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BRIDGING TECHNICAL ASSISTANCE
FOR GOVERNMENTS (B-TAG)

Project Report

CONTINUOUS PROFESSIONAL DEVELOPMENT (CPD)

For Elementary School Teachers (ESTs)
in Khyber Pakhtunkhwa



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List of Abbreviations

ASDEOs	Assistant Sub-divisional Education Officers
BTAG	Bridging Technical Assistance for Governments
COT	Classroom Observation Tool
CPD	Continuous Professional Development
DPD	Directorate of Professional Development
E&SED	Elementary and Secondary Education Department
FCDO	Foreign, Commonwealth & Development Office
FGD	Focus Group Discussions
LMT	Lead Master Trainer
MGT	Multigrade Teaching
MT	Master Trainer
PDD	Professional Development Day
PESP-II	Punjab Education Sector Programme-II
PST	Primary School Teacher
QAED	Quaid-e-Azam Academy for Educational Development
SL	School Leader
SLO	Student Learning Outcomes
ToT	Training of Trainers
DCTE	Directorate of Curriculum and Teacher Education
LMS	Learning Management System
ESTs	Elementary School Teachers
SEs	Subject Experts
HTs	Head Teachers
CoP	Communities of Practice
RPDC	Regional Professional Development Centre



Executive Summary

The Continuous Professional Development (CPD) initiative for Elementary School Teachers (ESTs) in Khyber Pakhtunkhwa (KP) aims to address the significant gaps in teacher training at the elementary level, focusing on enhancing pedagogical skills and improving student learning outcomes. This report outlines the design and implementation of the CPD-EST pilot, the framework adopted, and the key findings from the implementation.

The CPD framework was jointly developed by the Bridging Technical Assistance for Governments (B-TAG), the Directorate of Professional Development (DPD), the Directorate of Curriculum and Teacher Education (DCTE), and the Elementary and Secondary Education Department (E&SED). The programme is structured around four core components: i) Personal Learning Hours for self-directed study through a Learning Management System (LMS); ii) Teacher Learning Forums, combining synchronous and asynchronous platforms; iii) Classroom Observations to enable formative feedback; and iv) Professional Learning Communities (PLCs) to facilitate peer-to-peer collaboration and support.

The implementation was done in two phases. Phase I was conducted across six districts: Malakand, Charsadda, Orakzai, Kohat, Nowshera, and Battagram engaging 1,517 ESTs (812 male, 705 female) from 554 schools (272 male, 282 female). In phase-II of the programme, the intervention was expanded to reach another 1,498 ESTs (787 male, 711 female) from an additional 476 schools (228 male, 248 female) across six districts: Malakand, Charsadda, Orakzai, Nowshera, Battagram and Karak. ESTs from the participating schools completed self-paced modules via LMS. These teachers received support from 1,002 (534 male, 468 female) headteachers, trained in coaching, mentoring, and use of the Elementary Classroom Observation Tool (COT) as well as 92 (45 male, 47 female) subject experts trained on facilitating learning forums using teacher performance and classroom observation data. COT adapted for elementary grades was used to assess key areas such as lesson facilitation, understanding checks, feedback to students, critical thinking, classroom culture, and subject-specific teaching skills. Additionally, Teacher Professional Development Forums were organised in Nowshera, Charsadda, and Orakzai during December 2024 and January 2025. These forums collectively engaged 202 participants (65 in Charsadda, 62 in Nowshera, and 75 in Orakzai), including headteachers, ESTs, and Subject Experts. Participants engaged in keynote sessions, panel discussions, and subject-specific breakout groups that encouraged microteaching demonstrations and reflective dialogue.

The LMS proved instrumental in enabling flexible learning, though challenges such as digital access, connectivity, and workload constraints impacted full participation. Despite these



barriers, data from end-of-module assessments, teacher surveys and focus group discussions affirmed a positive shift in teaching behaviour and professional motivation.

The intervention successfully demonstrated a scalable, cost-effective model that improves teacher capacity and student learning outcomes. Classroom observation data collected by independent observers before and after the intervention highlighted improvements in teaching practices of teachers across participating districts with average COT scores increasing from 3.30 pre-intervention to 3.68 post-intervention. Additionally, COT data collected by headteachers and Subject Experts throughout the implementation of the intervention revealed positive trend, i.e. scores increased from an average of 3.67 in February 2025 to 3.77 in April 2025.

Qualitative feedback from teachers further reinforced the programme's effectiveness and relevance. More than 95% of participants found the training content aligned with their needs, with 88% rating lesson plans as practical and 87% considering training videos effective in illustrating best practices. The self-paced format was widely valued, with 85% appreciating the flexibility and 86% finding instructions to be clear. Assessments were well received, with nearly 90% of teachers reporting increased confidence and over 90% recognising the value of feedback for improvement. Overall, 89% of teachers felt that the training met their expectations, and 86% would recommend it to their peers.

Based on the findings and results from the intervention, the report recommends institutionalisation of CPD-EST across all districts by March 2026, supported by the development of a real-time LMS-COT dashboard, and development of formal recognition mechanisms for participating teachers.

- ✓ **7** Districts across two phases (**Malakand, Charsadda, Orakzai, Kohat, Nowshera, Battagram, and Karak**)
- ✓ **1,030** Schools including **500** girls' schools and **530** boys' schools
- ✓ **92** Subject Experts including **47** females and **45** males
- ✓ **1,002** Headteachers trained, including **468** females and **534** males
- ✓ **3,015** Elementary School Teachers including **1,416** females and **1,599** males
- ✓ **115,000:** Children impacted, including approximately **53,000** boys and **692,000** girls

Total Beneficiaries



Overview of the Report Structure

This report provides a comprehensive account of the CPD-EST initiative in Khyber Pakhtunkhwa, detailing its design, phased implementation, observed outcomes, and strategic recommendations for scale-up. It is intended for policymakers, education authorities, development partners, and technical assistance providers working in the domain of teacher professional development. The aim is to offer actionable insights based on evidence gathered during the implementation to inform future investments, planning, and policymaking around in-service teacher training at the elementary level in KP. The report also serves as a learning resource for the DPD and E&SED enabling reflection on implementation strengths, gaps, and system-level enablers.

The report is organised into the following sections. **Section I** introduces the rationale and significance of CPD-EST in the context of Khyber Pakhtunkhwa's educational priorities, highlighting how improved teacher performance contributes to better student outcomes. **Section II** presents a review of national and international literature on teacher development, establishing the theoretical grounding for the CPD-EST framework and its relevance to low-resource public education systems. **Section III** describes the technical design and methodology adopted during the pilot, including sampling strategy, data collection tools, and performance indicators used to assess progress and impact. **Section IV** details the delivery of training, digital learning strategies, and support mechanisms provided to ESTs, headteachers, and subject experts across both phases of implementation. **Section V** documents the Teacher Professional Development Forums held in selected districts, providing insights into how these forums strengthened peer engagement and knowledge-sharing. **Section VI** presents an analysis of results from classroom observations, teacher feedback, and subject knowledge assessments, highlighting improvements and areas for continued support. **Section VII** offers a conclusive reflection on the pilot's effectiveness and its implications for system-wide integration of CPD in KP. **Section VIII** outlines strategic recommendations for scaling and sustaining CPD-EST across the province.

Section I: Introduction

1.1 The Need for CPD-ESTs in KPK

Khyber Pakhtunkhwa, a province in Pakistan, continues to grapple with systemic challenges in delivering quality elementary education, particularly in relation to the professional development of its teaching workforce. While notable progress has been made in expanding access to education, critical and persistent gaps remain in the preparation, support, and continuous capacity-building of Elementary School Teachers. These deficiencies are widely recognised as a significant factor contributing to the stagnation of student learning outcomes across the province¹.

One of the most pressing concerns is the lack of a coherent and sustainable professional development structure for ESTs. Most teachers, especially those responsible for subject-specific instruction, receive limited pedagogical training, mentorship, or peer engagement opportunities that could foster real-time growth.

The Continuous Professional Development for Elementary School Teachers initiative was conceived to address these shortcomings through a multifaceted, data-driven approach. At its core, the initiative targets three foundational pillars essential to building teacher capacity:

Improving Teacher Pedagogical Skills:

As KP transitions to a subject-specialised teaching model, the need for targeted pedagogical training has become more urgent. ESTs require customised and subject-specific support to teach content effectively, particularly in high-impact subjects such as Mathematics, Science, and English. The CPD-EST model prioritises strategies that build conceptual clarity and promote active learner engagement, thereby equipping teachers to meet diverse classroom demands.

Enhancing Teaching Quality:

In the absence of regular professional development, instructional practices remain outdated and static. This has hindered innovation and reduced student engagement in classrooms. Through structured opportunities for reflection, feedback, and collaboration, the CPD-EST initiative

¹ <https://www.unicef.org/pakistan/documents/evaluability-assessment-khyber-pakhtunkhwa-education-improvement-programme-kp-eip-2021>



aims to modernise instructional methods and embed evidence-based teaching practices across the system.

Leveraging Technology for Professional Development:

Recognising the logistical and geographic challenges faced by teachers, particularly in remote areas, the programme utilises a Learning Management System (LMS) to enable self-paced digital learning. This platform promotes equity by offering standardised, high-quality content to all teachers, regardless of location. It also supports monitoring and evaluation through progress tracking features, making it a key tool in both access and accountability.

1.2 Overview of the CPD-EST Framework

The CPD framework for ESTs in KP is structured around four interlinked components that collectively foster teacher growth, collaboration, and instructional improvement. Designed with scalability and contextual relevance in mind, the framework integrates digital platforms, peer learning, and practical feedback mechanisms to provide comprehensive support to ESTs.

Each component plays a distinct yet complementary role in the professional development journey:

i. Personal Learning Hours:

ESTs are encouraged to undertake structured, self-paced learning via the LMS, which offers modules on subject specific pedagogy. This delivery mode provides flexibility and on-demand access, enabling teachers to learn at their convenience. The standardisation and alignment of module content with academic calendar ensures relevance and usability.

ii. Teacher Learning Forums:

Teacher Learning forums create spaces for collaborative discussion. Facilitated by subject experts, these sessions encourage ESTs to share experiences, solve pedagogical challenges, and reflect on their practice. The dual format (asynchronous and synchronous) ensures continuous engagement while accommodating diverse schedules. The synchronous learning forums are planned and delivered monthly informed by the ESTs' performance in digital modules, classroom observation data and discussion on asynchronous learning forums. These forums function as catalysts for ongoing learning and pedagogical evolution

iii. Classroom Observations:

Observation is central to the CPD-EST model, offering formative, non-punitive feedback through structured visits by headteachers. Using the Classroom Observation Tool (COT) adapted for elementary, observers assess instruction quality, engagement strategies, and classroom culture. The primary focus is on developmental guidance rather than evaluation, making observation a core mechanism for continuous improvement. Subject Experts also conduct joint classroom observations with headteachers to foster a collaborative environment for improvement and learning.

iv. Professional Learning Communities (PLCs):

PLCs are formed around subject expertise, allowing ESTs to collaborate in lesson design, student work analysis, and strategy development. These teacher-led forums, moderated by experts, support professional identity building and foster a sustainable culture of mutual support and peer-driven innovation. PLCs are instrumental in enhancing teacher motivation and embedding reflective practices.

The CPD model's components are interconnected, and their roles in enhancing teacher performance are summarised in the flowchart below.

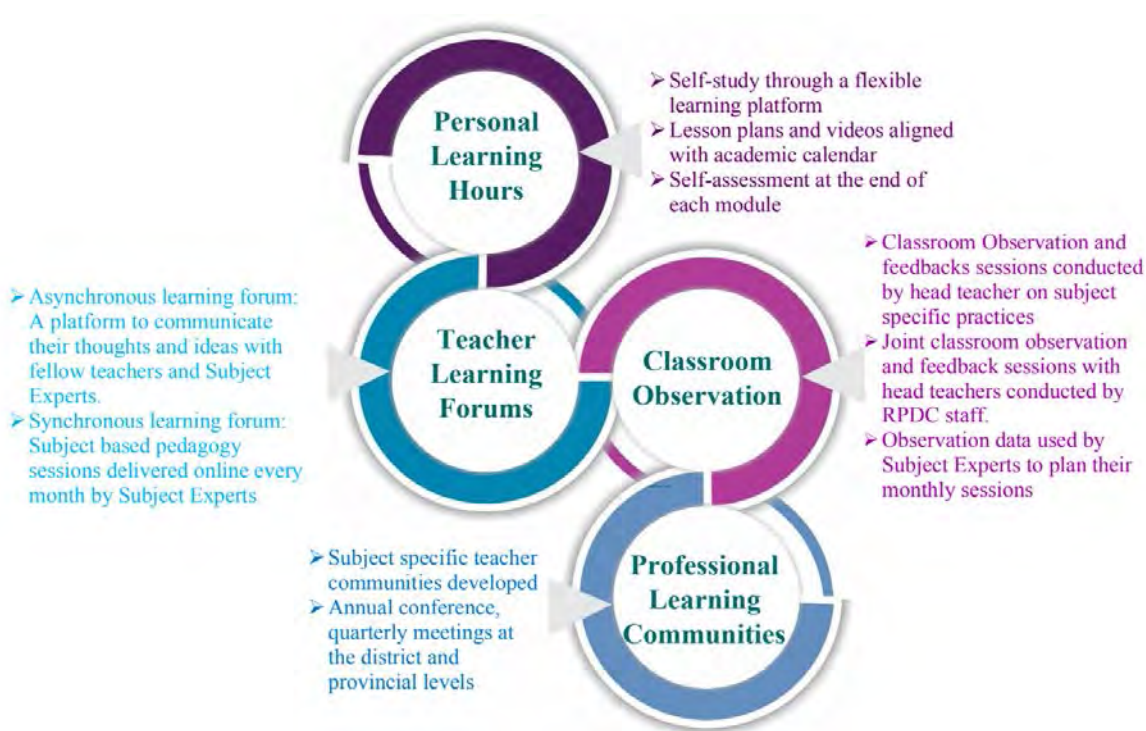


Figure 1: CPD-EST Key Activities

Section II: Literature Review

The global literature on CPD reveals that impactful teacher learning blends autonomy, collaboration, structure and data-driven practice. In Finland, for example, educators are treated as lifelong learners who design much of their own development, benefitting from considerable autonomy and trust; they engage in blended learning that combines face-to-face seminars with online modules, and participate in Professional Learning Communities (PLCs) where peer feedback, shared practice and team projects reinforce a culture of innovation and reflective inquiry (Sahlberg, 2011; Hargreaves & Fullan, 2012).² Singapore's CPD model similarly aligns with national education priorities by offering clear career pathways, guiding teachers from novice to expert levels while embedding mentoring and systematic peer observation to ensure that new educators receive targeted support. This framework is underpinned by rigorous, data-driven development, where performance metrics and student outcomes continuously inform the design, implementation and evaluation of professional learning (Goh, 2009; Tan & Chua, 2008).³ In the United Kingdom, a mandated minimum number of CPD hours per year helps maintain high teaching standards, with learning opportunities delivered through both external organisations and internal school providers. Contextualised workshops, seminars and digital courses are complemented by strong leadership support, as school leaders cultivate a CPD culture by allocating resources, modelling reflective practice and empowering teachers to pursue structured, collaborative development (Cordingley et al., 2005; Bubb & Earley, 2004).⁴ Together, these international insights demonstrate that sustained, job-embedded learning, robust collegial networks, a blend of delivery modalities and data-informed planning are critical to improving teaching quality.

