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Khyber Pakhtunkhwa

School-Based Assessment

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Khyber Pakhtunkhwa

Bridging Technical Assistance for Governments (B-TAG)

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List of Abbreviations

#	Abbreviation	Full Form
1	ASDEO	Assistant Sub-Divisional Education Officer
2	B-TAG	Bridging Technical Assistance for Governments
3	DCTE	Directorate of Curriculum and Teacher Education
4	DDEO	Deputy District Education Officer
5	DEO	District Education Officer
6	DPD	Directorate of Professional Development
7	E&SED	Elementary & Secondary Education Department
8	FCDO	Foreign, Commonwealth and Development Office
9	SBA	School-Based Assessment
10	SLO	Student Learning Outcomes

1. Executive Summary

School-Based Assessment (SBA) is a formative assessment mechanism administered by teachers at the school level to monitor student learning and inform classroom practice. In Khyber Pakhtunkhwa (KP), the Elementary & Secondary Education Department (E&SED), under the Government's Good Governance Roadmap, has introduced SBA through a standardised online portal for public schools. This marks a shift away from non-standardised, teacher-made assessments towards planned, curriculum-aligned assessments that capture individual student-level data. The reform is led by the Directorate of Curriculum and Teacher Education (DCTE), with technical assistance from the FCDO-funded Bridging Technical Assistance for Governments (B-TAG) programme. This report presents the implementation of the SBA model in KP's summer-zone schools and the findings of the first two semester assessment rounds, and sets out recommendations to strengthen the system ahead of wider scale-up.

In its first phase, SBA was rolled out in summer-zone schools for Grades 3 to 8 across the subjects of English, Mathematics, Science (Grades 4-8) and General Knowledge (Grade 3). Foundational work began in September–October 2024, when DCTE and B-TAG developed an academic calendar and initiated item banking. This was followed by a series of item development and review workshops in October 2025, through which a comprehensive item bank of 4,833 assessment items was developed across Grades 3 to 8. District Education Officers, Deputy District Education Officers and SBA focal persons were oriented in December 2025, after which 1.53 million students were registered from approximately 18,000 summer-zone schools. Teachers were trained through video tutorials during the Professional Development Day, and the platform was formally launched on 12 December 2025. Semester examinations were subsequently administered on the SBA portal under the province's new semester examination system.

Assessment data analysed for this report cover two semester rounds across three selected districts Haripur, Kohat and Mardan, representing three different geographic locations. Across these three districts, a total of 3,245 students were assessed in Semester-1 and 2,123 in Semester-2. In Semester-1, average scores were 63.68% in English, 63.15% in Mathematics and 61.11% in science. In Semester-2, average scores rose to 71.71% in science, 71.05% in English and 70.48% in Mathematics.

The number of students with assessment records declined from 3,245 in Semester 1 to 2,123 in Semester 2. This reduction highlights the need for stronger data completeness, student record matching and reporting processes as SBA moves towards wider implementation.

Comparison of the two assessment rounds shows higher average assessment performance across all three subjects, although the results should be interpreted cautiously because the two rounds assessed different Student Learning Outcomes (SLOs) aligned with the academic calendar and are therefore not direct measures of learning gains on the same competencies.

Gender-disaggregated analysis found improvements for both female and male students, with male students recording particularly large gains in English. District-level analysis showed that District Mardan improved substantially across all three subjects, Haripur recorded gains led by science, while Kohat showed more limited change between the two rounds.

Implementation surfaced operational considerations that should inform future scale-up: a reduction in the number of students with complete, matched records between Semester-1 and Semester-2, reflecting gaps in data completeness and timely reporting; the need to strengthen teacher capacity to translate assessment findings into classroom remediation rather than portal use alone; and the importance of sustained technical and operational support to maintain data quality and system use as SBA scales to winter-zone schools.

The rollout demonstrates that a standardised, portal-based SBA model can be operationalised across KP's public-school system and can generate timely, individual student-level assessment data that can form the basis for more diagnostic and actionable information on learning.

The significance of the pilot extends beyond the administration of semester examinations. By establishing a common assessment framework, curriculum-aligned item bank and digital platform for capturing individual student performance, the initiative creates the foundation for a more systematic assessment cycle in KP. The next stage should focus on ensuring that assessment information is consistently interpreted and used by teachers, school leaders and education managers to identify learning gaps, target remedial support and inform professional development. At the same time, stronger longitudinal and comparative analysis will be needed to establish whether the system contributes to sustained improvements in student learning.

Building on these findings, the report recommends: institutionalising semester-based SBA within routine academic processes; strengthening teachers' capacity to translate diagnostic data into instructional and remedial practice; introducing structured remedial support mechanisms based on SBA findings; strengthening data quality assurance and completeness of reporting; developing district- and school-level performance dashboards; providing continuous technical and operational support to schools; and pursuing a phased, evidence-informed scale-up of the SBA model to winter-zone schools and additional grades.

2. Introduction

School-Based Assessment is a form of formative assessment conducted by teachers at the school level to monitor student learning and inform classroom teaching practices. Beyond its classroom function, SBA data can also serve broader system-level purposes by enabling education authorities to identify learning gaps, provide targeted support to teachers and schools, and strengthen curriculum design, textbook development, teacher training programmes and assessment frameworks. In this way, SBA contributes to establishing a continuous feedback loop between classroom learning and education policy and planning.

In Khyber Pakhtunkhwa, the Government is committed to improving student learning outcomes by strengthening classroom assessment practices. Under the Government's Good Governance Roadmap, the Elementary & Secondary Education Department with technical assistance from B-TAG, introduced SBA through an online portal for public schools. In the first phase, SBA is being implemented in summer-zone schools for Grades 3 to 8 in the subjects of English, Mathematics, Science (Grades 4-8) and General Knowledge (Grade 3). Following successful implementation in the summer zone, SBA will be scaled up to winter-zone schools after the winter break.

Traditionally, assessments at the primary and middle levels have been non-standardised, resulting in inconsistent data and limited diagnostic value. SBA represents a major shift towards assessment that is aligned with the academic calendar and SLOs, and towards the use of a standardised digital system to capture individual student-level data moving away from ad-hoc, teacher-made tests towards planned assessments. This reform aims to embed a culture of evidence-based teaching and learning, in which data is used to identify gaps, improve classroom practice, and raise the quality of education across Khyber Pakhtunkhwa.

The rationale for strengthening SBA is therefore not simply to digitise existing assessment practices, but to improve the quality, consistency and use of assessment evidence. A standardised, curriculum-aligned SBA system can provide a common basis for understanding what students know and are able to do, identify areas of underperformance at the level of subjects and SLOs, and enable teachers and education managers to respond more systematically. The intended value of the reform lies in establishing a continuous cycle of assessment, diagnosis, instructional response and reassessment, rather than treating assessment primarily as an exercise in recording and reporting results.

The Directorate of Curriculum and Teacher Education is leading this initiative as part of its wider commitment to enhancing student learning outcomes across the province. School-Based Assessment offers a formative, continuous approach to evaluating student progress, enabling teachers to make timely instructional adjustments and provide targeted support. With technical assistance from the FCDO-funded B-TAG programme, DCTE developed an academic calendar, established a curriculum-aligned item bank, and built the operational systems required to administer standardised assessments through the SBA online portal.

This report examines the implementation of the online SBA model in KP's summer-zone schools, presents the findings of the first two semester assessment rounds from selected schools, identifies key lessons and implementation considerations, and sets out actionable recommendations for strengthening the system. The findings are intended to inform future policy and programmatic decisions and support the evolution of SBA into a robust, province-wide assessment system that can support improved student learning through timelier and evidence-informed instructional decision-making.

3. Implementation Steps

With technical assistance from B-TAG, and in consultation with DCTE and the E&SED, the SBA system was developed and deployed as a standardised online platform for public schools. The following steps were undertaken to implement the SBA model in KP's summer-zone schools.

3.1 Academic Calendar, Item Bank Development and Item Review

Foundational work for SBA began in September–October 2024, when DCTE, with technical support from B-TAG, developed an academic calendar and initiated item banking for Grade 6. This laid the groundwork for structured, curriculum-aligned school-based assessments and demonstrated the potential for scalable assessment tools across core subjects. B-TAG also supported DCTE in conducting capacity-building workshops for item-developers.

Building on this foundation, a series of item development and item review workshops was conducted in October 2025 (Workshop 1: 7–10 October 2025; Workshop 2: 14–17 October 2025) to develop a comprehensive SBA item bank spanning Grades 3 to 8. The items were aligned with the curriculum and mapped to relevant Student Learning Outcomes (SLOs), enabling assessment results to provide meaningful diagnostic information on student learning.

Item Development and Review Process

The item development was managed by the Assessment & Evaluation (A&E) Wing of DCTE, following a structured process designed to ensure curriculum alignment, technical quality and independent review of assessment items.

Item Development

1. **Notification of item writers:** DCTE notified subject experts from its existing pool of trained item writers and communicated the dates and arrangements for the item development workshop. Selected experts possessed relevant subject-matter expertise and prior experience in item development.
2. **Composition of subject groups:** Four to five subject experts were notified for each subject. A Desk Officer was assigned to each subject group to supervise and coordinate the item development process.
3. **Allocation of SLOs:** The relevant SLOs were distributed among the subject experts. Each expert was required to develop a minimum of four items against each assigned SLO, ensuring adequate coverage of the curriculum and generation of a sufficient pool of items.
4. **Item drafting:** Each expert was provided with a standard item-writing template and was required to handwrite the items on the prescribed format. Separate templates were used for Multiple Choice Questions (MCQs), Restricted Response Questions (RRQs) and Extended Response Questions (ERQs) (see Annexures A, B and C).
5. **Typing and proofing:** Completed templates were submitted to the Desk Officer and forwarded to the Data Entry Operator for typing. The typed items were printed and returned to the respective subject experts for verification, correction and finalisation.
6. **Filing for review:** Once the Desk Officer approved the finalised items, they were filed and retained for the subsequent item review stage.

Item Review

The item review workshop was notified separately, and a different panel of subject experts was engaged to provide independent scrutiny of the developed items. The review followed the following steps:

1. **Distribution of items:** Desk Officers and review experts were notified of the review workshop, and the developed items were distributed among the reviewers for detailed examination.
2. **Review criteria:** Each item was reviewed against key quality criteria, including:
 - o alignment with the relevant curriculum;
 - o alignment with the assigned SLO;
 - o appropriateness of the intended cognitive level;
 - o appropriateness of the difficulty level; and
 - o language, clarity and grammatical accuracy.
3. **Submission of reviewed items:** Following review, the completed reviewed items were submitted to the Desk Officer.
4. **Correction and finalisation:** Recommended corrections were incorporated by the Data Entry Operators. Revised items were then reprinted and shared with the subject experts for final verification and confirmation.
5. **Item bank entry:** Once approved, the finalised items were formally entered into the SBA item bank.
6. **Portal upload:** The finalised items were also shared in soft form with the IT Administrator for uploading to the SBA portal, making the items available for use in the SBA system.

