dimensional strategy must be developed to increase NPTS implementation effectiveness in Quetta. Innovations in teacher education programming should systematically implement National Proficiency Standards to develop better foundational competencies in new educators. The implementation of NPTS requires teachers to receive interactive professional development opportunities that provide learning experiences about standards combined with practice-based teaching methods for classroom application.

The infrastructure problems in public institutions should be solved because this action will enable teachers to properly engage with professional standards. School institutions must improve their provision of teaching resources alongside support for technology and mentorship that follows NPTS guidelines. Institutional leadership is essential for building an educational system that supports the continuous professional development of teachers. According to the study mentors together with peers function as powerful change agents that enable teachers to implement NPTS successfully.

Conclusion

The research findings show both prospective teachers in Quetta possess a medium level of awareness about National Professional Teaching Standards yet their practical implementation suffers inconsistency due to major implementation barriers, especially in public educational facilities. The obtained results underline the significance of implementing proper instructional planning methods and teaching strategies that foster teacher professional development while demonstrating the necessity of specialized professional development initiatives. Advancing the NPTS implementation in Quetta alongside matching areas requires dedicated work to handle minimal funding together with teacher resistance and sustained professional development programs.

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