² Sahlberg, P. (2011). *Finnish Lessons: What Can the World Learn from Educational Change in Finland?* Teachers College Press.

Hargreaves, A., & Fullan, M. (2012). *Professional Capital: Transforming Teaching in Every School*. Teachers College Press.

³ Goh, C. (2009). Professional Development and Educational Reform in Singapore. *The International Journal of Educational Management*, 23(5), 409-425.

Tan, C., & Chua, C. (2008). Teacher Professional Development in Singapore: Implications for Educational Change. *Educational Change*, 9(2), 118-134.

⁴ Cordingley, P., Bell, M., Thomason, S., & Firth, A. (2005). The Impact of Collaborative Continuing Professional Development (CPD) on Classroom Teaching and Learning. *Review of Educational Research*, 75(3), 293-328.

Bubb, S., & Earley, P. (2004). *Managing Teacher Leadership: A Development Guide for Schools*. Paul Chapman Publishing.



Effective CPD Strategies

Professional Learning Communities (PLCs):

PLCs have consistently proven to be effective in fostering sustained teacher growth. They create environments where educators can reflect collaboratively, share resources, and co-develop solutions to instructional challenges. Research from the UK and US confirms that active participation in PLCs correlates with improved teaching quality and student outcomes. The CPD-EST model integrates subject-specific PLCs to promote regular interaction, peer coaching, and collective problem-solving.⁵

Blended Learning:

Blended learning combines face-to-face interaction with online modules, offering teachers both flexibility and depth. It is particularly beneficial in regions with logistical constraints. The use of LMS in the CPD-EST initiative allows teachers to access expert-curated content asynchronously while engaging in structured forums and live discussions. This hybrid approach enhances accessibility while maintaining rigor and consistency.⁶

Mentorship and Peer Observation:

Mentorship and structured peer observation are essential for refining instructional practices. In systems like Singapore and Finland, novice teachers benefit from formalised mentoring frameworks and ongoing classroom feedback. This continuous cycle of observation and coaching is key to building pedagogical confidence and expertise.

⁵ Graham, C. R. (2006). Blended Learning Systems: Definition, Current Trends, and Future Directions. *Handbook of Research on Educational Communications and Technology*, 1-20.

⁶ Horn, M. B., & Staker, H. (2015). *Blended: Using Disruptive Innovation to Improve Schools*. Jossey-Bass. Veenman, S. (1984). Perceived Problems of Beginning Teachers. *Review of Educational Research*, 54(2), 143-178.

Section III: Technical Design & Methodology

This section presents the methodology employed to evaluate the CPD-ESTs intervention in KP. The intervention was designed to enhance teachers' subject knowledge and pedagogical skills, assessed via classroom observation tool adapted for CPD Elementary. A mixed-methods approach was adopted to systematically collect data on teachers' development and progression, using observations conducted by headteachers (internal observers) and by external/independent observers both before and after the intervention. The qualitative insights were gathered through FGDs with teachers and headteachers from a sample of intervention schools across all relevant districts.

The following sub-sections provide details on the methodology used to assess the effectiveness of the CPD-EST intervention:

Classroom Observations

To ensure the accurate collection of data on instructional practices and subject-specific pedagogical approaches, classroom observations were conducted in English, Mathematics, and Science prior to and after the intervention. Observers were carefully chosen for their subject expertise, appropriate academic qualifications, and experience in both teaching and educational data collection.

A purpose-built classroom observation tool, specifically developed for evaluating pedagogical practices at the elementary level, was used throughout the process. To maintain methodological consistency and comparability, all observations were standardised at the grade 6 level, with an equal distribution of observations across the three target subjects: English, Mathematics, and Science.

The tools used for conducting classroom observations had three main sections:

- Basic information on school, teachers, and number of students in grade 6
- 11 questions/indicators on pedagogical practices
- Subject specific questions/indicators

The tool used for conducting classroom observations is provided as an annexure.

The questions were designed to capture data through a rating scale across five distinct categories: 'Low', 'Medium Low', 'Medium', 'Medium High', and 'High'. Each category corresponds to a numerical value ranging from 1 to 5, where 1 represents the lowest level of performance and 5 represents the highest.

Data Validity Measures

Several measures were implemented to ensure the validity and reliability of the data. For the pre-intervention classroom observations, the process began with the careful selection of subject-specific observers, ensuring they possessed the necessary skills and knowledge to accurately assess teaching practices. Secondly, the observation tools included comprehensive guidance, with detailed descriptions of each indicator, to support observers in systematically capturing classroom practices. Thirdly, to reduce individual observer bias or variance, each teacher was observed simultaneously by two observers. Both observers recorded their assessments independently during the lesson. This dual-observer strategy enhanced the reliability of the data. Where more than one observer assessed a teacher, their observations were averaged to generate a final score, thereby reducing the impact of individual bias and ensuring a balanced evaluation of classroom teaching practices.

Sample Selection & Coverage

For data collection, the sampling approach followed purposive sampling. In KP, the CPD-EST classroom observations by external observers were conducted in schools from seven districts: Battagram, Charsadda, Karak, Kohat, Malakand, Nowshera, and Orakzai.

District wise number of observations, segregated by pre and post, are shown in the graph provided below:

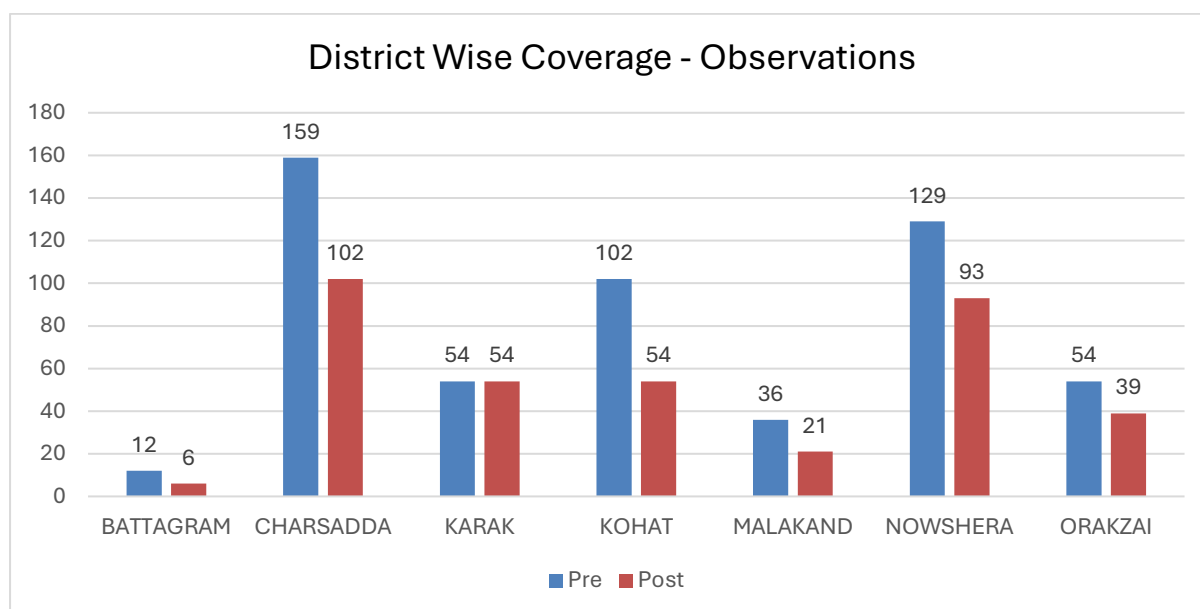


Figure 2: District Wise Coverage of Pre and Post Observation Results

The subject wise distribution of classroom observations at district level is shown as under:

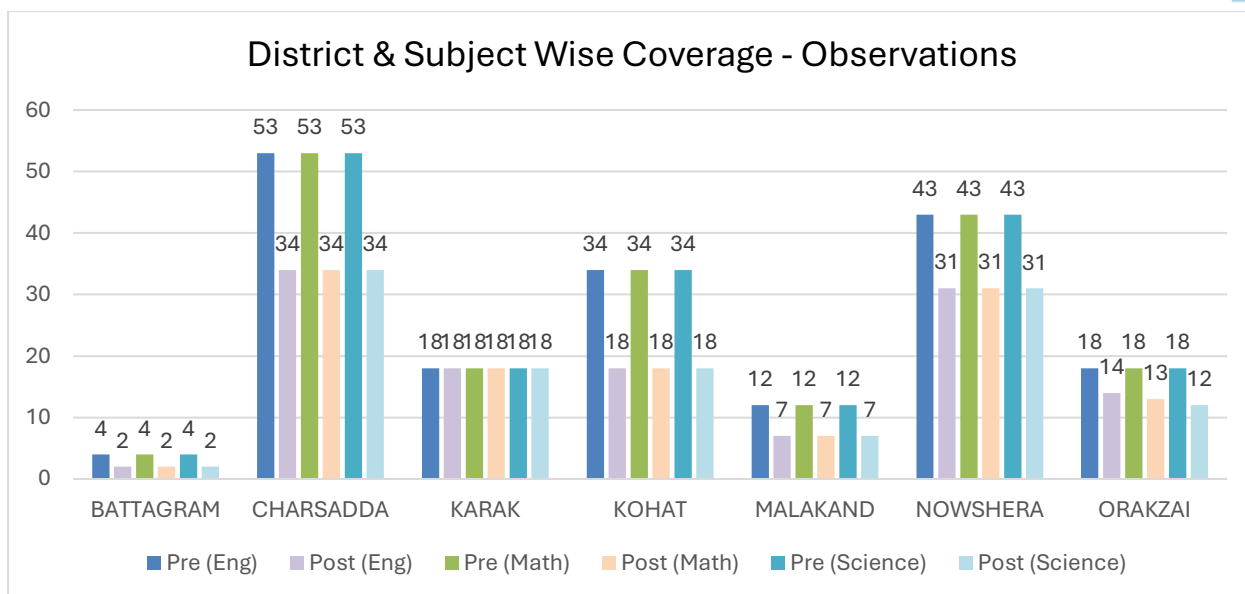


Figure 3: District & Subject Wise Coverage of Pre and Post Observation Results

The collected data was systematically analysed to develop a comprehensive understanding of the outcomes of the intervention. The analysis focused on the following key areas:

- **Trends in classroom observation scores assigned by headteachers:** Patterns in scores from the Classroom Observation Tool (COT) were reviewed over time to evaluate how teaching practices evolved, as reported by school-based internal observers (headteachers).
- **Comparative analysis of pre- and post-intervention scores by external observers:** Changes in teaching performance were assessed by comparing baseline and endline COT scores recorded by independent, subject-specialist external observers.
- **Thematic findings from focus group discussions with teachers and headteachers:** Qualitative data from FGDs were examined to provide contextual insights into participants' perceptions of the intervention's effectiveness, as well as to identify recurring challenges or enabling factors affecting teaching practices across districts.

To evaluate the effectiveness of the intervention, scores assigned by independent observers before and after the intervention were compared. For a more nuanced analysis, this comparison was conducted at the domain level. Specifically, scores across the 11 general teaching practices were averaged and regressed on a time variable, with the same approach applied separately to each of the three subject areas.

The econometric model used in the analysis is represented as follows:

$$Y_{ist} = \beta_0 + \beta_1 Time_t + \epsilon_{ist}$$

Section IV: Implementation Details

This section provides a detailed overview of the implementation process of the CPD-ESTs initiative in KP, highlighting the key activities and milestones achieved during the rollout. The implementation phase encompasses various stages, ranging from identifying the target population to developing teaching materials and delivering training.

Scope of the Intervention

Phase-1

The CPD-ESTs pilot project was implemented across six districts in KP: Malakand, Charsadda, Orakzai, Kohat Nowshera, and Battagram. These districts were selected to ensure a representative sample of both urban and rural schools. The target population for the CPD program included:

Elementary School Teachers:

A total of 1,517 (812 male & 705 female) teachers from 554 (272 male & 282 female) schools participated in the programme.

Headteachers and Subject Experts:

526 (306 male & 220 female) headteachers and 73 (36 male & 37 female) subject experts were selected to facilitate the implementation of CPD within their schools. Headteachers were responsible for classroom observations and mentoring, while subject experts moderated the Teacher Learning Forums, and conducted joint classroom observations.

The details on phase-I have been covered in B-TAG's CPD KP Report, December 2024.

Phase-2

Based on the success of the pilot phase, CPD-EST was expanded to seven districts with inclusion of District Karrak in addition to Malakand, Charsadda, Orakzai, Kohat and Nowshera. The target population for the CPD program included:

Elementary School Teachers:

A total of 1,498 ESTs (787 male, 711 female) from 476 (228 male & 248 female) schools participated in the programme.

Headteachers and Subject Experts:

476 (228 male & 248 female) headteachers and 19 (9 male & 10 female) subject experts in addition to already trained 73 (36 male & 37 female) were selected to facilitate the implementation of CPD within their schools.



Figure 4: Headteachers' training of Karak at RPDC Kohat

Development of Teaching and Learning Materials

The creation of high-quality CPD materials was central to the initiative's success. These materials were designed to directly address the specific learning needs of ESTs and to provide practical support for teaching of Science, Mathematics and English in elementary schools in KP.