This process established a clear separation between item development and item review, with different experts engaged at the two stages. It also provided multiple quality-control points, from initial drafting and technical formatting through independent review, correction, final expert confirmation and item-bank entry. The use of standardised templates ensured that each item was accompanied by essential metadata, including its SLO, cognitive level, difficulty level, curriculum unit/topic, content reference, item writer and reviewer.

A total of 4,833 assessment items were developed across the subjects of English, Mathematics, Science and General Knowledge, as shown below.

Table 1: SBA Items Developed by Grade (Grades 3–8)

All Grades	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Total
G. Knowledge	264	0	0	0	0	0	264
G. Science	0	278	268	251	258	286	1341
Math	244	260	264	312	396	288	1764
English	201	200	298	275	204	286	1464
Total	709	738	830	838	858	860	4833

The item bank is intended to provide a reusable pool of curriculum-aligned assessment items from which semester assessments can be generated systematically. Future cycles should incorporate item-level

performance analysis, including item difficulty and discrimination, to support continuous improvement of the assessment bank and strengthen comparability across assessment rounds.



Figure 1: Item Development and Review Workshops – October 2025

3.2 SBA Online Portal

The SBA online portal was established as the standardised digital backbone of the reform. The platform enables school-level registration of students, administration of semester examinations aligned with the academic calendar, item-wise entry and processing of student responses, and generation of performance reports. By capturing individual student-level data through a single standardised system, the portal replaces fragmented, teacher-made assessment records with consistent, comparable data that can be analysed at the student, school, district and provincial levels. This provides the potential for education managers to access timely information to monitor learning trends and supports evidence-based decision-making across the system. SBA Dashboard was designed to give visibility of student performance at multiple tiers including, teachers, district authorities, and provincial departments to strengthen evidence-based planning and decision making.

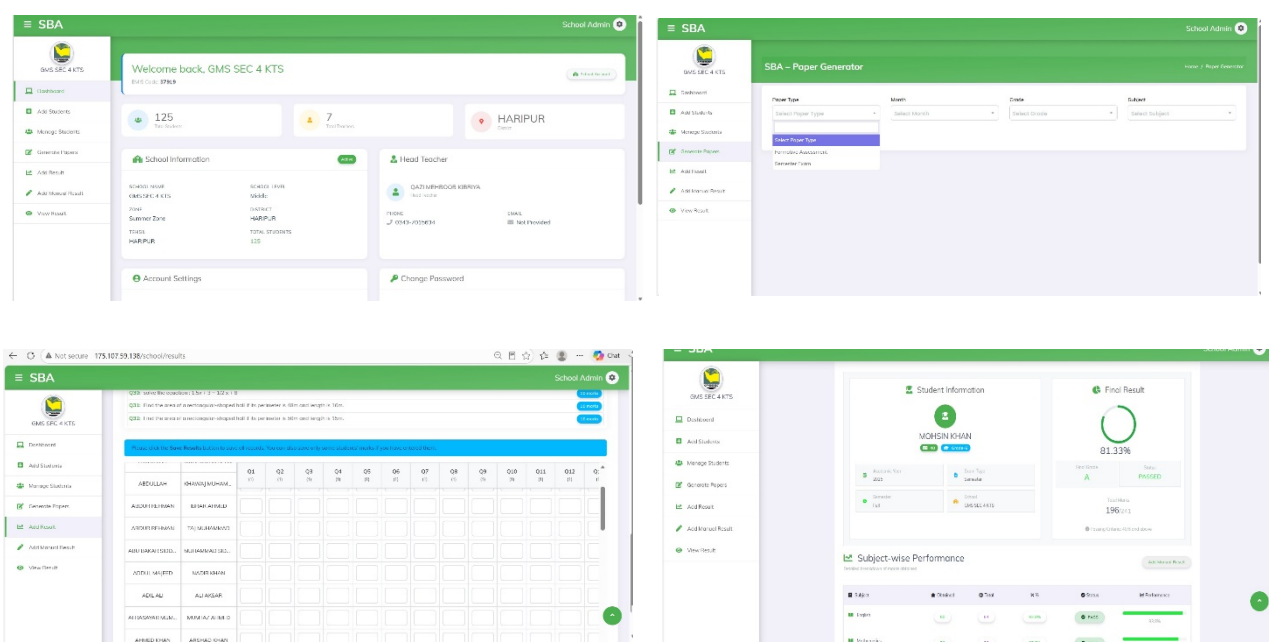


Figure 2: SBA Portal – Teacher View

grade_name	subject_name	Total SLOs	Mastered	Developing	Need Support
Grade-6	All	115	30	35	50
LearningLabel		SLO Score % SLO Mastery Band			
2.1 - Recognise, identify and represent integers (positive, negative, and neutral integers) and their absolute or numerical value.		50.00% Developing			
3.0 - Scan to answer short questions, focus on opinion.		50.00% Developing			
1.2 - Round off whole numbers, integers, rational numbers and decimal numbers to a required degree of accuracy, significance or decimal places (up to 3 decimal places).		50.00% Developing			
2.8 - Describe the structure and function of the human heart.		50.00% Developing			
4.2 - Recognize that oxygen is needed in combustion, rusting and tarnishing.		50.04% Developing			
6.6 - Manipulate simple algebraic expressions using addition and subtraction.		50.40% Developing			
1.1 - Scan to answer short questions, focus on opinion.		50.40% Developing			
4.2 - Solve real-world word problems involving percentage.		50.48% Developing			
1.32 - Recognize and use personal pronouns in subjective, objective, possessive cases, and demonstrative, interrogative, reciprocal, and reflexive pronouns (this, that, one another, myself).		51.32% Developing			
2.15 - Identify and use adverb phrases in writing for different purposes.		52.05% Developing			
2.16 - Recognize and use the forms and functions present perfect tense.		52.19% Developing			
4.14 - Differentiate between homophones (whether/weather, seen/scene, herd/heard, hare/hair), they're/there/theirs).		52.19% Developing			
1.1 - Scan to answer short questions, locate an opinion.		52.39% Developing			
6.2 - Continue a given number sequence and find(s) position to term rule.		52.89% Developing			
2.12 - Identify adjectives of quantity, quality, size, shape, colour, and origin.		55.10% Developing			
3.3 - Divide like and unlike integers.		55.89% Developing			
3.4 - Recognize the order of operations and use it to solve mathematical expressions involving whole numbers, decimals, fractions, and integers.		56.64% Developing			
4.13 - Comprehend and use simple phrasal verbs (e.g., blow up-get angry) and idioms (e.g., lend a hand-help) in the different texts.		57.53% Developing			
3.12 - Recall H.C.F and L.C.M.		62.50% Developing			
Total		48.64% Needs Support			

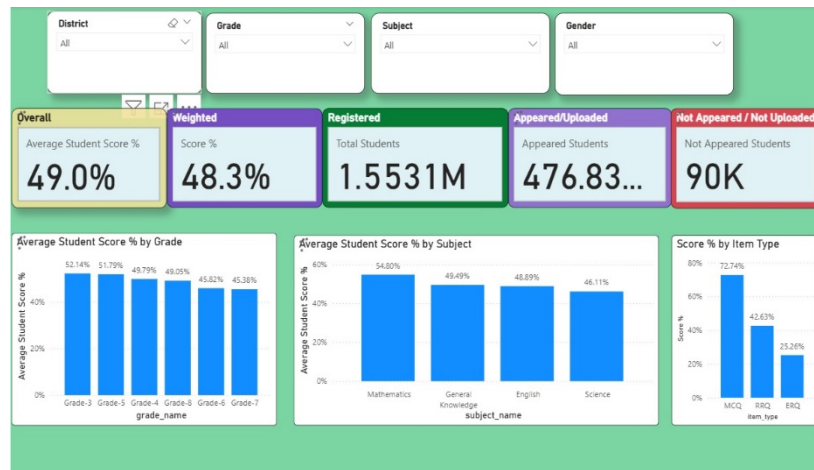


Figure 3: SBA Dashboard view and analytics

3.3 Orientation of DEOs, DDEOs and SBA Focal Persons

An orientation session for District Education Officers (DEOs), Deputy District Education Officers (DDEOs) and SBA focal persons was conducted at the Directorate of Professional Development (DPD) on 2 December 2025. A total of 43 officials (21 male and 22 female) from the summer-zone districts attended. Participants were briefed on the SBA model and its objectives, and login credentials were shared with SBA focal persons to enable school and student registration.

Figure 4: Orientation of DEOs, DDEOs and SBA Focal Persons, DPD – 2 December 2025

3.4 Student Registration

Student registration was carried out from 3 to 12 December 2025. During this period, a total of 1.53 million students were registered on the SBA portal from approximately 18,000 summer-zone schools, establishing the student database required to administer and track assessments at scale.

3.5 Teacher Training

To support the effective implementation of SBA, B-TAG developed and disseminated a set of video tutorials for teachers covering the key operational aspects of the SBA system. The videos covered use of the SBA portal, student registration, administration of assessments, entry/processing of assessment results, and basic navigation of assessment-related features. The videos were designed to provide teachers with step-by-step guidance and promote consistent implementation across schools. Separately, a repository of resources was developed using Google Drive managed by the DTCE, including available lesson plans, video lectures and classroom demonstrations mapped against the SLOs to support teachers improve remediation in classrooms.

The videos and supporting materials were shared with teachers during the Professional Development Day held in the last week of December 2025 across primary schools in the summer zone. The training therefore provided an opportunity to reach all primary schools teachers across the summer zone before the implementation of the assessment cycle.

The training primarily focused on operational readiness for SBA, including how to register students, administer assessments, use the portal, and process or submit assessment results. It also introduced teachers to the purpose of SBA and the importance of using assessment evidence to understand student learning. Additionally, it focused on assessment-data interpretation and the systematic use of results to plan remedial instruction using the materials shared.

The training established an important foundation for system use. Going forward, teacher capacity-building should be strengthened to include hands-on training in interpretation of assessment results, identification of SLO-specific learning gaps, use of item-level evidence, student grouping and differentiation, and development and monitoring of remedial action plans. This would enable SBA to move beyond a mechanism for collecting and reporting assessment data towards a genuinely formative assessment system in which evidence is routinely used by teachers to adapt instruction and support students who are falling behind.

3.6 Launch Ceremony

The SBA launch ceremony was held on 12 December 2025 at Nishtar Hall, Peshawar. The event was attended by the Minister for E&SED, the Chief Secretary, the Secretary E&SED, the Director DPD and the Director E&SED. Participants included District Education Officers, Deputy District Education Officers, School Leaders, Assistant Sub-Divisional Education Officers (ASDEOs) and the Additional Director DPD.