Creation of Digital Modules:

Digital modules including a teaching practice survey questionnaire, lesson plans aligned with the academic calendar, strategy videos, and formative assessment items were developed to strengthen in-service teacher professional development. In total, 6 digital modules were created for teachers, comprising 167 lesson plans, 4 instructional videos, and 420 assessment items across English, Math, and Science subjects. All materials were aligned with the academic calendar, strategy videos and formative assessment items were developed.

The primary objectives of the digital modules were to:

- Provide standardised content to ensure consistent training quality across the board.
- Offer wide access, including for teachers in remote areas who may have limited opportunities for in-person training.
- Enable teachers to revisit and reuse the content over time, reducing the need for frequent, cost-ineffective in-person training sessions, especially considering the high costs of transport allowances.

- Provide self-paced learning opportunities to teachers where they could go through the content flexibly at their own pace and attempt end-of-module assessments to assess their understanding
- Help elementary teachers gain a deeper understanding of core concepts and classroom best practices in Math, Science, and English, effectively bridging the gap between theory and practice.

A modular approach was taken to develop the content through which monthly modules were developed in all three subjects and shared every month with teachers.

Modules were developed to cover core subject content and generic pedagogical skills. Instructional designers collaborated with subject experts to ensure content was engaging, interactive, and aligned with local contexts. The digital modules included videos, interactive quizzes, and practice exercises. Multimedia tools were used strategically to cater to different learning styles and promote teacher engagement.

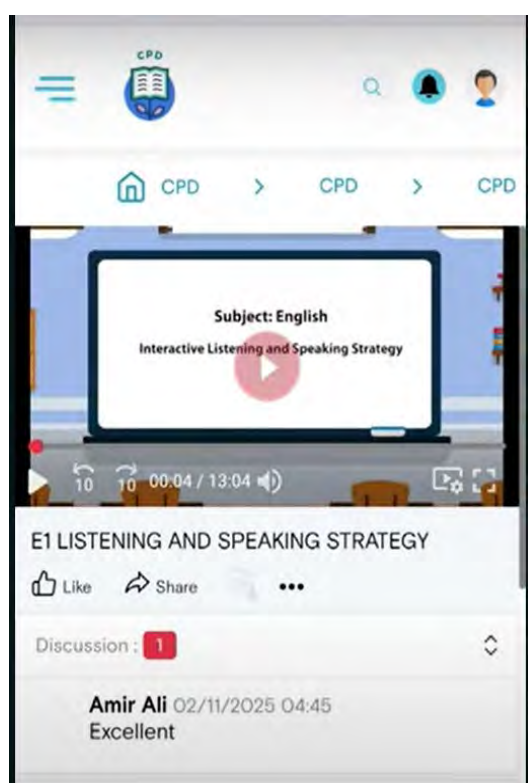


Figure 5: CPD-EST LMS

Content Review:

Before final deployment, the content was thoroughly reviewed by experts from the DPD and the DCTE. The experts from diverse disciplines including English, Mathematics, and Science participated, providing detailed evaluations and recommendations for improving the CPD content and the training modules. The focus of the review was to ensure that the materials were



not only aligned with the National Curriculum but also tailored to the specific educational context of KP. Reviewers assessed the relevance and accuracy of the material, the clarity of the instructions, and the applicability of various activities included in the modules.

Content Uploading and Hosting

Once the materials were finalised, they were uploaded to the LMS. Teachers were provided with credentials to access the platform and were oriented on how to navigate and utilise the resources. The uploading process ensured that all content was logically organised by subject and sequence, allowing teachers to track their learning progress easily.

Training of Headteachers and Subject Experts

The training of headteachers followed a cascade model, beginning with master trainers and reaching the headteachers through structured capacity-building sessions:

Training of Trainers (TOT)

A group of 16 master trainers (8 male and 8 female) was selected and trained intensively on 26 December 2024 at DPD Peshawar. These trainers were equipped with both content knowledge and facilitation skills to ensure effective delivery to the headteachers of the participating schools. TOT sessions used adult learning principles to maximise trainer engagement.

Training of Headteachers and Subject Experts:

Trained master trainers conducted in-person training sessions for 476 headteachers (228 male, 248 female) in batches between January 3 to 10, 2025. Additionally, 20 subject experts (11 male, 9 female) were trained in Karak from 2 to 4 January, 2025 equipping them with tools to provide targeted coaching and mentoring to their assigned ESTs and moderate synchronous and asynchronous learning forums. These workshops introduced the CPD framework, LMS navigation, and tools for mentoring and classroom observation. Follow-up support was provided through WhatsApp groups and periodic check-ins to maintain momentum and resolve issues.

Effectiveness of the Training of SEs

To assess the effectiveness of the training of Subject Experts, pre and post training scores testing subject content knowledge were collected and analysed. Significant gains were recorded for all three groups of Subject Experts. SEs demonstrated an average improvement of 21% in Mathematics, 23% in Science, and 17% in English.

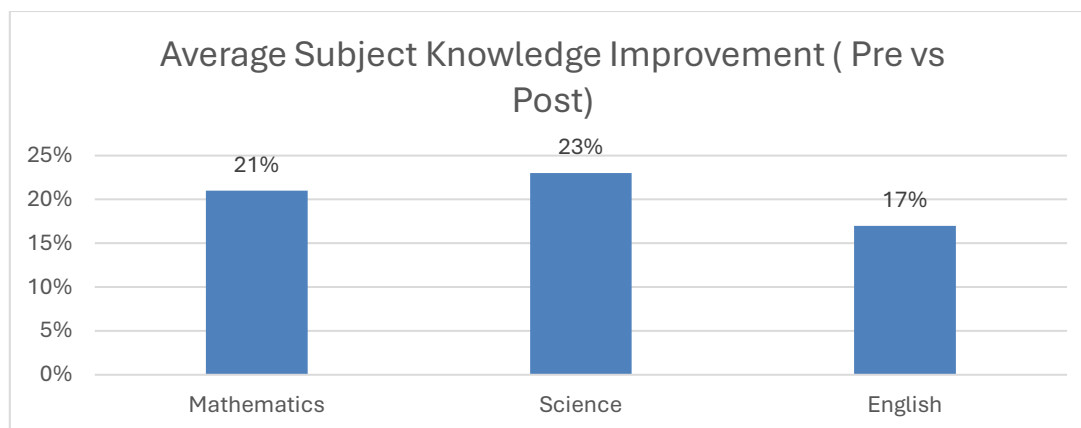


Figure 6: Improvement in Subject Content Knowledge post-training

Implementation at the School Level

Once trained, headteachers and subject experts began facilitating CPD activities at the school level. This included moderating Teacher Learning Forums, conducting classroom observations, and monitoring module completion. The presence of school-based mentors ensured real-time support for teachers and reinforced consistent implementation across diverse school contexts.

Teacher Professional Development Forums

Three Professional Development Forums were held in Nowshera, Charsadda, and Orakzai on December 30 and 31, 2024, and January 3, 2025, respectively. These forums were attended by 65 participants (44 males & 21 females) in Charsadda, 62 participants (32 males & 30 females) in Nowshera and 75 participants (42 males, 33 females) in Orakzai. The forums provided a platform for ESTs to interact with peers, subject experts, headteachers. They featured keynote sessions, panel discussions, and hands-on breakout activities.



Figure 7: Teacher Professional Development Forum Charsadda



Key Discussions held in Professional Development Forums

The forums highlighted CPD's role in improving teaching practices and subject knowledge, with discussions on benefits and challenges such as time constraints, limited resources, and the need for relevant training.

CPD Framework for Elementary Schools: Participants examined the new CPD Framework, emphasising its components including professional development activities, and classroom observations to improve teaching practices at the elementary level.

Teacher Learning Forums and CoP: The significance of Teacher Learning Forums and Communities of Practice (CoP) was discussed, emphasising peer support, collaboration, and both face-to-face and online meetings for ongoing professional development.

Targeted CPD for ESTs: A need for ongoing CPD for ESTs was emphasised, addressing specific gaps in training, such as subject-specific training to support classroom instruction.

Breakout Sessions

Participants joined subject-specific breakout groups focusing on strategies for teaching English, Mathematics, and Science. In these groups, they explored pedagogical content knowledge (PCK) and delivered microteaching presentations. Each presentation reinforced the culture of reflective practice.

Panel Discussions

Panel discussions featured department officials, headteachers, and subject experts. These sessions addressed teacher concerns and offered practical strategies for overcoming classroom implementation challenges. Participants appreciated the candid discussions and actionable takeaways shared by panellists.

Conclusion

The forums concluded with the following recommendations:

- a) Strengthen subject-specific CoPs through regular meetings and digital collaboration spaces.
- b) Develop targeted CPD modules based on classroom observation data and teacher input.
- c) Promote structured mentorship across districts to ensure on-the-job coaching.
- d) Leverage technology to expand CPD's access in remote areas.
- e) Implement a robust monitoring and evaluation framework for continuous improvement and accountability.



Figure 8: Teacher Professional Development forum Nowshera



Figure 9: Teacher Professional Development Forum Orakzai

Section V: Effectiveness of the Intervention

This section is organised to provide a thorough overview of the intervention's effectiveness. It starts with a high-level summary of the key findings, followed by an examination of trends in COT scores by headteachers (internal observers) to track teacher development over time. Subsequently, it presents the findings from external (independent) observers comparing classroom practices before and after the intervention and concludes with thematic insights drawn from teacher FGDs.

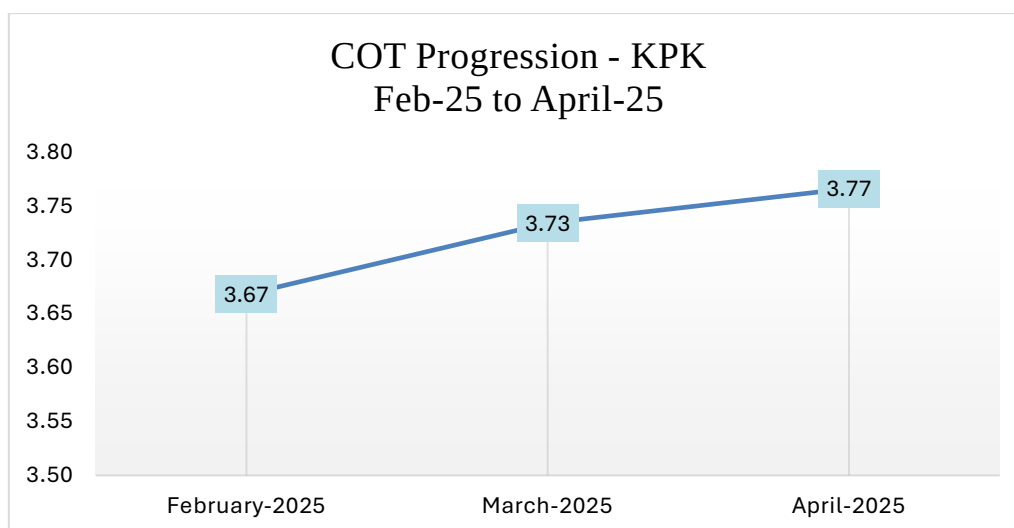
Summary of Findings

- Classroom observation tool (COT) in KPK showed a clear upward trend, with average internal observer **scores rising from 3.67 in February 2025 to 3.77 in April 2025**, reflecting steady improvement in teaching practices across the observed schools.
- External observer data across seven districts demonstrated a **significant increase in overall average COT scores, moving from 3.30 pre-intervention to 3.68 post-intervention**.
- **Statistically significant improvements were observed in all three subjects** and the set of 11 general practices, with the largest increase seen in Science (up by 0.631 points), followed by English (0.471), Maths (0.322), and general practices (0.296).
- At the district level, all except Kohat exhibited statistically significant improvements in COT scores across domains.
- Over 95% of teachers found the training content relevant to their needs, with 88% reporting lesson plans as practical and 87% finding training videos effective in demonstrating best practices. Additionally, 80% considered training materials accessible and easy to use independently.
- Nearly 90% of teachers rated assessments as well-designed and confidence-boosting, while more than 90% valued the feedback for identifying improvement areas. About 88% agreed assessments fairly measured their learning during the training.
- The self-paced training format was widely appreciated, with 85% finding it allowed comfortable learning, 86% rating instructions as clear, and 90% valuing the flexibility to revisit materials. Overall, 89% said the training met expectations and 86% would recommend it to peers.

Trend Analysis of COT scores by Internal Observers

Headteachers conducted classroom observations in their schools using classroom observation tool. The data from this record shows a positive trajectory in average scores by month, indicating improvement in teaching practices.

- Average COT score was 3.67 in February 2025, which gradually increased to 3.77 by April 2025.

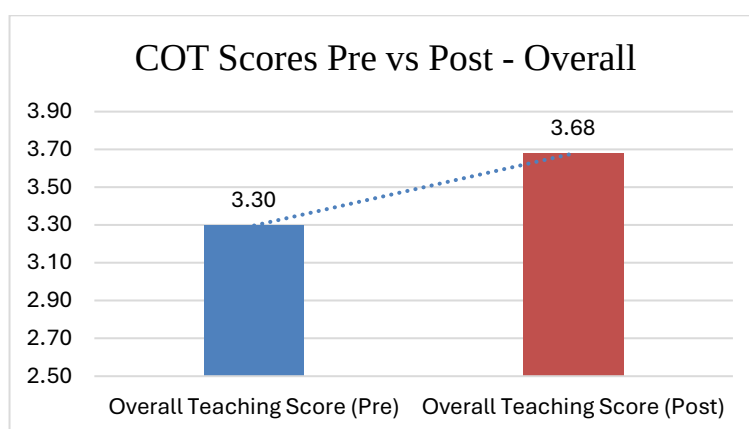


Pre vs Post Analysis of COT Scores by External Observers

Pre-Post Average COT Scores – Overall

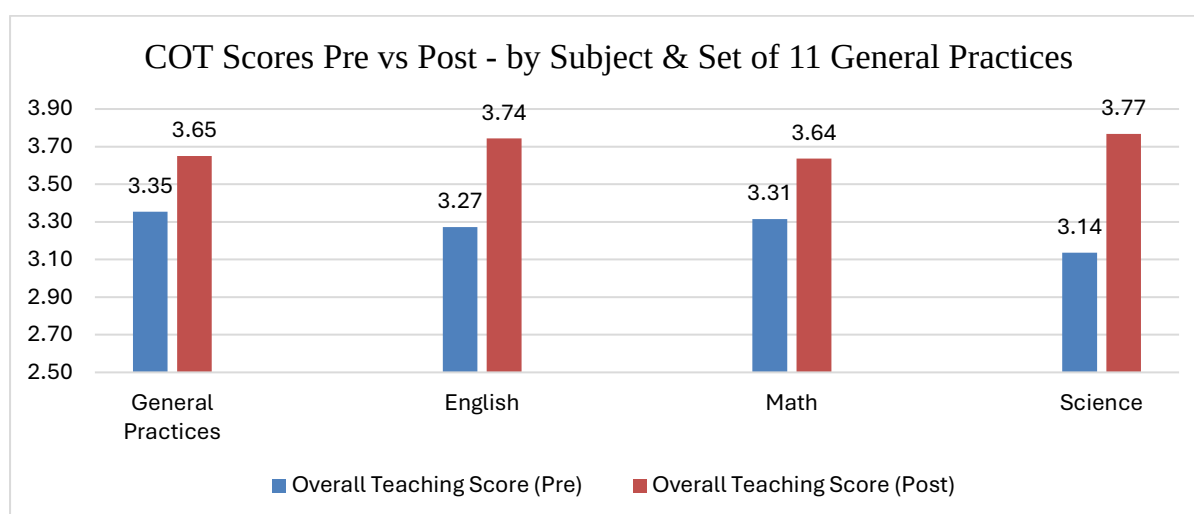
Overall, a substantial increase in the average COT scores is observed (combining all covered districts in KPK).

- The average COT score, of all districts combined, averaging scores on general practices and subject specific indicators, increased from 3.30 at pre intervention period to 3.68 during post.



- The average COT scores, all districts combined, increased
 - From 3.35 to 3.65 for 11 general practices

- o From 3.27 to 3.74 for English, from 3.31 to 3.64 for Math, and from 3.14 to 3.77 for Science



Overall, COT scores have improved for all three subjects and for the set of 11 general practices.

The differences are statistically significant for 11 practices, English, Math, and Science.

	(1)	(2)	(3)	(4)
VARIABLES	cot_overall_11	cot_eng	cot_math	cot_sci
time (post vs pre)	0.296*** (0.0488)	0.471*** (0.134)	0.322*** (0.114)	0.631*** (0.119)
Constant	3.354*** (0.0239)	3.273*** (0.0661)	3.315*** (0.0559)	3.136*** (0.0584)
Observations	915	305	305	305
R-squared	0.039	0.039	0.026	0.084

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Interpretation:

On average,

- The COT score for 11 general practices increased by 0.296 points from pre to post
- Scores on English specific indicators increased by 0.471 points from pre to post
- Scores on Math specific indicators increased by 0.322 points from pre to post
- Scores on Science specific indicators increased by 0.631 points from pre to post

Pre-Post Average COT Scores – by Practice & Subject

The table below presents COT scores by practice and subject. The last column shows the difference in pre and post COT scores.

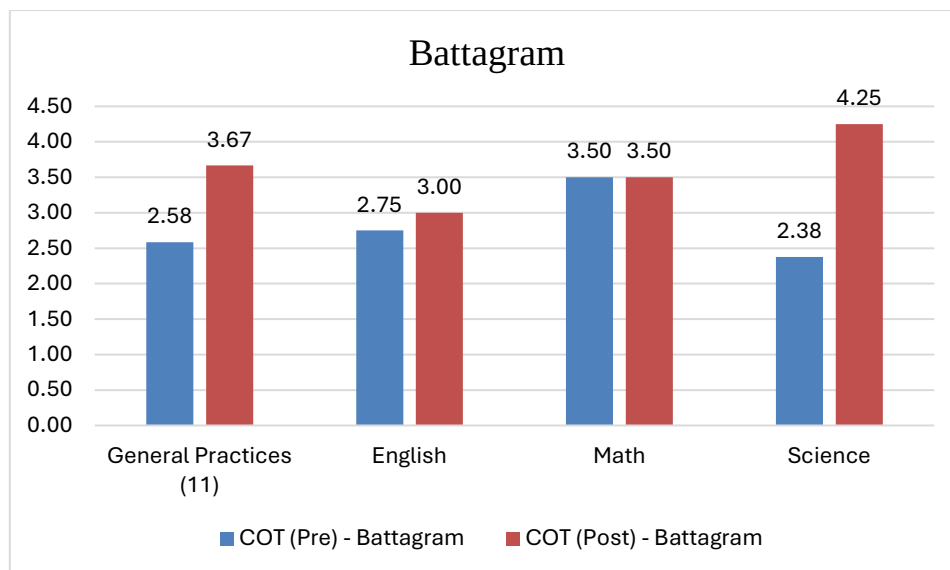
Category	Indicator / Practice	Overall Teaching Score (Pre)	Overall Teaching Score (Post)	Difference (Post - Pre)
General Practices (11)	1. Objectives articulation	3.236	3.805	+ 0.569
	2. Clear content explanation	3.440	3.732	+ 0.292
	3. Real-life connections	3.263	3.723	+ 0.459
	4. Teacher modeling	3.317	3.627	+ 0.311
	5. Understanding assessment	3.337	3.573	+ 0.236
	6. Monitoring student progress	3.525	3.727	+ 0.202
	7. Teaching adjustments	3.466	3.559	+ 0.093
	8. Clarifying feedback	3.213	3.623	+ 0.410
	9. Thinking questions	3.315	3.705	+ 0.389
	10. Thinking tasks	3.354	3.414	+ 0.060
	11. Responding to needs	3.424	3.659	+ 0.235
	AVERAGE	3.354	3.650	+ 0.296
English	1. Innovative English strategies	3.190	4.000	+ 0.810
	2. Critical and creative responses	3.355	3.486	+ 0.132
	AVERAGE	3.273	3.743	+ 0.471
Math	1. Math connections	3.233	3.685	+ 0.452
	2. Problem-solving facilitation	3.397	3.904	+ 0.508
	3. Practice and problem-solving opportunities	3.405	3.712	+ 0.307
	4. Mathematical concept representation	3.224	3.247	+ 0.022
	AVERAGE	3.315	3.637	+ 0.322
Science	1. Science concepts explanation	3.129	4.014	+ 0.884
	2. Scientific method engagement	3.353	3.767	+ 0.414
	3. Demonstration of procedures incorporating safety	3.017	3.603	+ 0.585
	4. Science-technology-society connections	3.043	3.685	+ 0.642
	AVERAGE	3.136	3.767	+ 0.631
OVERALL AVERAGE		3.297	3.678	+ 0.381

Pre-Post Average COT Scores – by Districts

Overall, all districts shown statistically significant improvements in average scores except Kohat where the observed change was not statistically significant.

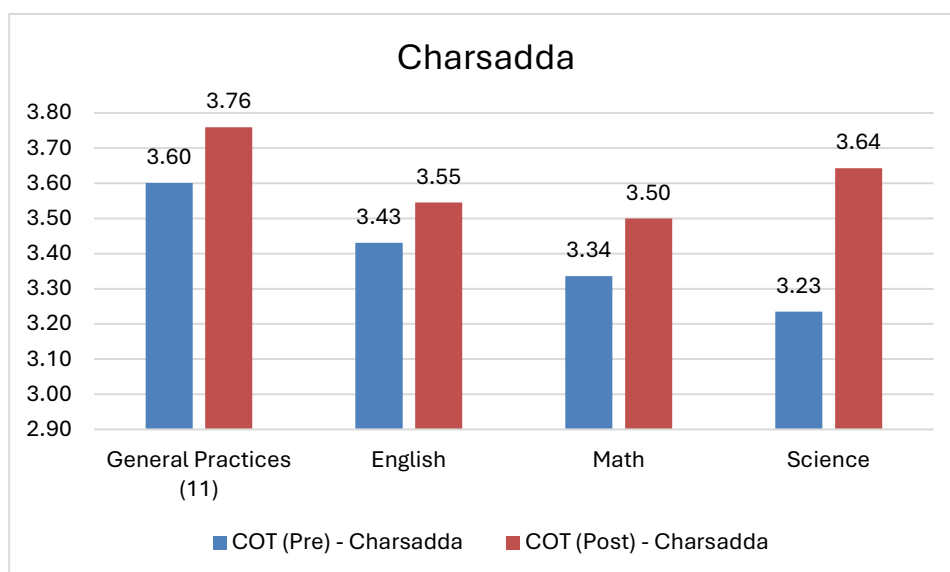
Battagram:

- The average for 11 general practices combined increased from 2.58 to 3.67
- From 2.75 to 3.00 for English
- From 3.50 to 3.50 for Math (no change)
- From 2.38 to 4.25 for Science



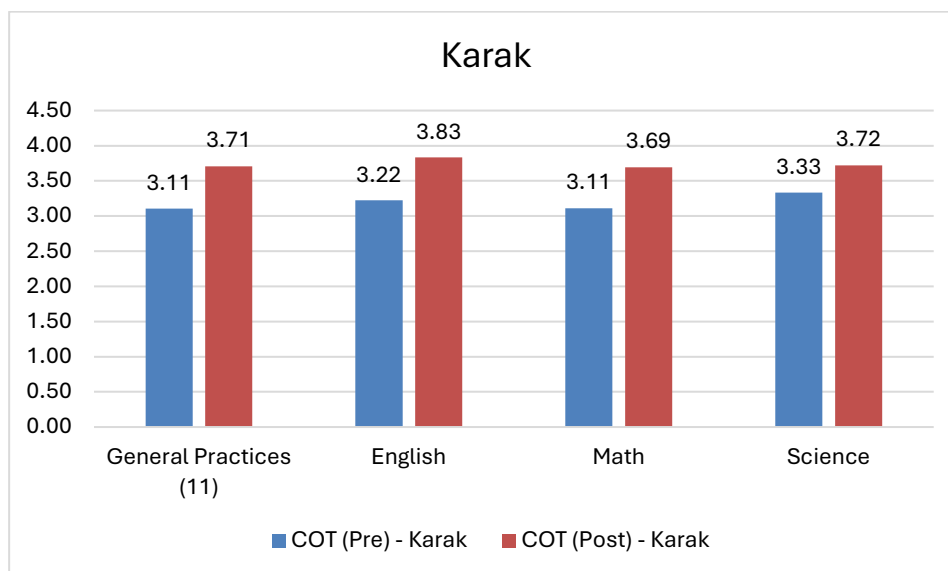
Charsadda:

- The average for 11 general practices combined increased from 3.60 to 3.76
- From 3.43 to 3.55 for English
- From 3.34 to 3.50 for Math
- From 3.23 to 3.64 for Science



Karak:

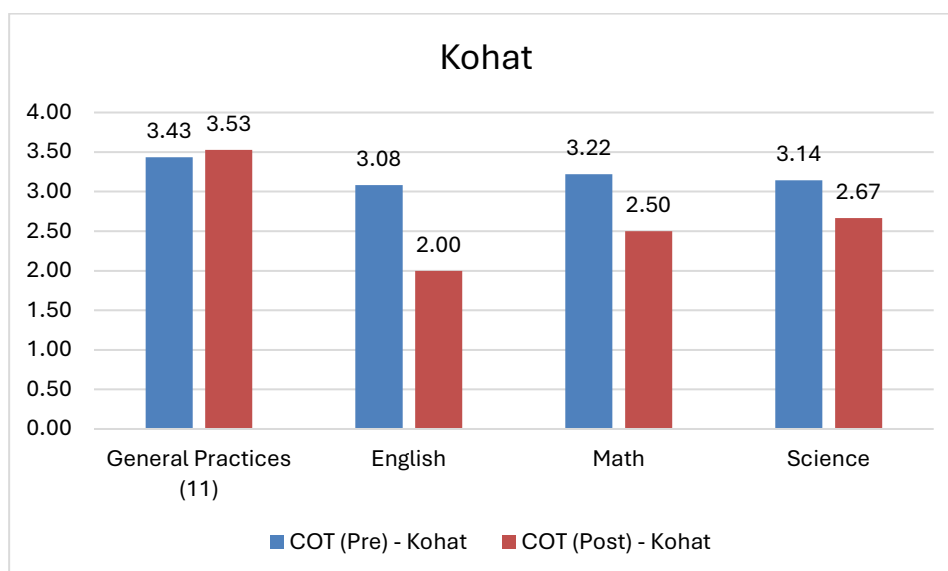
- The average for 11 general practices combined increased from 3.11 to 3.71
- From 3.22 to 3.83 for English
- From 3.11 to 3.69 for Math
- From 3.33 to 3.72 for Science



Kohat:

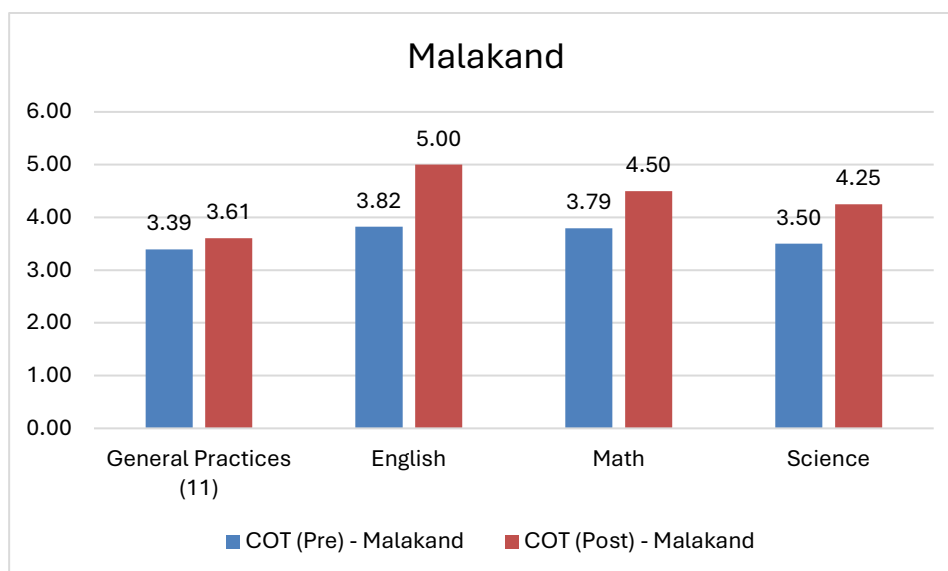
- the average score on general practices increased from 3.43 to 3.53 (statistically insignificant)
- on subject specific indicators, it dropped (again statistically not significant).