The primary purpose of the ceremony was to formally introduce and institutionalise the SBA initiative within the education system, communicate its objectives and implementation approach to key stakeholders, and secure leadership support for its rollout across schools. The event provided an opportunity to sensitise provincial and district-level education officials to the rationale for moving towards a more structured and curriculum-aligned approach to school-based assessment.

The launch also sought to clarify the roles and responsibilities of different stakeholders in implementing SBA, particularly at the district and school levels. The event emphasised that SBA should not be viewed solely as a mechanism for generating assessment scores, but as a tool to generate evidence on student learning that can ultimately inform teaching, identify learning gaps and support targeted interventions.



Figure 5: SBA Launch Ceremony, Nishtar Hall, Peshawar – 12 December 2025

3.7 Semester Examinations on the SBA Portal

Under the province's new semester examination system, the first semester examinations commenced in summer-zone schools on 12 December 2025 through the SBA portal. Assessments were administered at the school level and student responses were captured directly on the platform, enabling standardised scoring and the generation of performance data for analysis. Conducting examinations on the portal ensured that results were consistent, comparable and immediately available for diagnostic use.



Figure 6: Semester Examinations Administered through the SBA Portal

The second semester examination was conducted in May 2026 and results were uploaded to the portal for evidence-based planning and use.

3.8 Monitoring & Evaluation

To assess implementation and examine emerging patterns in student performance, assessment data collected through the portal were analysed to measure student learning and identify areas requiring instructional improvement. Findings from this process were intended to inform iterative refinements to both the assessment tools and the implementation processes, including improvements in item design, teacher support mechanisms, and data-use practices at the school level. Following the summer-zone phase, the intention was to embed SBA as a regular component of KP's provincial assessment system and to extend it to winter-zone schools after the winter break.

4. Sampled Schools for Detailed Analysis

4.2 School Sample

A sample of 100 public sector middle schools was selected across the three districts, representing three different geographic locations to assess the implementation of the SBA model. The sample was designed to maintain a 70:30 distribution between female and male schools respectively.

Figure 7: Schools in Sample

As shown in Figure 7, the sample included **70 female schools and 30 male schools**. This distribution ensured representation of both girls' and boys' schools within the selected districts while maintaining greater representation of female schools in line with the intervention design.

District-wise distribution of sampled schools further indicates that Mardan accounted for the largest share of schools included in the pilot, followed by Kohat and Haripur.

Figure 8: District & Gender wise Schools in Sample

The district and gender-wise distribution of sampled schools was as follows:

- **Haripur:** 13 female schools and 9 male schools
- **Kohat:** 22 female schools and 6 male schools
- **Mardan:** 35 female schools and 15 male schools

Overall, the sample ensured geographical representation across the three selected districts while maintaining the intended gender composition of schools.

Summary of the overall sample is provided below:

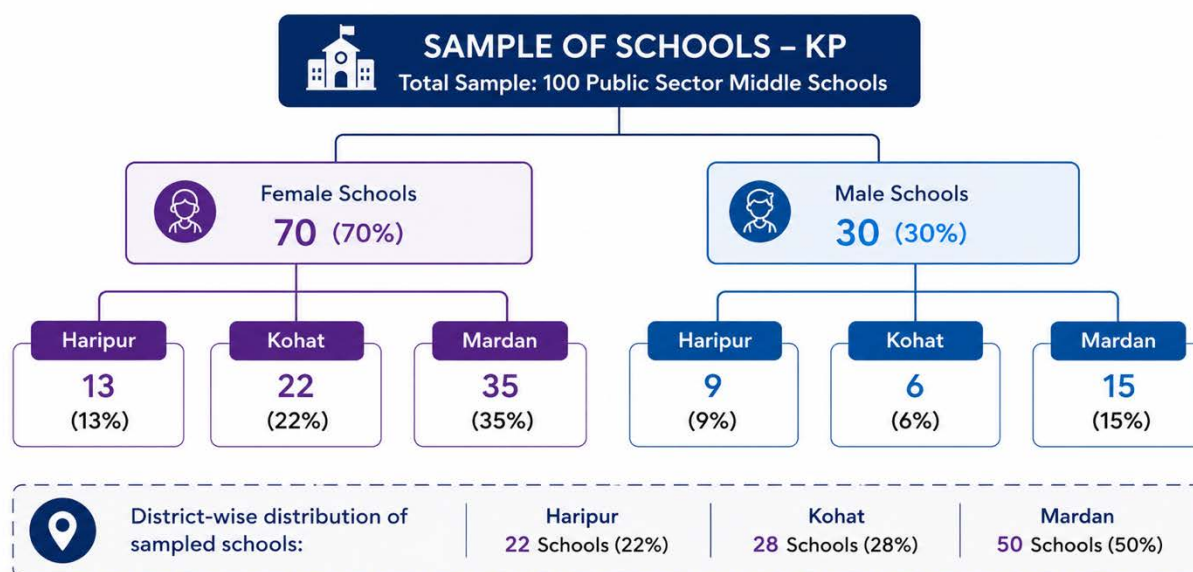


Figure 9: Sample Distribution by District and School Gender

4.2 School Coverage

Figure 9 describes the schools that were initially sampled for the pilot. The coverage presented below reflects the schools within this sample from which the required assessment data were successfully received and could be included in the analytical dataset.

Of the schools included in the final analytical dataset, **67 were female schools and 25 were male schools**. Female schools accounted for approximately **73 percent** of the achieved coverage, while male schools represented approximately **27 percent**.

Figure 10: School Gender Wise Coverage

District-wise school coverage, i.e. the number of schools from which complete repeated assessment records were obtained, is shown in Figure 11 below.

Figure 11: District & School Gender wise Coverage

District-wise coverage shows that:

- **Haripur** contributed 21 schools, including 12 female and 9 male schools.
- **Kohat** contributed 25 schools, including 22 female and 3 male schools.
- **Mardan** contributed 46 schools, including 33 female and 13 male schools.

Overall, complete repeated assessment records were obtained from **92 schools**, comprising 67 female and 25 male schools. The achieved coverage therefore represents **92 percent of the initially sampled 100 schools**.

5. Results and Analysis

This section presents the results of the SBA assessments across two semester rounds, covering student participation and subject-, gender- and district-disaggregated findings. The analysis draws on assessment records from three districts Haripur, Kohat and Mardan which constitute the analytical sample as described in section 4. It should be noted that the monthly and semester SBA assessments are aligned with the academic calendar and therefore assess different SLOs in each round; results across the two semesters should be read in this light.

Important note on interpretation: Semester 1 and Semester 2 assessments are curriculum-aligned but assess different SLOs. Consequently, differences in average scores between the two assessment rounds indicate changes in performance on successive assessments but should not be interpreted as direct measures of learning gains on identical competencies.

5.1 Semester-1 Assessment Results

5.1.1 Students Assessed

A total of 3,245 students were assessed during Semester-1 across the three participating districts. Female students accounted for 2,336 (72%) of all assessed students, while male students represented 909 (28%).

Students Assessed in Semester-1 by Gender

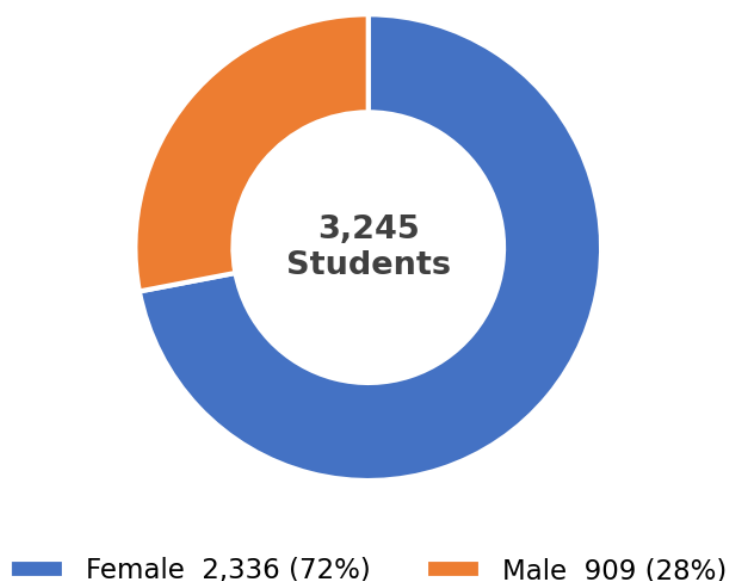


Figure 12: Students Assessed in Semester-1 by Gender

5.1.2 Subject-wise Average Scores (Overall)

Overall, students recorded the highest average score in English (63.68%), followed by Mathematics (63.15%) and Science (61.11%). Performance was broadly comparable across the three subjects during Semester-1, with English marginally ahead.

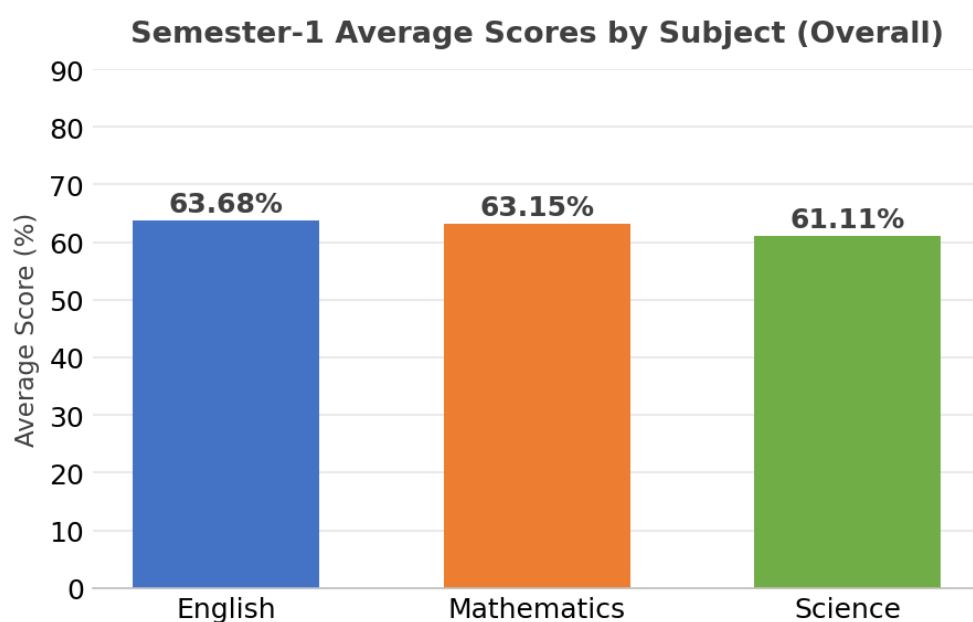


Figure 13: Semester-1 Average Scores by Subject (Overall)

5.1.3 Gender-wise Results

Female Students

Among female students, the highest average score was recorded in English (64.89%), followed by Mathematics (62.52%) and Science (59.11%). English was the strongest-performing subject for female students during Semester-1.