Overall, statistically, there is no difference in average scores for Kohat over time.



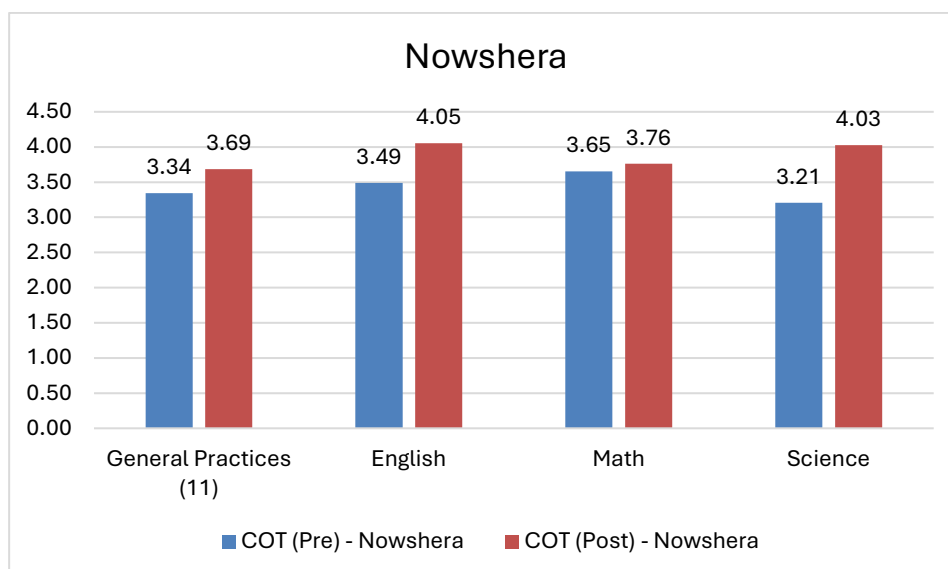
Malakand:

- The average for 11 general practices combined increased from 3.39 to 3.61
- From 3.82 to 5.00 for English
- From 3.79 to 4.50 for Math
- From 3.50 to 4.25 for Science



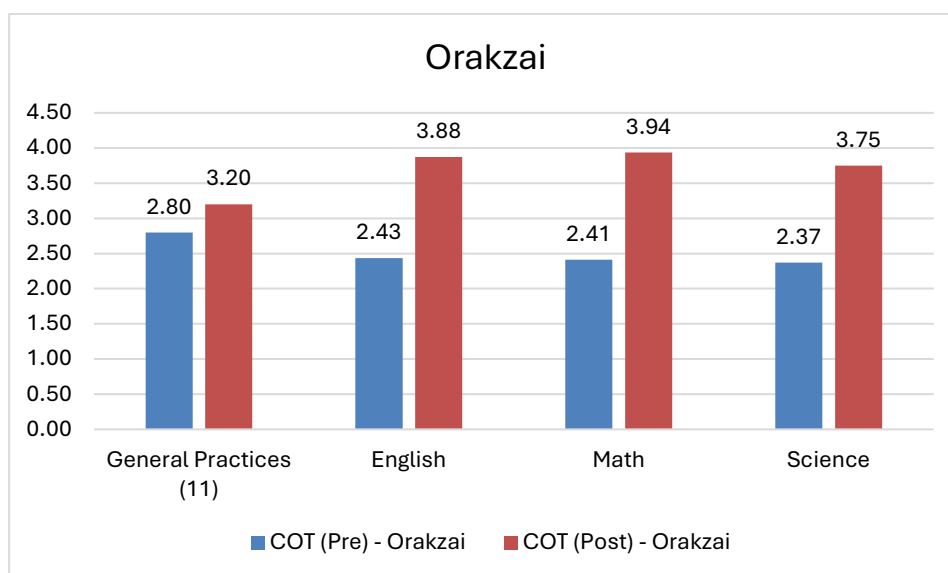
Nowshera:

- The average for 11 general practices combined increased from 3.34 to 3.69
- From 3.49 to 4.05 for English
- From 3.65 to 3.76 for Math
- From 3.21 to 4.03 for Science



Orakzai:

- The average for 11 general practices combined increased from 2.80 to 3.20
- From 2.43 to 3.88 for English
- From 2.41 to 3.94 for Math
- From 2.37 to 3.75 for Science



A case study has been added as Annexure-III

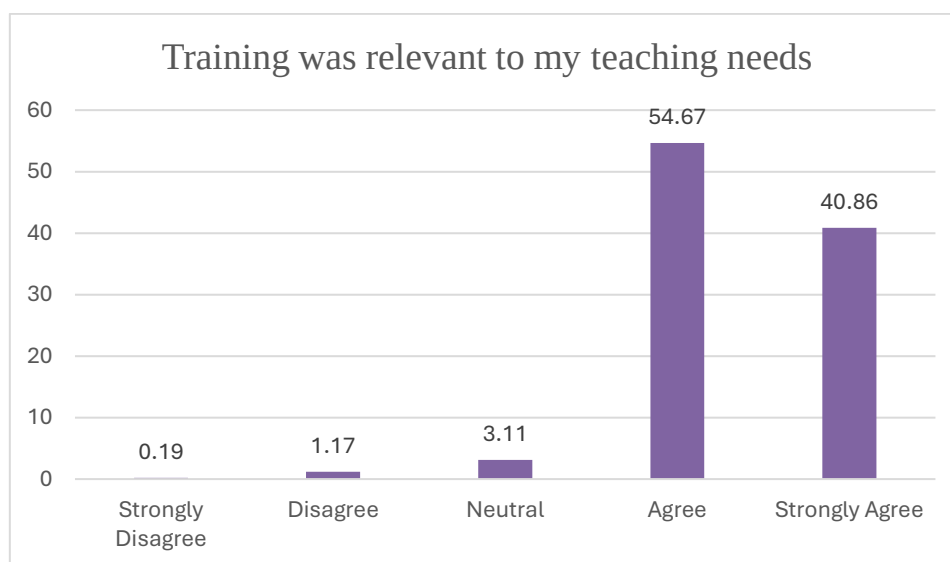
Analysis of Teachers Feedback on Training Content, Delivery, and Impact

The teachers were provided access to an online form to provide their feedback on different aspects of training. For analysis, the information is categorized and presented into following:

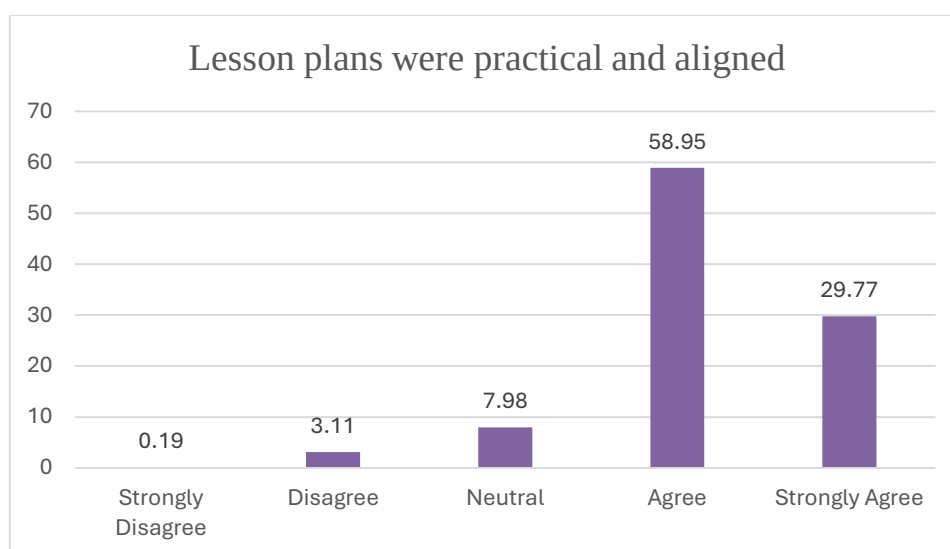
- Training Content
- End of Module Assessment
- Delivery & Facilitation
- Impact of Training
- Overall Feedback

Feedback on Training Content

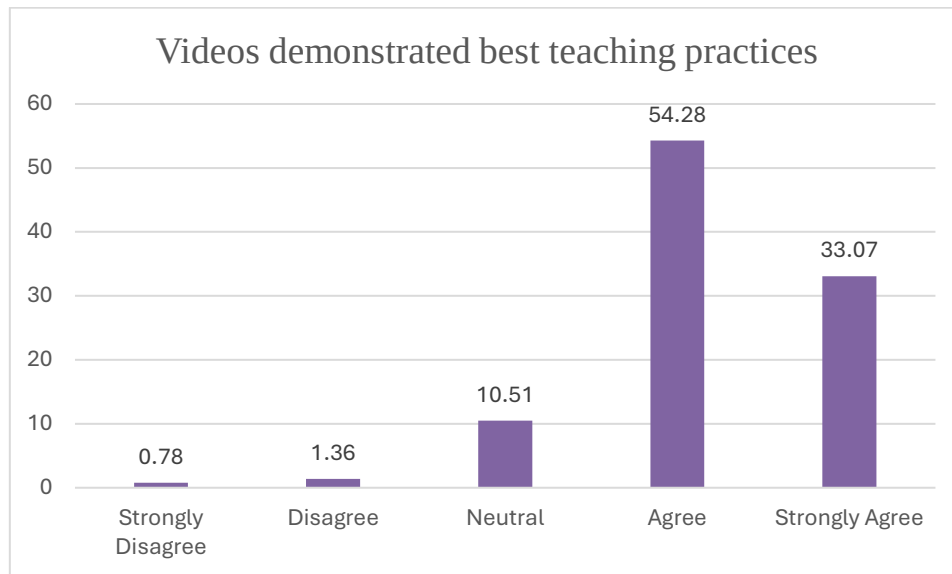
More than 95 percent teachers found the training to be relevant to their needs



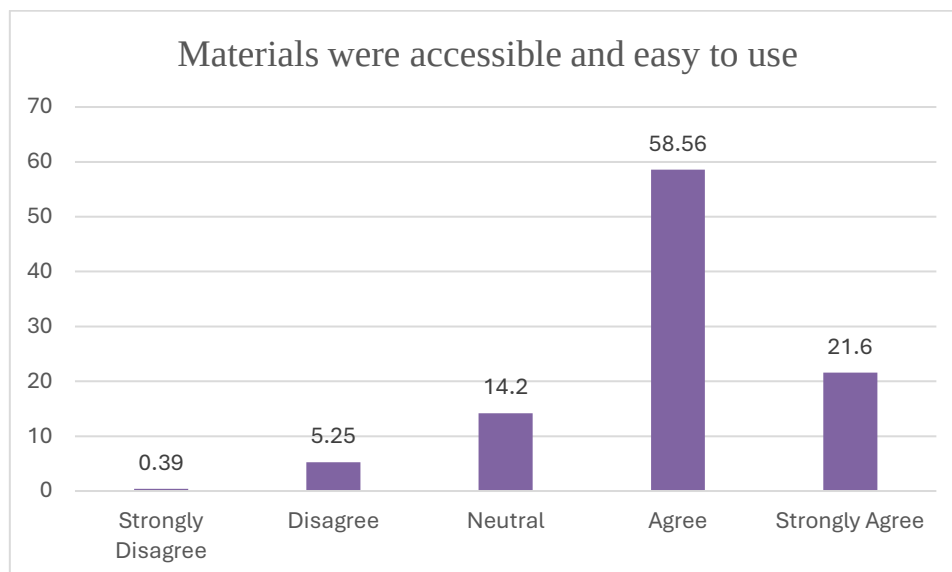
88 percent teachers reported that the lesson plans were practical, easy to implement, and aligned with relevant SLOs



87 percent teachers reported the videos used in trainings to have demonstrated best teaching practices effectively

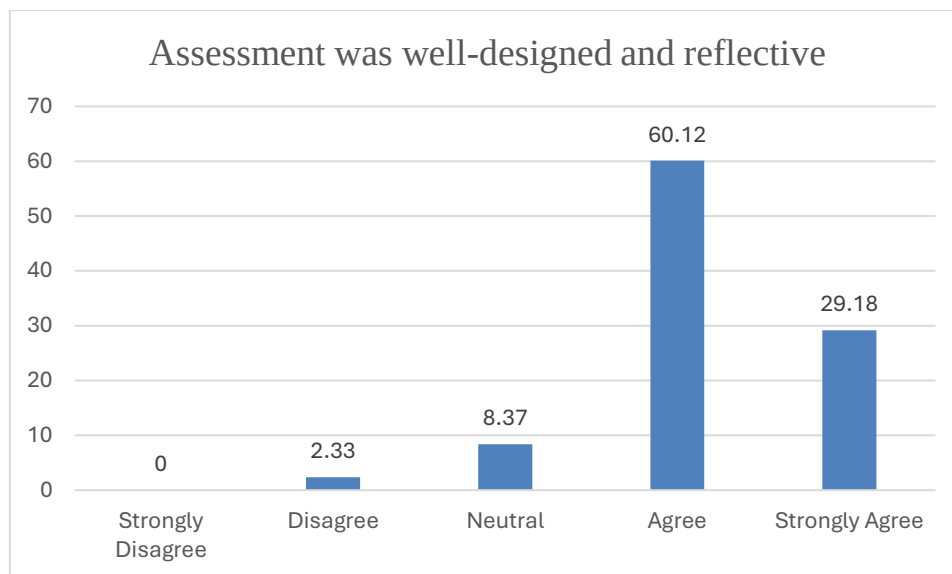


80 percent teachers found the training materials to be accessible and easy to use independently

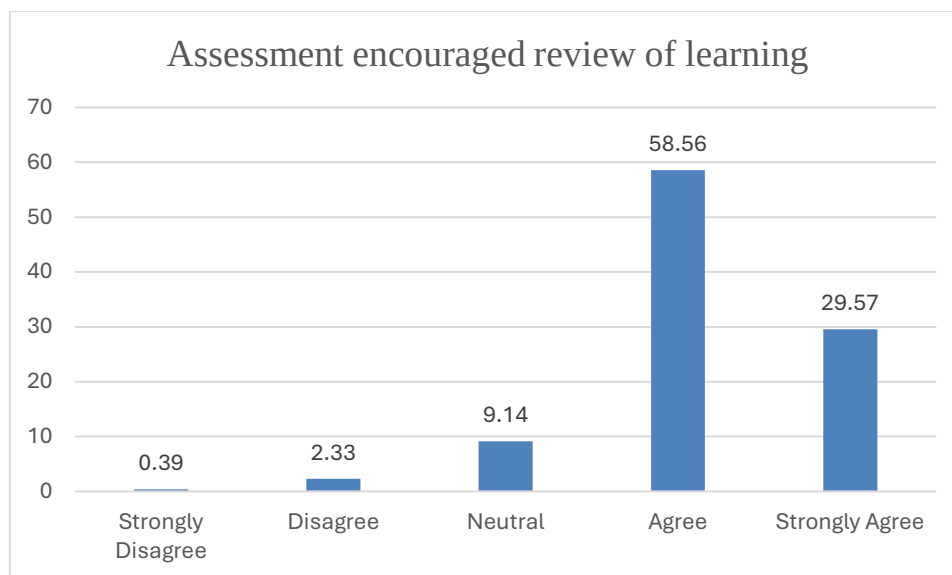


Feedback on Assessment

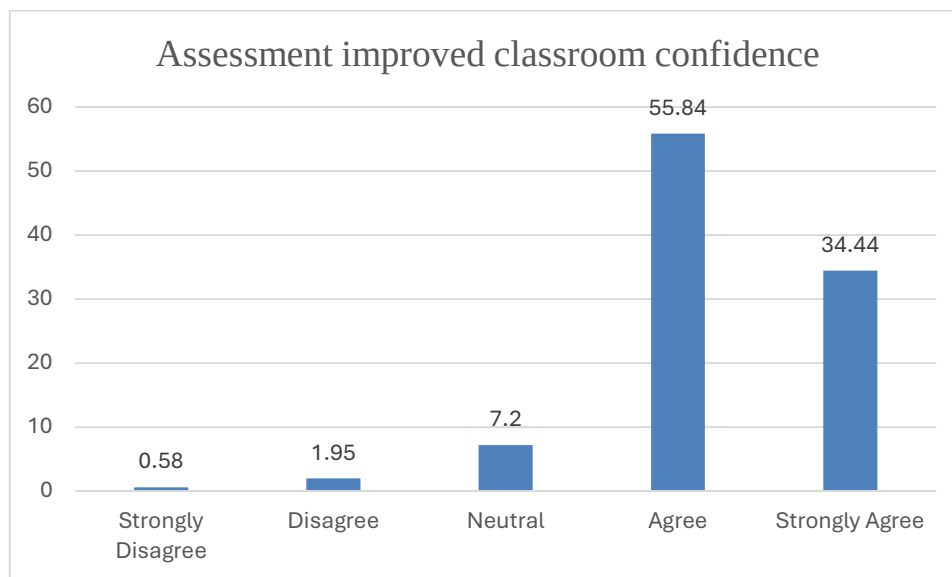
Almost 90 percent teachers reported that the assessments were well-designed and reflected the key concepts covered in the training



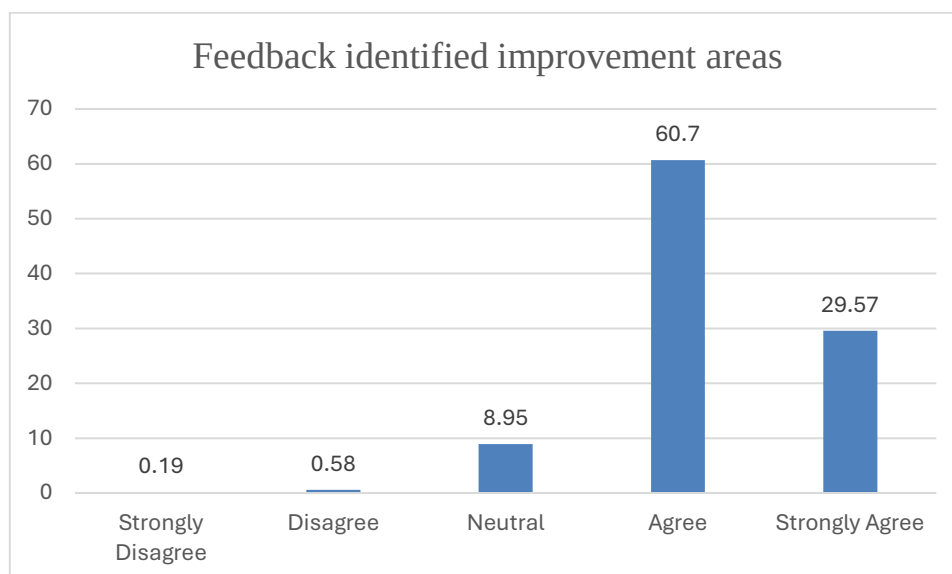
88 percent teachers agreed that the assessments encouraged them to review and consolidate what they learnt from the videos and lesson plans



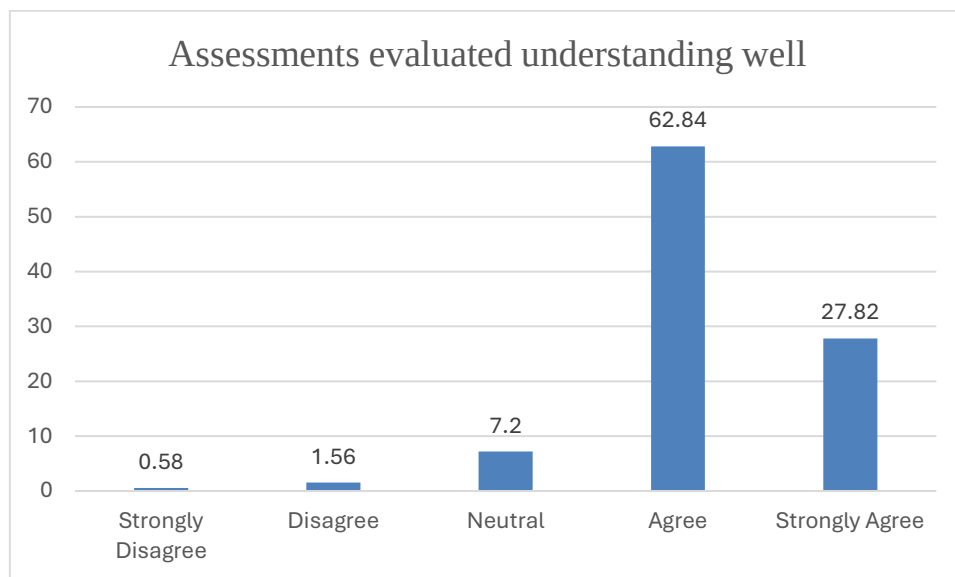
90 percent teachers reported that completing the assessment improved their confidence in applying the knowledge and strategies in their classrooms



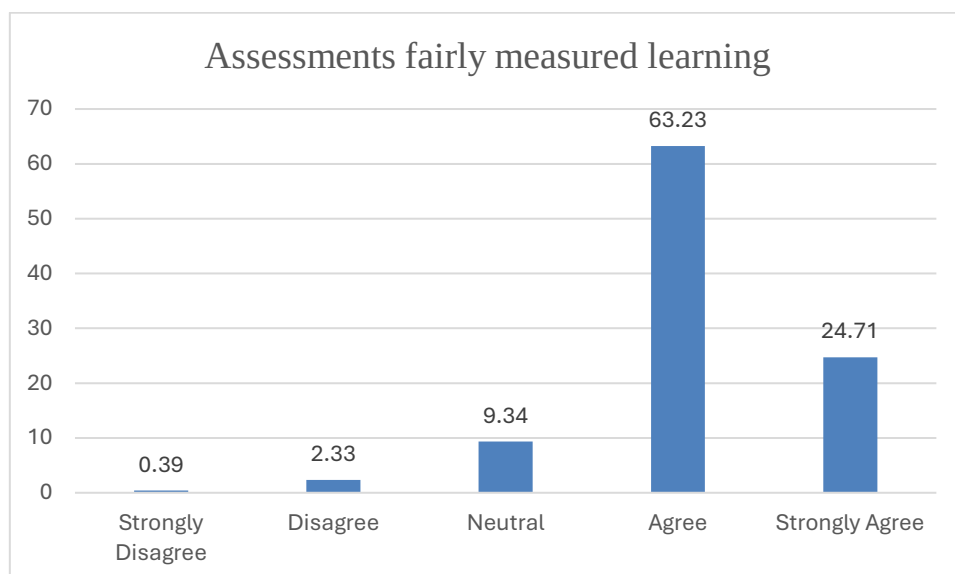
More than 90 percent teachers reported that the feedback provided after the assessment was useful for identifying areas of improvement



More than 90 percent teachers reported that the end-of-module assessments helped them evaluate their understanding of the training content

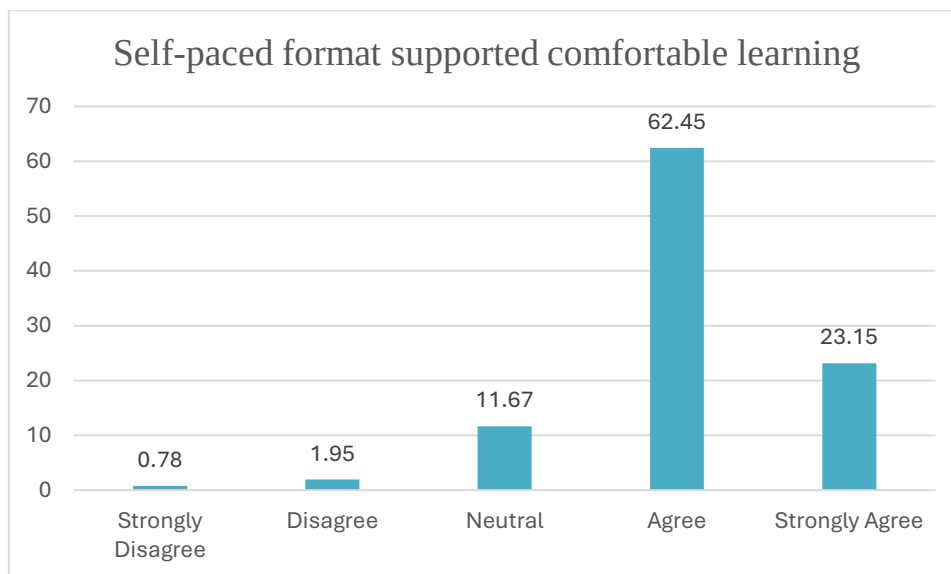


About 88 percent teachers found the assessments to be a fair measure of what they learned during the training

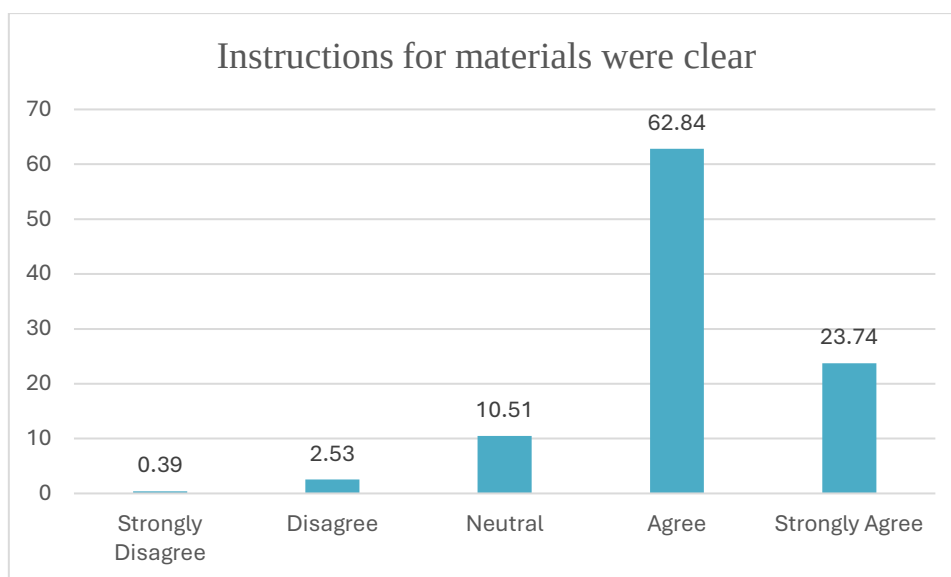


Feedback on Delivery & Facilitation

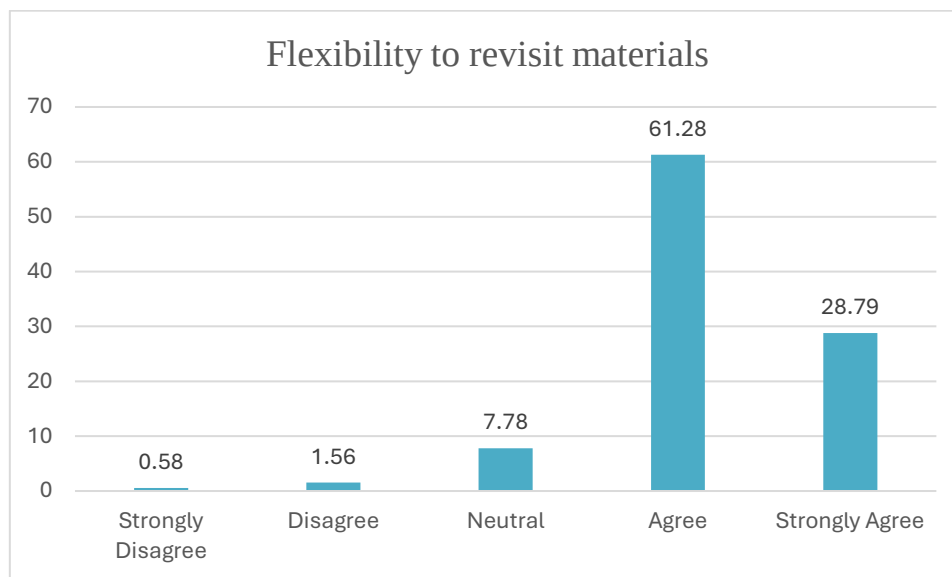
85 percent teachers agreed that the self-paced format allowed them to learn at a comfortable pace