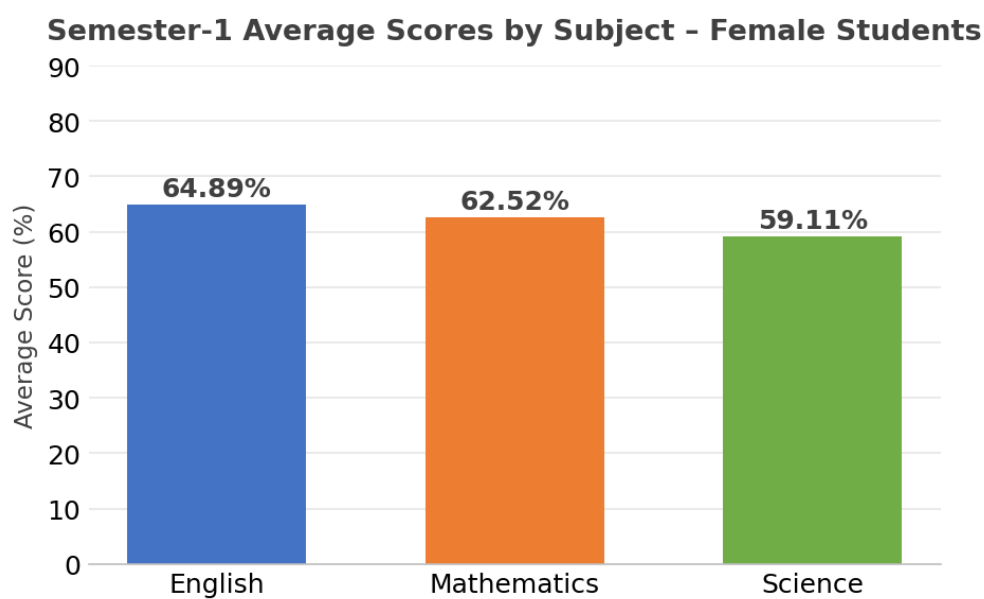


Figure 14: Semester-1 Average Scores by Subject – Female Students

Male Students

Among male students, the highest average score was recorded in Science (67.19%), followed by Mathematics (65.16%) and English (60.65%). Science was the strongest-performing subject for male students during Semester-1.

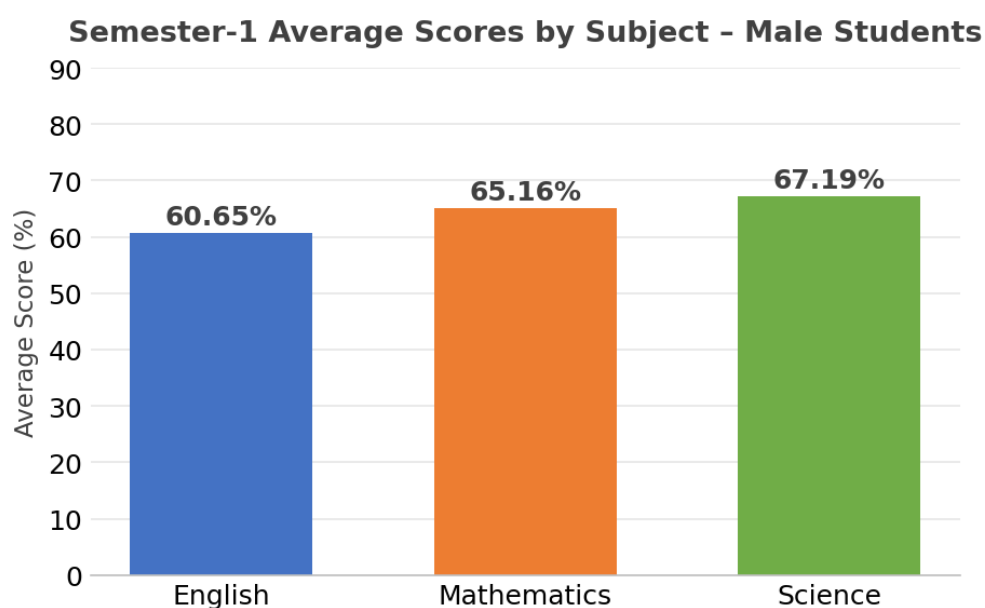


Figure 15: Semester-1 Average Scores by Subject – Male Students

5.1.4 District-wise Results

In Haripur, students recorded the highest average score in English (70.36%), followed by Science (64.82%) and Mathematics (60.38%). English emerged as the strongest-performing subject in the district during Semester-1.

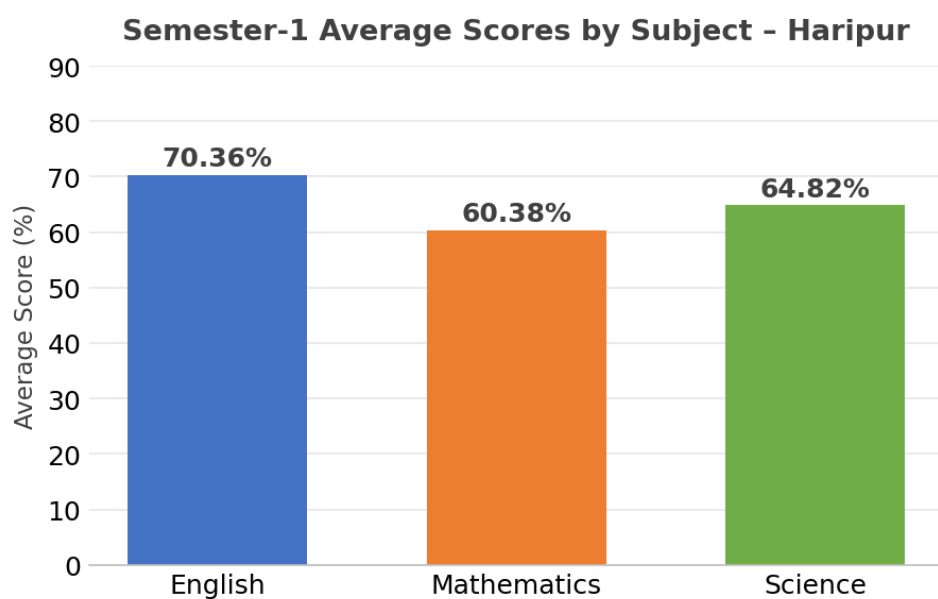


Figure 16: Semester-1 Average Scores by Subject – Haripur

In Kohat, students recorded the highest average score in Mathematics (70.65%), followed by English (67.86%), while Science recorded 57.39%. Mathematics was the strongest-performing subject within the district during Semester-1.

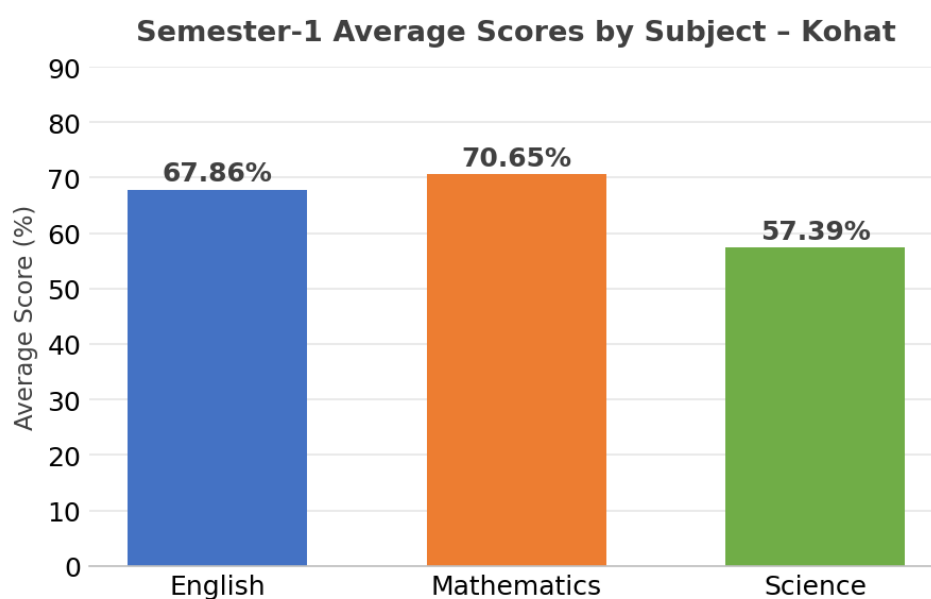


Figure 17: Semester-1 Average Scores by Subject – Kohat

In Mardan, students recorded the highest average score in Science (61.22%), followed by Mathematics (60.41%) and English (58.85%). Science emerged as the strongest-performing subject in the district during Semester-1.

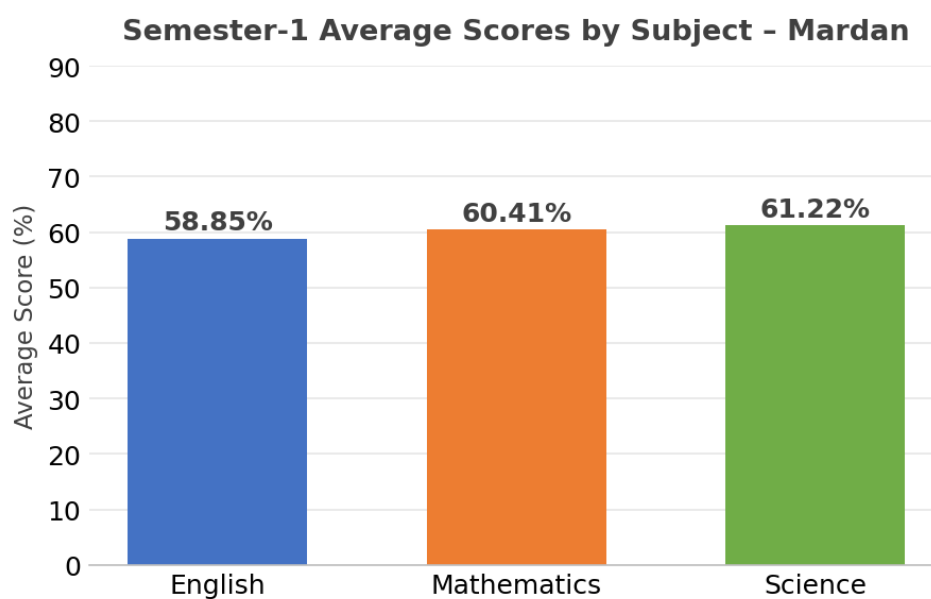


Figure 11: Semester-1 Average Scores by Subject – Mardan

Table 2: Summary of Semester-1 Average Scores (%)

Group	English	Mathematics	Science
Overall	63.68	63.15	61.11
Female	64.89	62.52	59.11
Male	60.65	65.16	67.19
Haripur	70.36	60.38	64.82
Kohat	67.86	70.65	57.39
Mardan	58.85	60.41	61.22

The Semester-1 results indicate considerable variation in performance across subjects and districts. English was relatively stronger overall, while Science showed the lowest average score, including among females. District-level differences were also evident, with different subjects emerging as relatively stronger or weaker across Haripur, Kohat and Mardan. These differences illustrate the potential value of disaggregated SBA data for identifying areas that may warrant further instructional attention. However, the results should be interpreted as a baseline description of performance rather than evidence of relative learning quality across districts, given differences in student composition, school characteristics and the specific SLOs assessed.