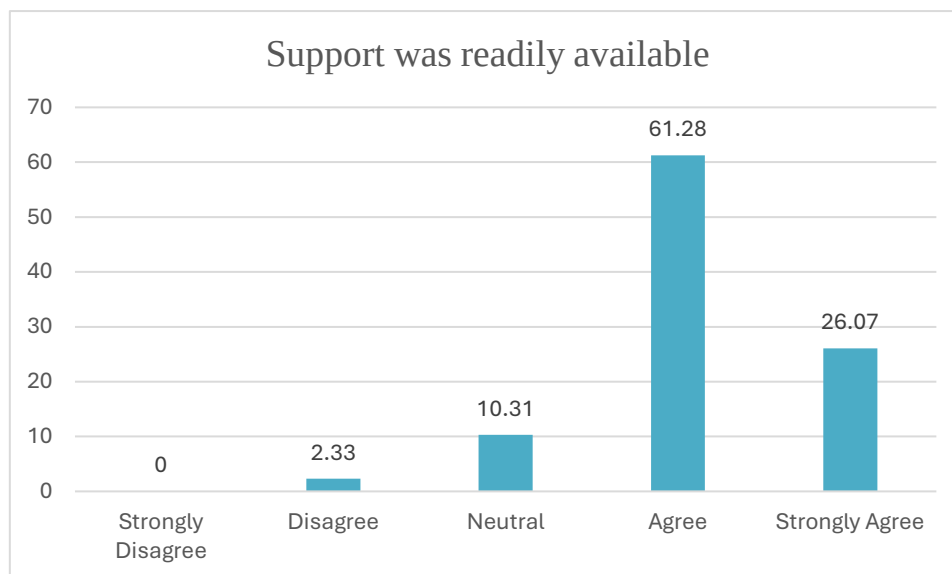
About 86 percent teachers agreed that the instructions for accessing and using the materials were clear



90 percent teachers agreed that the training provided flexibility to revisit lesson plans and videos when needed

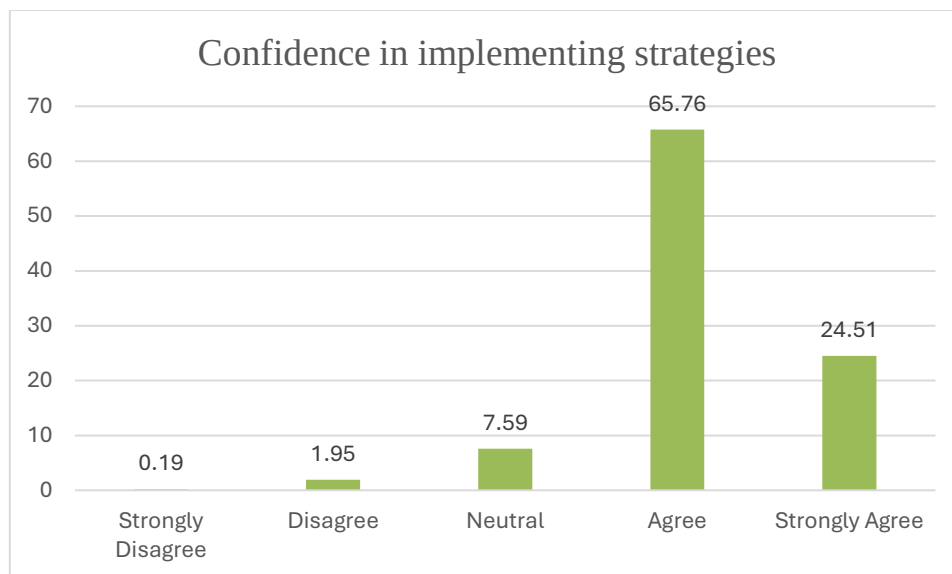


87 percent teachers agreed that the support was readily available for any queries or issues

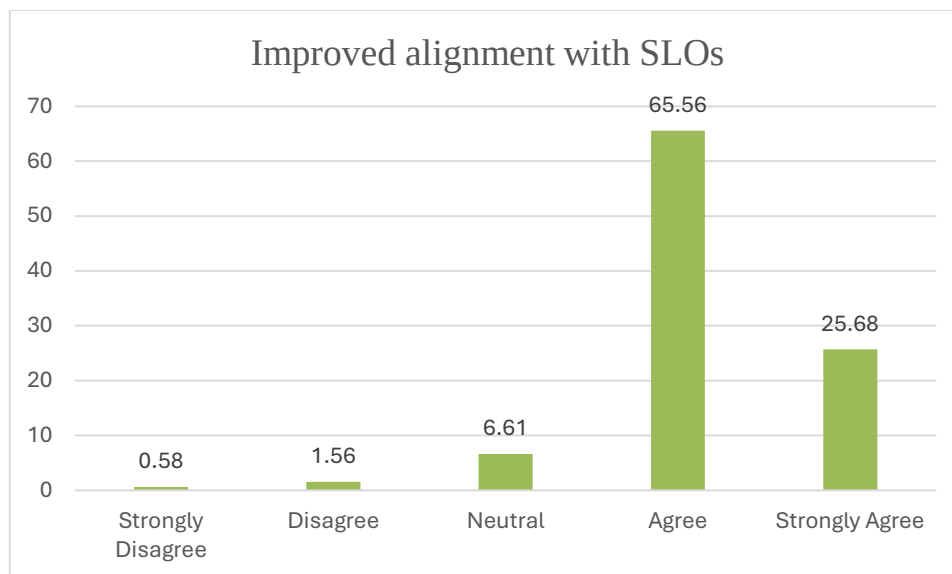


Self-Reported Impact of Training

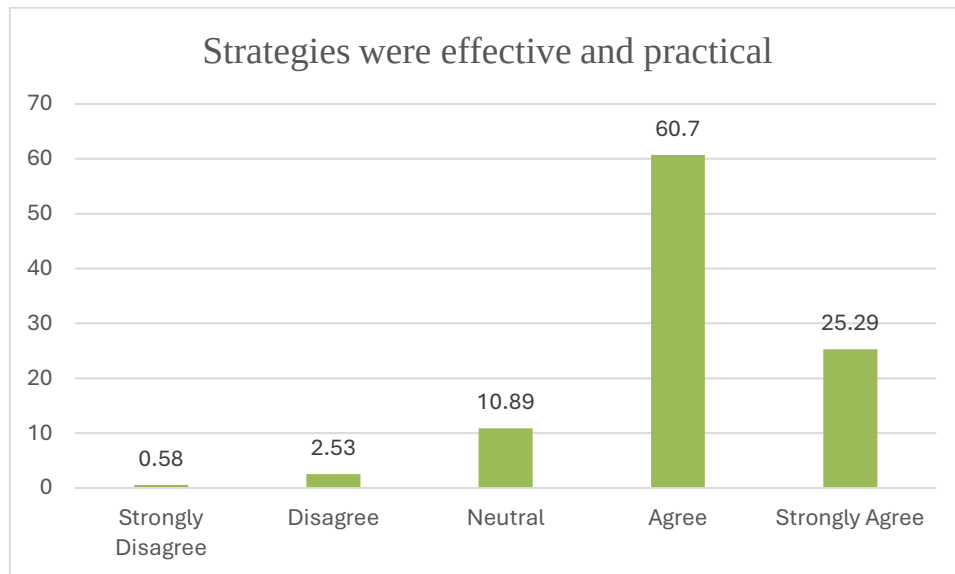
More than 90 percent teachers reported that they felt more confident in implementing the lesson plans and strategies discussed after the training



About 91 percent teachers reported that the training improved their ability to align classroom activities with SLOs

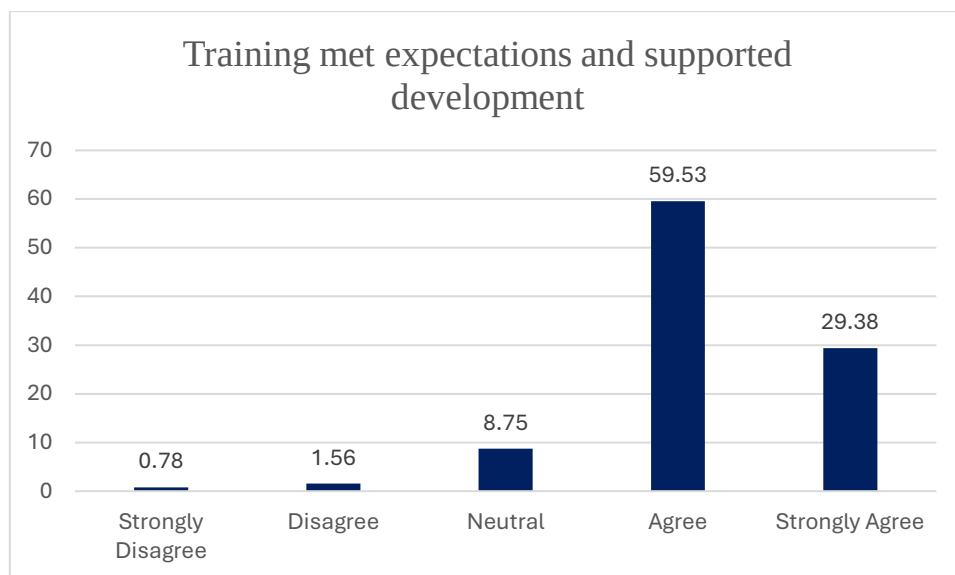


86 percent teachers agreed that the strategies introduced in training were effective and practical for their classroom needs

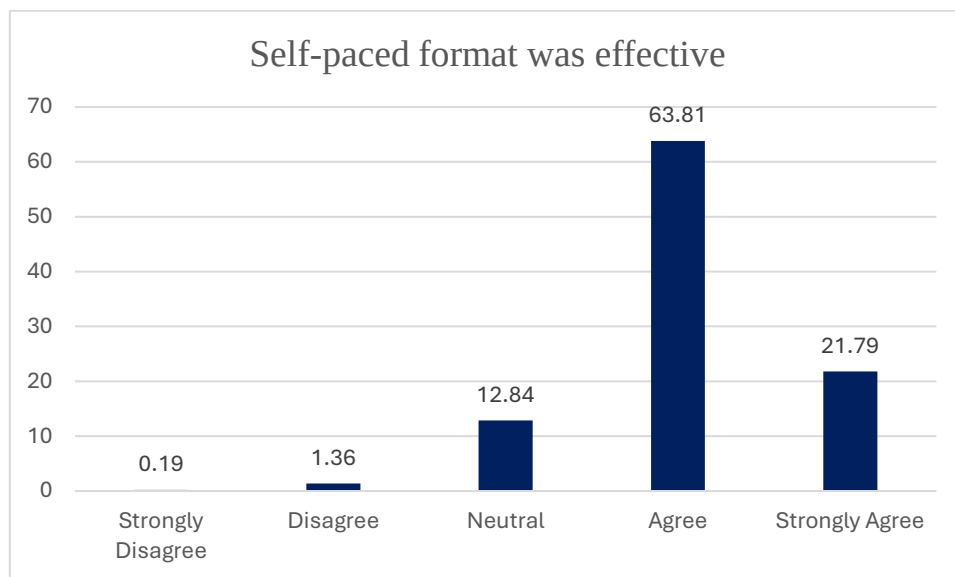


Overall Feedback on Intervention

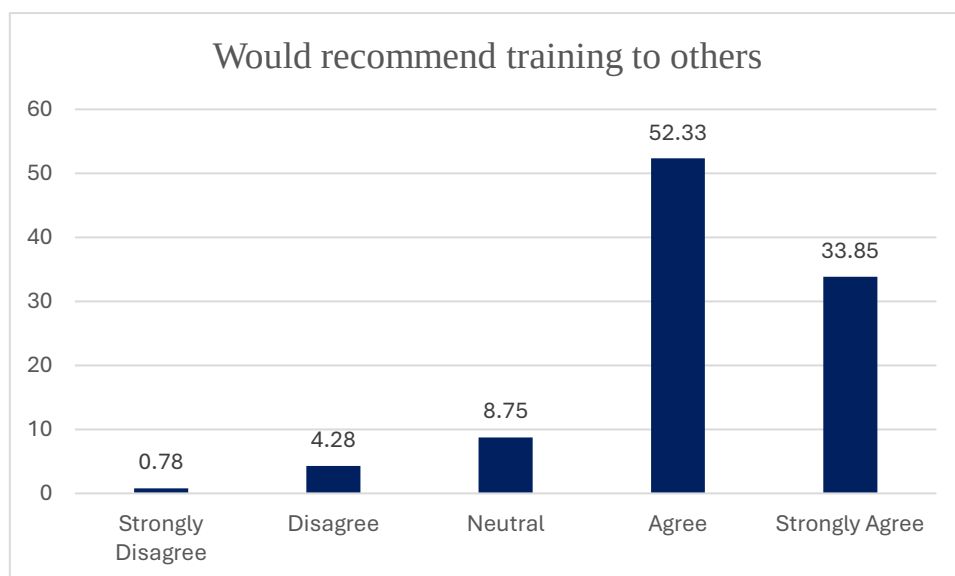
Almost 89 percent teachers reported that the training met their expectations and positively impacted professional development



More than 85 percent teachers reported that the self-paced format was convenient and effective for learning



About 86 percent teachers reported that they would recommend this training to other teachers



Section VI: Challenges and Areas for Improvement

While the CPD-ESTs initiative demonstrated positive outcomes, several challenges were identified during the pilot phase that will need to be addressed during the scaling-up process to ensure long-term effectiveness and sustainability:

Technology Accessibility:

Some teachers, particularly those in remote or under-resourced districts, faced challenges in accessing the LMS and digital training modules due to unreliable internet connectivity, lack of electricity, or limited access to digital devices. These infrastructure barriers created an uneven learning experience across districts. Future efforts should focus on expanding access to offline versions of training modules, exploring mobile-friendly or SMS-based platforms, and providing schools with basic digital kits to support equitable CPD access.

Time Constraints:

Many teachers expressed concerns about the time required to complete the CPD modules, especially during the academic year when workload peaks. Balancing classroom teaching, administrative responsibilities, and CPD requirements was cited as a major challenge. To address this, the programme offered modular learning pathways with flexible completion windows, integrate CPD into school schedules, and reduce overlap with peak teaching cycles. Additionally, institutional support from headteachers and local education offices will be critical in allowing time for meaningful professional learning.