5.2 Semester-2 Assessment Results

5.2.1 Students Assessed

A total of 2,123 students were assessed during Semester-2 across the three participating districts. Female students accounted for 1,635 (77%) of all assessed students, while male students represented 488 (23%).

Students Assessed in Semester-2 by Gender

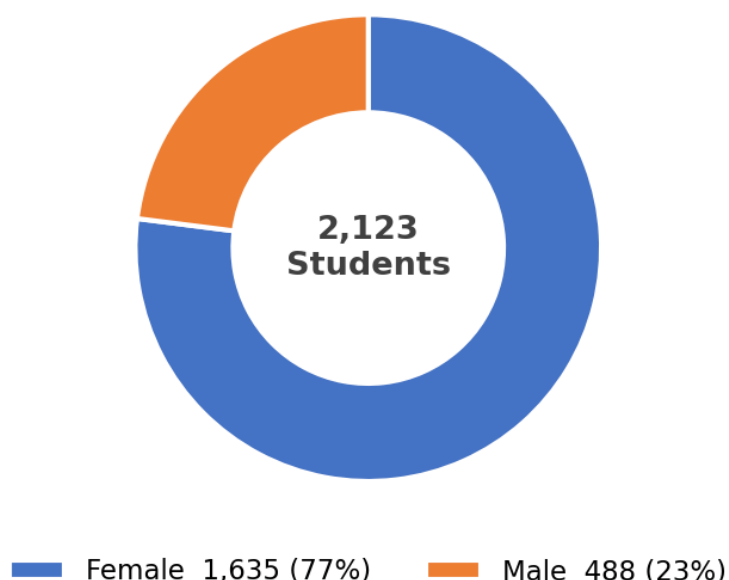


Figure 12: Students Assessed in Semester-2 by Gender

5.2.2 Subject-wise Average Scores (Overall)

Overall, students recorded the highest average score in science (71.71%), followed by English (71.05%) and Mathematics (70.48%). Average scores across all three subjects exceeded 70% in Semester-2. These higher average scores indicate stronger performance on the Semester-2 assessments; however, because the two assessment rounds assessed different SLOs, the difference should not be interpreted as direct evidence of learning gains.

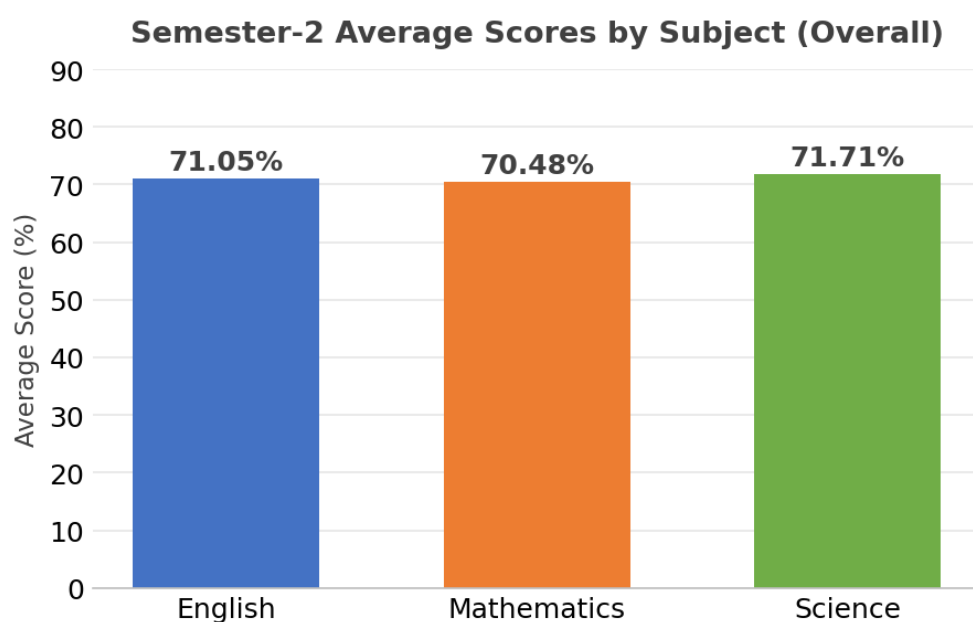


Figure 13: Semester-2 Average Scores by Subject (Overall)

5.2.3 Gender-wise Results

Female Students

Among female students, the highest average score was recorded in Science (70.51%), followed by English (70.32%) and Mathematics (69.12%). Science was the strongest-performing subject for female students during Semester-2.

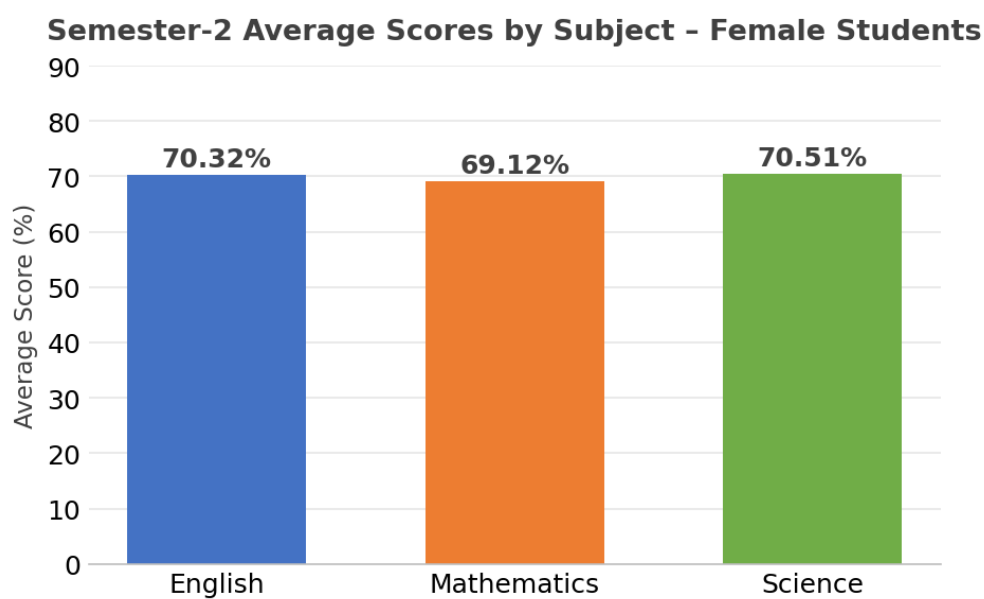


Figure 14: Semester-2 Average Scores by Subject – Female Students

Male Students

Among male students, the highest average score was recorded in Science (77.06%), followed by Mathematics (75.67%) and English (74.96%). All three subject averages exceeded 74%, indicating consistently strong performance.

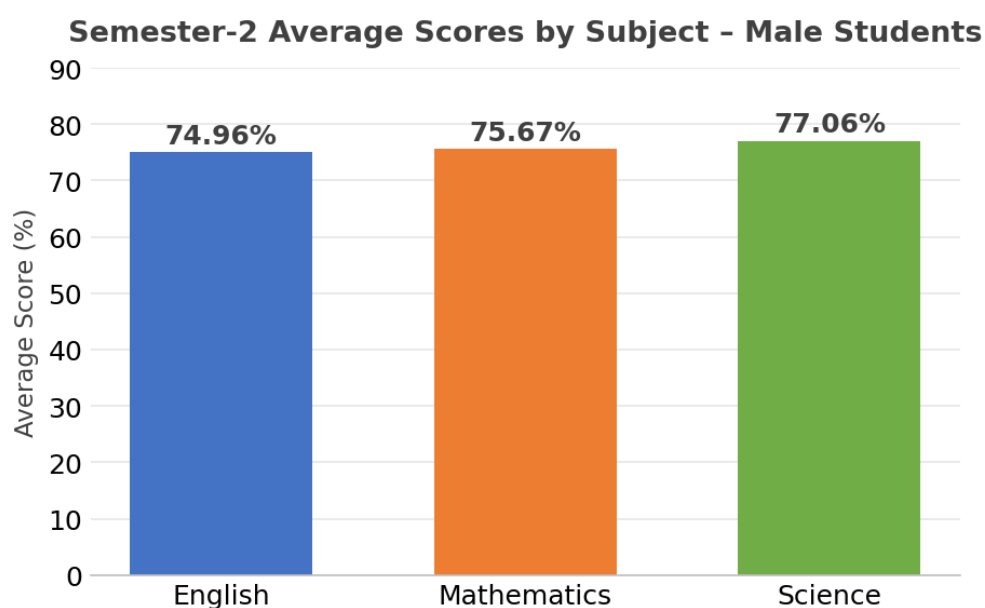


Figure 15: Semester-2 Average Scores by Subject – Male Students

5.2.4 District-wise Results

In Haripur, students recorded the highest average score in Science (71.77%), followed closely by English (71.75%) and then Mathematics (63.55%). Science emerged as the strongest-performing subject in the district during Semester-2.

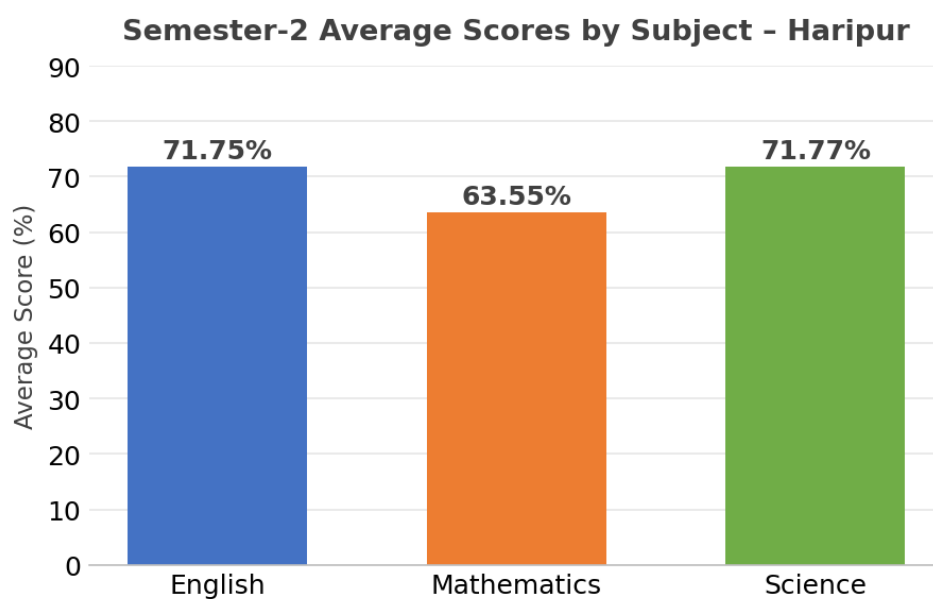


Figure 16: Semester-2 Average Scores by Subject – Haripur

In Kohat, students recorded the highest average score in Mathematics (70.19%), followed by English (68.60%), while Science recorded 61.07%. Mathematics remained the strongest-performing subject within the district during Semester-2.