Sustaining Engagement:

While most teachers were actively engaged during the intervention, there were concerns about maintaining long-term participation and enthusiasm for CPD activities. Teachers highlighted the risk of burnout or disengagement over time if CPD becomes monotonous, overly demanding, or disconnected from real classroom needs. Sustaining engagement will require ongoing support structures, such as mentorship, peer recognition, incentives (certificates, progression pathways), and periodic refreshers or advanced modules. Embedding CPD into teacher appraisal and promotion criteria may also enhance its perceived value.



Learning Management: Access and Support

The implementation of LMS significantly strengthened the digital delivery of CPD for ESTs. Teachers generally found the interface user-friendly, enabling independent course completion and on-demand support from subject experts. The system's intuitive design, instant feedback options, and flexible access allowed teachers to take ownership of their professional development.

However, several challenges were encountered:

- **Connectivity Issues:** Districts such as Orakzai faced persistent internet access issues, hindering consistent engagement with digital modules.
- **Digital Literacy Variability:** While many teachers adapted well, others struggled with basic navigation, creating uneven access and reliance on technical support.
- **Time Constraints:** Teachers cited difficulty in balancing online CPD with daily workloads, limiting their ability to engage deeply with content.

Teacher Course Completion on LMS

Completion data across subjects indicates varying levels of engagement:

- English: 144 completed 70–100%, 794 teachers completed 30–49% of the course, and 44 teachers completed 50–69% of the course.
- Maths: 137 completed 70–100%, 8 completed 50–69%, and 356 completed 30–49%.
- Science: 104 completed 70–100%, 13 completed 50–69%, and 272 completed 30–49%.

The data suggests strong initial engagement but relatively low full completion rates across all subjects. Factors such as workload, connectivity, and motivation levels likely contributed. Increasing course modularity, integrating course progress with observation feedback, and recognising course completion through incentives or certificates may help to improve these figures.



Section VII: Conclusion

The CPD-EST initiative in Khyber Pakhtunkhwa represents a critical step forward in institutionalising structured, context-specific, and data-driven professional development for Elementary School Teachers (ESTs). Designed around four core components - Personal Learning Hours, Teacher Learning Forums, Classroom Observations, and Professional Learning Communities (PLCs) - the programme has demonstrated measurable impact in improving teaching quality, boosting teacher confidence, and fostering a culture of collaboration across participating districts.

Quantitative results affirm the effectiveness of the intervention: internal observation scores by headteachers rose from 3.67 to 3.77 between February and April 2025, while independent external observations reflected a substantial increase from 3.30 to 3.68 across seven districts. Subject-specific improvements were particularly strong in Science (+0.631), followed by English (+0.471) and Math (+0.322). These gains underscore the relevance and clarity of the digital learning content, assessment structure, and observation feedback mechanism employed under CPD-EST. Importantly, over 95% of participating teachers found the training content aligned with their professional needs, and more than 85% expressed satisfaction with the self-paced format, instructional clarity, and assessment feedback.

Qualitative insights from focus group discussions and feedback surveys revealed a significant shift in teacher motivation, classroom engagement, and peer learning behaviour. Teachers reported increased ability to align instruction with SLOs, use student-centred strategies, and reflect on practice more systematically. The digital LMS platform, despite access and connectivity challenges in some rural districts, was broadly accepted and appreciated as a flexible and scalable mode of learning. Professional Development Forums and CoPs further strengthened peer networks and encouraged local ownership of CPD activities.

However, the scale-up like pilot also revealed persistent challenges that must be addressed to ensure long-term impact and scalability. Key concerns included uneven digital infrastructure, time constraints due to existing teaching loads, variability in module completion rates, and the absence of a formalised system for recognising and rewarding teacher participation in CPD. Additionally, the lack of vertical integration into secondary education and the absence of a provincial certification and licensing regime indicate structural gaps that require urgent attention.



Going forward, CPD-EST must be embedded as a permanent, policy-backed feature of Khyber Pakhtunkhwa's education system. This requires coordinated leadership from the DPD and E&SED with continued support from technical assistance partners and institutional stakeholders. The CPD-EST experience in KP has demonstrated that when professional development is designed with clear intent, delivered flexibly, and reinforced through peer collaboration and data-driven tools, it can transform classrooms, elevate teacher professionalism, and significantly enhance student learning outcomes across the province.

Section VIII: Recommendations

Informed by the results and analysis, the following recommendations have been presented to ensure the intervention is scaled-up to benefit all ESTs across KP. The recommendations are clustered them into four thematic areas: **Institutionalisation & Scale-up, Technology & Digital Systems, Teacher Motivation & Career Growth, and Governance & Coordination.**

Institutionalisation & Scale-up

- 1. Institutionalise CPD-EST Province-wide (E&SED & DPD) by March 2026**
 - Expand CPD-EST to all districts through a phased plan.
 - Anchor it in policy as the standard in-service professional development model for ESTs.
 - TA teams to support implementation planning, rollout, and monitoring.
- 2. Pilot CPD for Secondary School Teachers (DPD) by March 2026**
 - Launch CPD-SST in selected districts targeting English, Science, and Mathematics teachers.
 - Develop blended modules on advanced pedagogy and gender-responsive strategies.
 - TA teams to support curriculum design, platform setup, and facilitator training.
- 3. Formalise Professional Learning Communities (PLCs) and Communities of Practice (CoPs) by December 2025 (DPD and district offices)**
 - Create annual calendars and budget lines for PLC and CoP meetings.
 - Use digital platforms (e.g., WhatsApp, LMS forums) to extend reach.
 - Moderated by trained educators with TA support for design and facilitation.

Technology & Digital Systems

- 4. Strengthen Digital Access in Rural Areas (DPD) by December 2025**
 - Distribute pre-loaded tablets and enable offline LMS access.
 - Develop low-bandwidth solutions (SMS, audio).
 - TA and donor agencies to support procurement, adaptation, and logistics.
- 5. Develop COT-LMS Integrated Dashboard (DPD & EMIS Cell) by June 2026**
 - Build a real-time dashboard linking classroom observation and LMS data.
 - Visualise teacher progress and instructional trends at school, tehsil, and district levels.
 - TA-backed developers to support design and implementation.



Teacher Motivation & Career Growth

6. Link CPD to Recognition & Promotion (E&SED) by March 2026

- Award digital certificates, CPD credit points, and eligibility for promotions or PLC leadership roles.
- Align recognition with HR systems.
- TA teams to draft frameworks and integration plans.

7. Establish Certification & Licensing Framework (DPD) by December 2026

- Develop a licensing system linked to CPD credits and competency assessments.
- Align with national/international teaching standards.
- TA accreditation experts to support framework design and implementation.

Governance & Coordination

8. Establish Provincial CPD Task Force (E&SED) by September 2025

- Form a task force including DPD officials, school leaders, subject experts, TA reps, and district focal persons.
- Oversee planning, implementation, and monitoring of CPD initiatives.
- TA governance teams to assist in formation and operations.

Annexures

Annexure I: Notification by the Department



Directorate of Professional Development, Khyber Pakhtunkhwa
Charsadda Road Peshawar.

Phone & Fax No. 091-9224783

Email: directordpdkp@gmail.com

No. 8144 /B-TAG-ISAPs/CPD Elem/2024-25

Dated Peshawar the January 1, 2025.

The Director
Elementary & Secondary Education Khyber Pakhtunkhwa,
Peshawar

**Subject: TRAINING OF SCHOOL HEADS ON ROLLING OUT CPD ELEMENTARY
(SECOND PHASE) IN SELECTED SCHOOLS OF CHARSADDA, KARAK,
KOHAT, MALAKAND, NOWSHERA, AND ORAKZAI.**

Memo:

I am directed to refer to the letter of this office bearing even number and date on the subject noted above and continuation of this office letter **No. 7057/B-TAG-ISAPs/CPD Elem/2024 Dated Peshawar the December 5th, 2024** and to state the piloting of “CPD Elementary in selected districts of Khyber Pakhtunkhwa” is one of the activities of the approved work-plan of Bridging Technical Assistance to Govt (B-TAG) Peshawar. Being integral part of the pilot, the School Heads will provide mentoring and on-job support to the teachers of their schools, for which master trainers from the pilot districts were trained in the last week of October 2024. The first phase of training of school heads from selected districts was carried out in first week of December 2024.

2. In the second phase of intervention, this Directorate has now planned two days “Training of School Heads” from the newly inducted selected schools as per the attached schedule.

3. You are kindly requested to instruct the DEOs (Male and Female) of the districts **Charsadda, Karak, Kohat, Malakand, Nowshera, and Orakzai** to ensure that the School Heads from the selected schools are informed and released to attend the scheduled training as per the revised plan

4. It is further requested to consider this letter as replacement of the previous communication of the same reference number and date.

Encl: District wise revised plan of training

Additional Director (Acad)

Endst: Even No and Date:

Copy for information to the:

1. Secretary to the Govt. of KP Elementary and Secondary Education Department Peshawar.
2. DEOs (Male and Female) Charsadda, Karak, Kohat, Nowshera, DEO (F) Malakand and DEO (M) Orakzai
3. Additional Director Admn Local Directorate
4. P.S to Director Local Directorate.
5. Project Director B-TAG-ISAPs Peshawar.

Additional Director (Acad)

Annexure II: Subject-Specific Classroom Observation Practices

PART 1: PRE-OBSERVATION				
General Information				
School name		EMIS code		
Teacher name		CNIC		
Name of observer		Observation Date		
Observer designation (circle one)				
About the lesson you observe				
Grade(s)		Number of children in class today		
Subject				
Topic				
Main SLO				
Observation start time		Observation end time		

PART 2: CLASSROOM OBSERVATION (General Practices)						
	Score (5 is high)					
Lesson Facilitation	n/a*	1	2	3	4	5
1. The teacher explicitly articulates the objectives of the lesson and relates classroom activities to the objectives.						
2. The teacher's explanation of content is clear and correct.						
3. The teacher makes connections that relate to students' daily lives or other content knowledge.						
4. The teacher models by enacting, thinking aloud or showing a final product expected of the students.						

Checks for understanding						
5. The teacher uses questions, prompts or other strategies to determine students' level of understanding.						
6. The teacher monitors most students during individual or group work.						
7. The teacher adjusts teaching to the level of the students.						
Feedback						
8. The teacher provides specific comments to help students clarify misunderstandings and understand successes.						
Critical Thinking						
9. The teacher asks thinking questions.						
10. The teacher provides thinking tasks.						
Classroom Culture						
11. The teacher responds to students' needs.						

*NA = Not applicable. Selecting this option means you did not observe the practice in the lesson and it was not required.

Subject Specific Practices (English)				
	Score (1 is low, 3 is medium, 5 is high)			
	n/a*	1	3	5
12. The teacher builds on previously learnt English Language using innovative teaching strategies for richer learning experiences.				
13. The teacher enables the students to respond critically and creatively to the given text type.				

Subject Specific Practices (Science)				
	Score (3 is high)			
	n/a*	1	3	5
12. The teacher explains the fundamental concepts, principles, and interconnections of the life sciences, the physical sciences, the environmental sciences, and earth and space science using scientific terminologies.				
13. The teacher uses strategies to engage students in scientific method of studies enabling students to				



develop solutions to problems through observation, reasoning and investigation.				
14. The teacher demonstrates principles and procedures related to the design and implementation of scientific investigations incorporating safety practices.				
15. The teacher fosters a deep understanding among learners about the intricate connections between science, technology, and society (STS connections) in present-day situations, emphasizing the effects of science and technology on society by cultivating STS connections in current contexts.				

Subject Specific Practices (Math)				
	Score (3 is high)			
	n/a*	1	3	5
12. The teacher creates meaningful linkages between previously acquired mathematical concepts and new learning through different teaching strategies i.e. inquiry- based, Math's Solutions, Discovery approach etc.				
13. The teacher helps students make sense of mathematical problems by enabling them to understand the meaning of a problem and identifying multiple solutions.				
14. The teacher provides sufficient opportunities for practice and problem-solving for key concepts (Content Strands: Number operations, Measurement and Geometry, Algebra and Data Handling) to encourage abstract and quantitative reasoning.				
15. The teacher concludes the mathematical problem by representing the concept through diagrams, two-way tables, graphs, flowcharts, and formulas and applying formative assessment strategies.				

Note: Wherever relevant, testimonials from teachers and trainers, pictures from training sessions, classroom observations, CPD forums, screenshots of digital modules, graphical representations of data (bar charts, pie charts, and workflow diagrams should be added to enhance readability, engagement, and credibility of the report.

CASE STUDY

Teacher Name: Yasmeen Nawaz

School: GGHS Nari Panos, Karak

Yasmeen Nawaz, an Elementary School Teacher at Government Girls High School Nari Panos, District Karak, participated in the CPD Elementary Programme starting in KP. At the outset of the intervention, her Classroom Observation Tool (COT) score, as assessed by her headteacher, Ms. Shaheen Akhtar, was 3.09 out of 5 — indicating a need for professional growth, particularly in aligning instructional practices with student learning outcomes (SLOs). Throughout the intervention period, Yasmeen received sustained pedagogical support. Her headteacher, Ms. Shaheen Akhtar, provided structured classroom observations and actionable feedback, which helped Yasmeen reflect on and improve her teaching strategies. In parallel, she engaged with self-paced online modules to strengthen her subject knowledge and deepen her understanding of pedagogical content. These were complemented by targeted mentorship during online learning forums led by Subject Experts, focusing on areas identified as needing improvement based on her earlier COT and online module assessment results.

Yasmeen's teaching practices were evaluated four times during the intervention, showing consistent and significant improvement. Her COT score rose to 3.55 by mid-February and peaked at 4.36 by mid-March 2025. This upward trend reflects the combined impact of timely mentorship, continuous feedback, and focused content development.

Yasmeen's case exemplifies how well-structured, on-the-job professional development—anchored in classroom observation, digital content, and expert mentorship—can drive meaningful change in teacher performance. Her progress stands as strong evidence of the CPD Elementary Programme's effectiveness in building teacher capacity and promoting student-centered instructional practices across schools in Khyber Pakhtunkhwa.