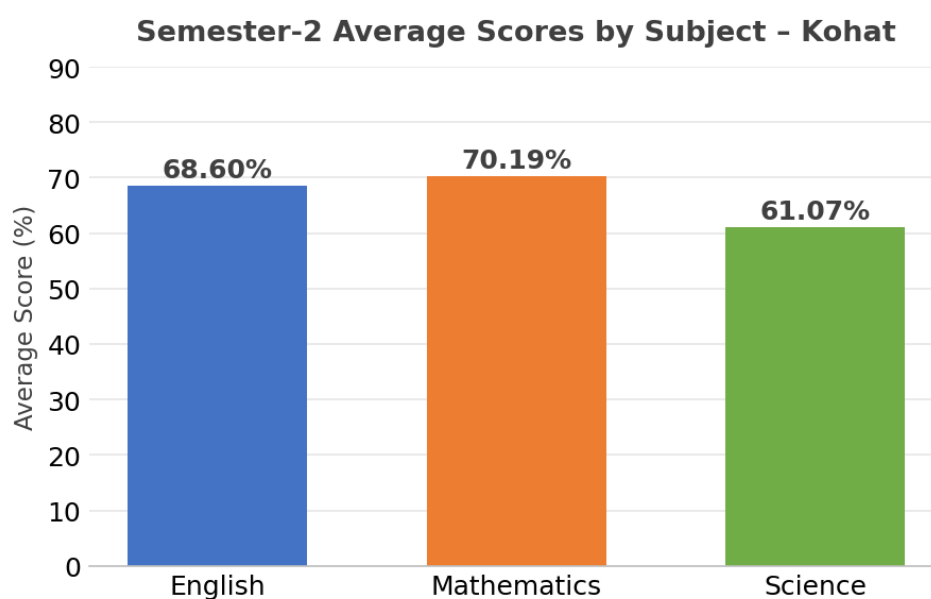


Figure 17: Semester-2 Average Scores by Subject – Kohat

In Mardan, students recorded the highest average score in Science (77.11%), followed by Mathematics (73.73%) and English (72.19%). Science emerged as the strongest-performing subject in the district during Semester-2.

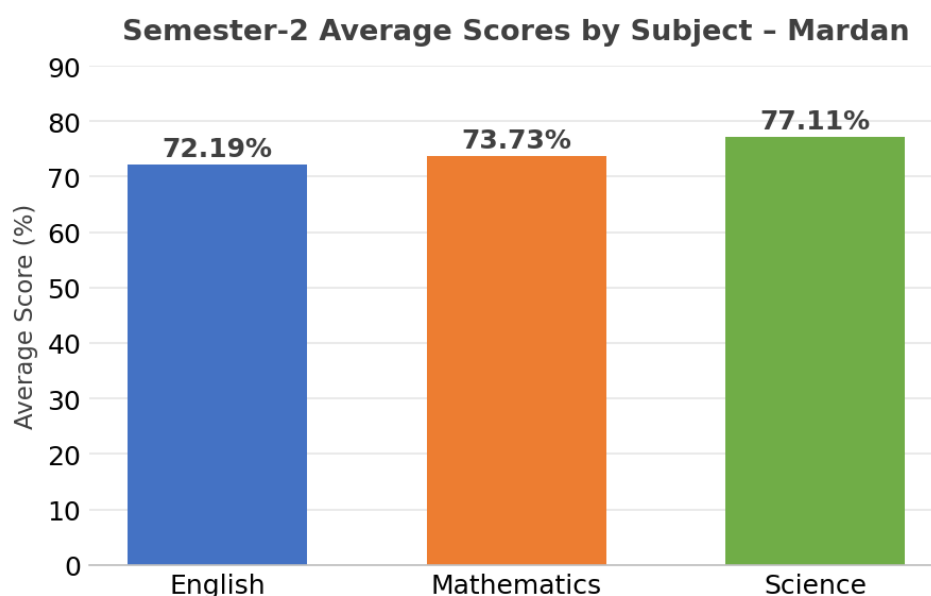


Figure 18: Semester-2 Average Scores by Subject – Mardan

Table 3: Summary of Semester-2 Average Scores (%)

Group	English	Mathematics	Science
Overall	71.05	70.48	71.71
Female	70.32	69.12	70.51
Male	74.96	75.67	77.06
Haripur	71.75	63.55	71.77
Kohat	68.60	70.19	61.07
Mardan	72.19	73.73	77.11

The Semester-2 results indicate generally strong performance across the three assessed subjects, with average scores exceeding 70% in English, Mathematics and Science. The results also show variation across districts and between male and female students, suggesting that aggregate provincial averages may mask important differences in student performance. These patterns reinforce the value of analysing SBA results at subject, district and student-group levels to identify areas requiring further attention. However, as the Semester-2 assessment covered a different set of SLOs from Semester 1, the results should be interpreted as a profile of performance on the Semester-2 assessment rather than as direct evidence of learning gains since the first assessment round.

6. Comparative Analysis

The comparative analysis examines changes in average student performance between the Semester-1 and Semester-2 SBA assessments across English, Mathematics and Science. The analysis is intended to identify patterns of change across successive assessment rounds and to examine whether these patterns vary by gender and district. As the two assessments covered different sets of SLOs aligned with the academic calendar, the observed differences should be interpreted as changes in performance across successive assessments rather than direct measures of learning gains on the same competencies.

6.1 Overall Comparison

The comparison below examines changes in average assessment performance across English, Mathematics and Science between Semester-1 and Semester-2. Overall, the comparison indicates improvements in student performance across all three subjects.

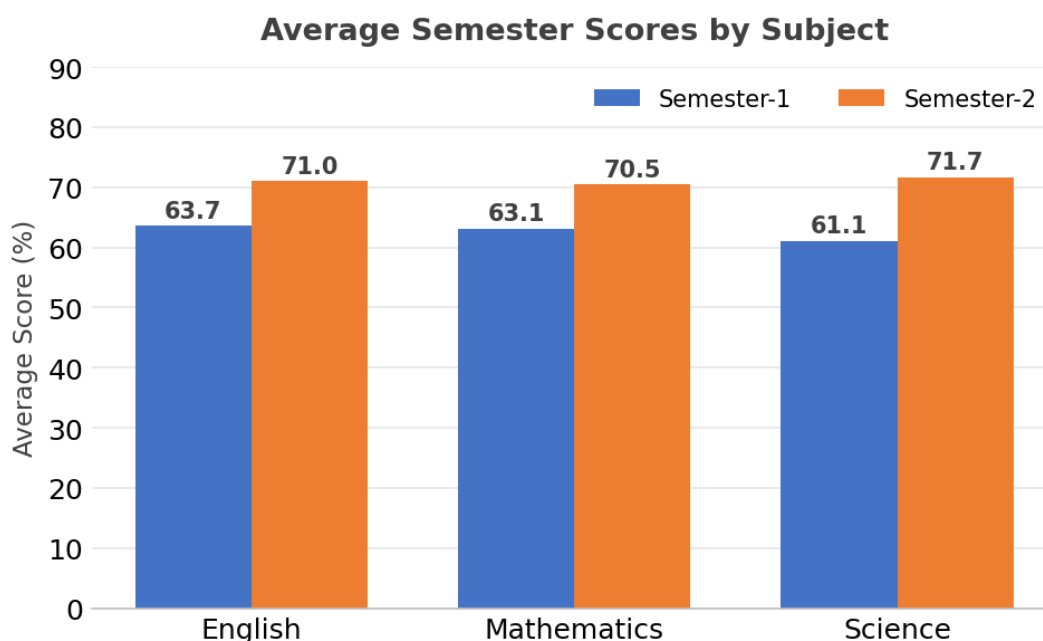


Figure 19: Average Semester Scores by Subject (Overall)

The findings show that:

- **English** scores improved from 63.68% in Semester-1 to 71.05% in Semester-2.
- **Mathematics** scores improved from 63.15% in Semester-1 to 70.48% in Semester-2.
- **Science** recorded the largest improvement, increasing from 61.11% in Semester-1 to 71.71% in Semester-2.

The percentage-point change across subjects further highlights the variation in observed learning gains between the two periods.

Percentage-Point Change by Subject (Semester-1 → Semester-2)

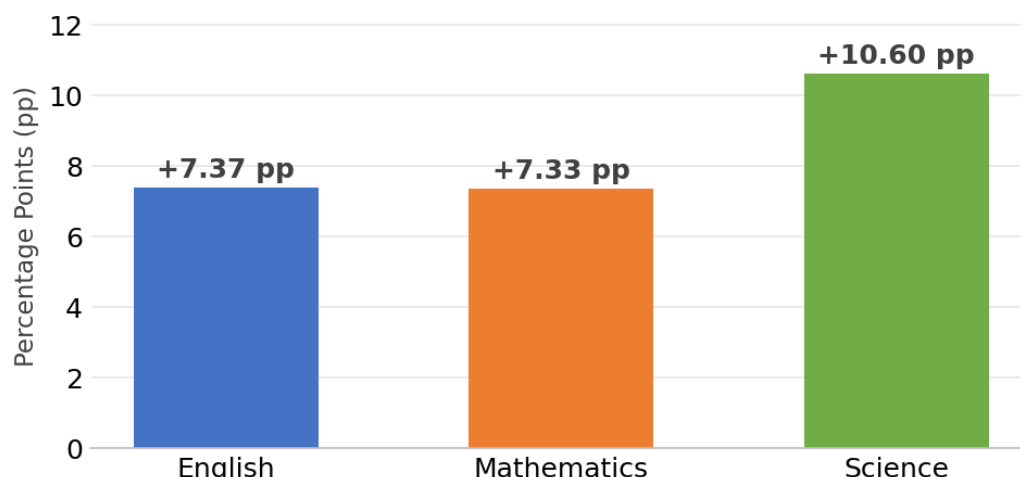


Figure 20: Percentage-Point (pp) Change by Subject (Semester-1 → Semester-2)

The largest increase in average assessment performance was observed in Science (+10.60 percentage points), followed by English (+7.37 percentage points) and Mathematics (+7.33 percentage points). Because different SLOs were assessed in the two semesters, these changes should be interpreted as differences in performance across successive assessment rounds rather than direct measures of gains on the same learning competencies.

6.2 Gender Comparison

The analysis also examined changes in learning outcomes separately for female and male students across the three assessed subjects.

Female Students

Among female students, English scores improved from 64.89% to 70.32%, Mathematics scores improved from 62.52% to 69.12%, and Science recorded the largest improvement, increasing from 59.11% to 70.51%. Female students demonstrated notable improvements across all three subjects, particularly in Science (+11.40 pp).

Average Scores by Subject - Female Students

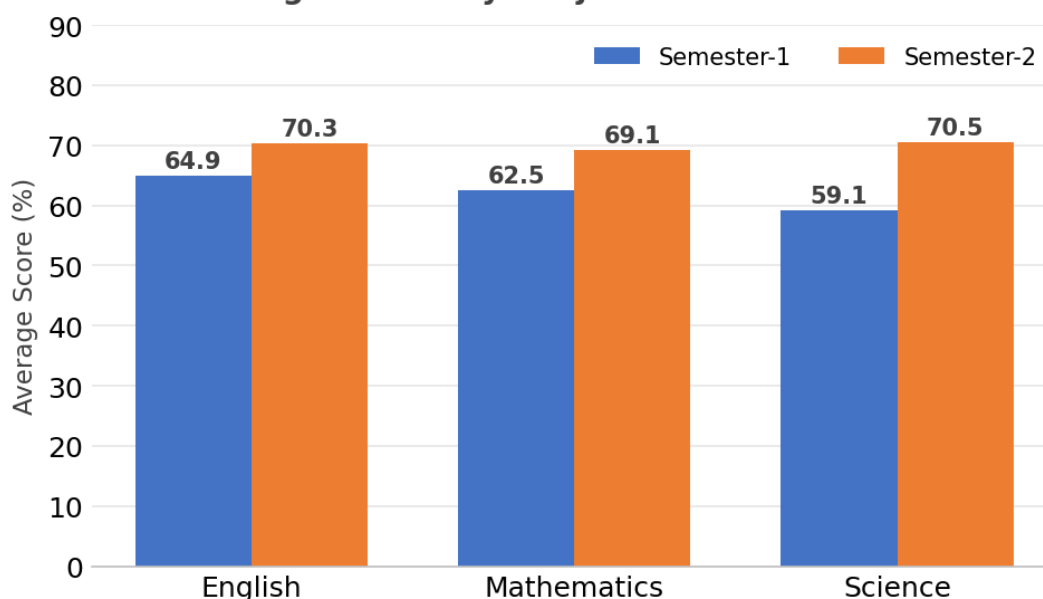


Figure 21: Average Scores by Subject – Female Students (Semester-1 vs Semester-2)

Male Students

Among male students, English scores improved from 60.65% to 74.96%, Mathematics scores improved from 65.16% to 75.67%, and Science scores improved from 67.19% to 77.06%. Male students recorded the largest single gain of any group in English (+14.31 pp), alongside strong improvements in Mathematics and Science.

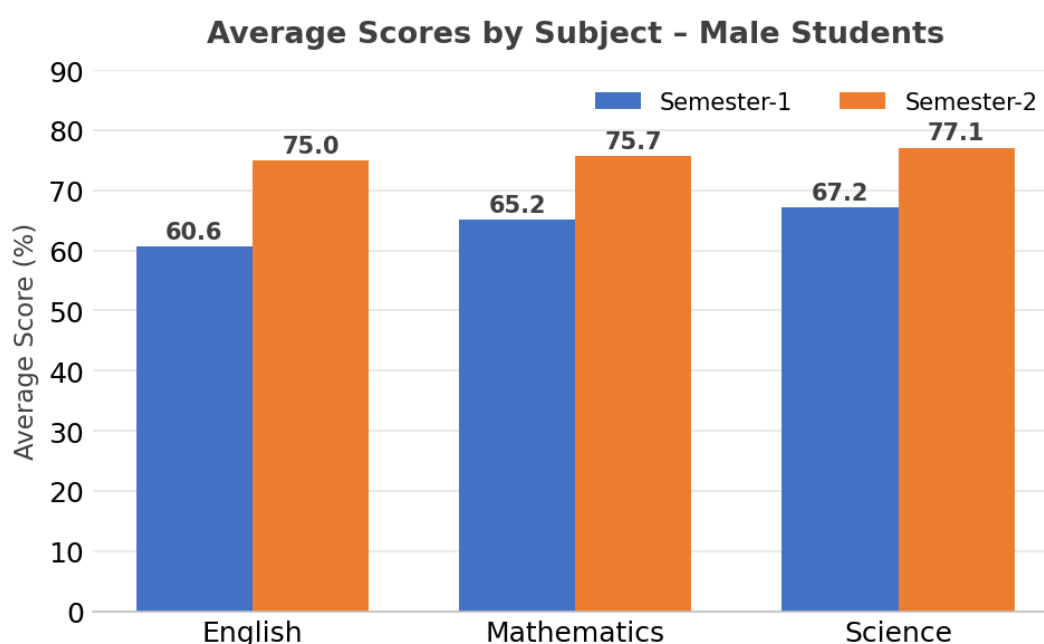


Figure 22: Average Scores by Subject – Male Students (Semester-1 vs Semester-2)

Average assessment performance increased for both female and male students across the three subjects. The magnitude of change varied by gender and subject, with female students showing the largest increase in Science and male students showing the largest increase in English. These patterns are descriptive and should not be interpreted as evidence of differential learning gains without controlling for differences in student composition, assessment content and participation across the two rounds.

6.3 District Comparison

District-wise analysis reveals variation in the patterns of Semester-1 and Semester-2 learning outcomes across the three participating districts.

In Haripur, English scores increased from 70.36% to 71.75%, Mathematics scores increased from 60.38% to 63.55%, and Science scores increased from 64.82% to 71.77%. The district demonstrated improvements across all three subjects, with the largest gains observed in Science.

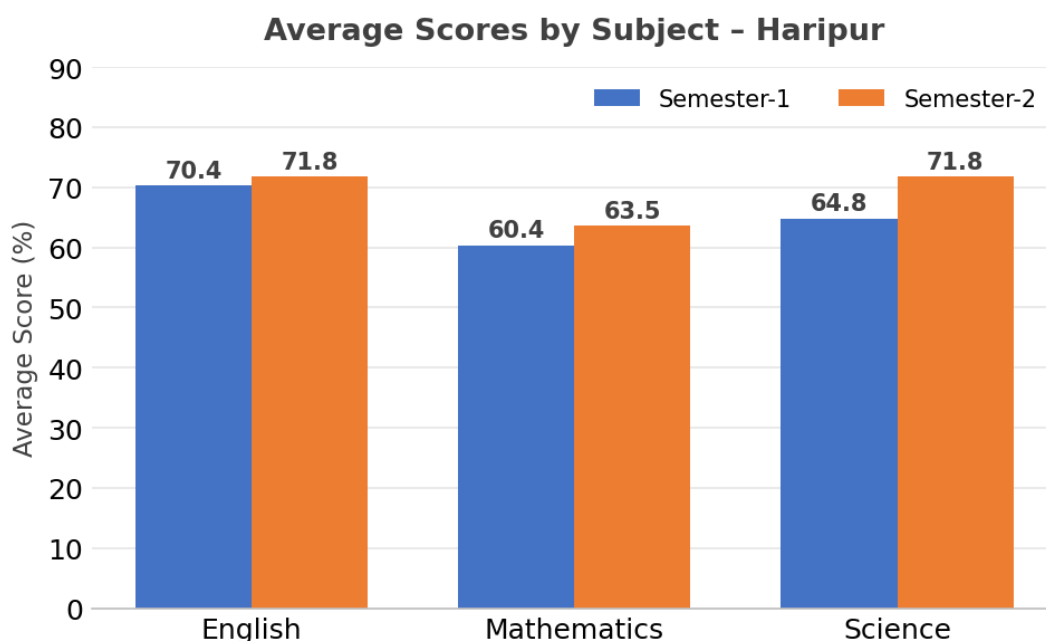


Figure 23: Average Scores by Subject – Haripur (Semester-1 vs Semester-2)

In Kohat, English scores increased marginally from 67.86% to 68.60%, Mathematics scores remained broadly stable, declining slightly from 70.65% to 70.19%, while Science scores improved from 57.39% to 61.07%. Compared with the other districts, Kohat demonstrated relatively limited change in learning outcomes between the two rounds.

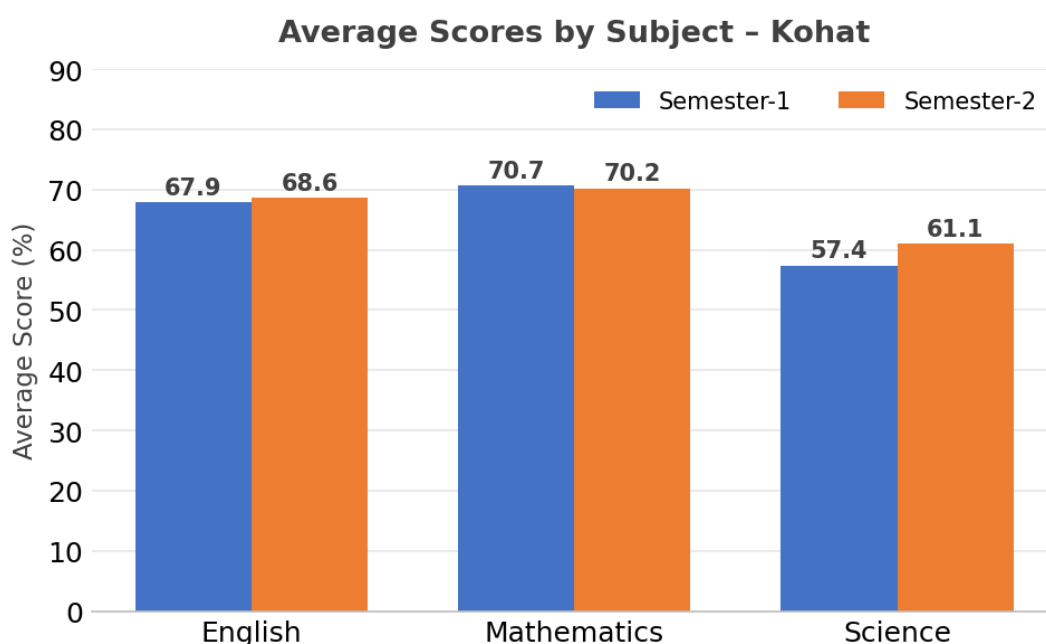


Figure 24: Average Scores by Subject – Kohat (Semester-1 vs Semester-2)

In Mardan, English scores increased from 58.85% to 72.19%, Mathematics scores increased from 60.41% to 73.73%, and Science scores increased from 61.22% to 77.11%. Mardan demonstrated the largest improvements of any district, with substantial gains across all three subjects.

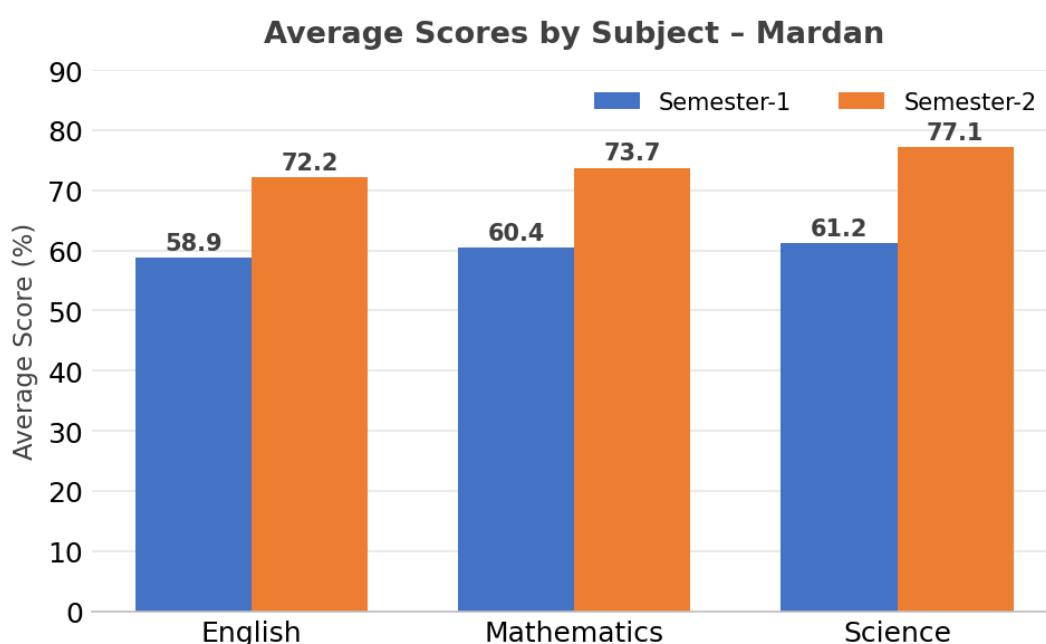


Figure 25: Average Scores by Subject – Mardan (Semester-1 vs Semester-2)

Overall, the analysis indicates improvements in learning outcomes across all three subjects and across the participating districts. However, the extent of improvement varied across student groups and districts, with Mardan and female students recording the largest gains and Kohat showing the most limited change highlighting differences in learning patterns across the participating schools.

Table 4: Percentage-Point Change by Group (Semester-1 → Semester-2)

Group	English	Mathematics	Science
Overall	+7.37	+7.33	+10.60
Female	+5.43	+6.60	+11.40
Male	+14.31	+10.51	+9.87
Haripur	+1.39	+3.17	+6.95
Kohat	+0.74	-0.46	+3.68
Mardan	+13.34	+13.32	+15.89

The district-level comparison reveals substantial variation in the magnitude and direction of change across the three districts. Mardan recorded the largest increases across all three subjects, while Kohat showed more limited changes, including a small decline in Mathematics. Haripur also recorded positive changes across all three subjects, although these were smaller than those observed in Mardan. The variation suggests that aggregate results can mask important district-level differences and demonstrates the potential value of disaggregated SBA data for identifying areas requiring further investigation and targeted academic support. However, the available data do not establish the reasons for these differences; further analysis incorporating school characteristics, student composition, assessment participation and implementation factors would be required.

6.4 Key Implications

The comparative analysis demonstrates the value of SBA data in making differences in student performance visible across subjects, student groups and districts. Such disaggregated evidence can provide a basis for identifying areas requiring further investigation and for targeting instructional, remedial and professional

support. At this stage, however, the results should be regarded as emerging evidence from successive assessment rounds rather than as evidence of causal learning impact. Strengthening longitudinal student tracking, data completeness and the use of comparable assessment measures will be important for enabling the SBA system to generate stronger evidence on learning trends over time.

7. Limitations and Interpretation of Findings

The first two SBA assessment rounds provide useful evidence on the operationalisation of a standardised, digital assessment system and generate encouraging information on patterns of student performance. However, several limitations should be considered when interpreting the findings.

First, the analysis presented in this report is based on assessment records from three districts - Haripur, Kohat and Mardan, rather than the full population of summer-zone schools. The extent to which these districts and the students with valid assessment records are representative of the wider summer-zone population should therefore be considered when interpreting the findings and planning scale-up.

Second, the number of students with assessment records declined from 3,245 in Semester 1 to 2,123 in Semester 2. This reduction may reflect differences in participation, reporting completeness, student registration or record matching between the two assessment rounds. Further analysis is required to determine the reasons for the reduction and whether the students represented in the two rounds differ systematically.

Third, the Semester-1 and Semester-2 assessments were aligned with the academic calendar and assessed different sets of SLOs. Consequently, changes in average scores between the two rounds cannot be interpreted as direct measures of learning gains on the same competencies. The results should instead be regarded as indicative of patterns in assessment performance across successive curriculum-based assessments.

Fourth, the pilot was primarily designed to establish and operationalise the SBA system and to strengthen the availability of assessment information. The evaluation did not include a dedicated control group, a longitudinal impact design or sufficiently detailed measures of how teachers used assessment results to change classroom practice. It is therefore not possible to attribute changes in student performance directly to the SBA intervention.

Finally, the first two assessment rounds provide only an initial evidence base. Establishing whether SBA contributes to sustained improvements in student learning will require continued implementation, stronger data matching across assessment rounds, systematic monitoring of teacher use of assessment information, and longitudinal analysis using comparable assessment measures.

These limitations do not diminish the significance of the pilot. Rather, they highlight the next stage of development required to move from establishing a functioning assessment system to demonstrating its sustained contribution to instructional improvement and student learning.

8. Conclusion

The first phase of SBA in Khyber Pakhtunkhwa represents an important step towards establishing a more standardised, data-driven approach to understanding student learning. The introduction of a common academic calendar, curriculum-aligned item bank and digital assessment platform has enabled the collection of individual student-level assessment information through a consistent provincial mechanism, replacing fragmented and largely non-standardised assessment practices.

The principal achievement of the pilot is therefore not simply the administration of semester examinations, but the establishment of the infrastructure and processes required to create a continuous assessment cycle. With further development, SBA data can enable teachers to identify areas of student difficulty, support targeted remediation, and enable school and education managers to identify patterns of need and target instructional and professional support more effectively.

The first two assessment rounds show higher average performance across English, Mathematics and Science in Semester 2 compared with Semester 1. These findings are encouraging, but should be interpreted cautiously because the two rounds assessed different SLOs and the number of students with valid assessment records varied substantially between the two rounds. The available evidence therefore does not establish a causal relationship between the introduction of the SBA system and changes in student learning.

The next phase should focus on moving from system establishment to effective system use. This will require improving data completeness and student record matching, strengthening teachers' ability to interpret and act on assessment evidence, developing mechanisms for targeted remediation, and ensuring that school and district managers routinely use SBA information to guide academic support. At the same time, continued assessment across multiple cycles will create an increasingly valuable longitudinal evidence base for understanding student learning trends.

With these refinements, SBA can evolve from a standardised assessment mechanism into an integrated component of KP's teaching and learning system, one that connects curriculum expectations, classroom assessment, instructional response, professional support and education-sector decision-making. A phased expansion to winter-zone schools, accompanied by continued monitoring and stronger evaluation, would provide an appropriate next step towards institutionalising this approach across the province.

9. Recommendations

Based on the findings from the implementation and analysis of the results, the following recommendations are proposed to strengthen the effectiveness, sustainability, and future scale-up of the online SBA system in Khyber Pakhtunkhwa.

9.1 Immediate Priorities (Next 12 Months)

Extend SBA to Winter-Zone Schools through a Phased Rollout

Building on the summer-zone experience, E&SED and DCTE should extend the SBA model to winter-zone schools after the winter break through a phased rollout. Expansion should be guided by predefined readiness criteria, including teacher preparedness, portal functionality, connectivity and infrastructure availability, and data quality, with early consolidation in districts that have demonstrated strong implementation.

The first phase of expansion should also be used to test and refine the system based on lessons from the summer-zone implementation, rather than simply replicating the existing model at larger scale.

Institutionalise Semester-Based SBA within the Academic Calendar

E&SED and DCTE should institutionalise the SBA model by issuing a provincial implementation calendar before the start of the next academic year. The calendar should specify semester assessment schedules, data-entry timelines, reporting responsibilities, and review mechanisms for schools, districts and the province, to ensure consistent implementation across all participating schools.

Strengthen Teachers' Capacity to Use Assessment Evidence for Instructional Improvement

DCTE should design and deliver SBA-related teacher training that focuses not only on portal use and data entry but also on interpreting results and using assessment evidence to inform lesson planning, differentiated instruction and remedial support. Refresher training and school-based mentoring should be conducted within the first term following implementation to reinforce these practices.

Introduce Structured Remedial Support Based on SBA Findings

DCTE should develop and disseminate a standard package of remedial teaching resources, including lesson plans and worksheets, aligned with the lowest-performing subjects and SLOs identified through SBA. Schools should be encouraged to implement these remedial activities following each assessment cycle.

9.2 Medium-Term Priorities (1–3 Years)

Strengthen Data Quality Assurance and Completeness of Reporting

DCTE and district education offices should establish standard quality-assurance procedures to improve the completeness and accuracy of SBA data, particularly the matching of student records across semesters. These should include mandatory submission timelines, automated validation checks within the portal, and district-level verification against enrolment records to minimize missing or unmatched records.

Establish Continuous Technical and Academic Support Mechanisms

DCTE should designate district-level SBA focal persons to provide ongoing technical assistance, troubleshoot portal-related issues, support schools in data management, and guide teachers in interpreting assessment findings and planning instructional responses.

Develop District- and School-Level Performance Dashboards

E&SED and DCTE should develop performance dashboards that present SBA results at school, district and provincial levels in an accessible format. Dashboards would enable managers and school leaders to monitor learning trends over time, identify underperforming areas, and target support and resources accordingly.

Integrate SBA Evidence into Teacher Professional Development

Assessment findings should be systematically used to identify common instructional challenges and inform the design of teacher professional development programmes. DCTE should integrate SBA evidence into teacher mentoring, coaching and continuous professional development so that training priorities are directly linked to classroom learning needs.

9.3 Long-Term System Strengthening (3–5 Years)

Institutionalise Evidence-Based Teaching and Learning

The SBA model should be embedded within KP's broader teaching and learning strategy by integrating assessment data into academic supervision, teacher appraisal, mentoring and professional development systems. This will ensure that classroom assessment routinely informs instructional improvement and teacher support, rather than serving solely as a reporting mechanism.

Evaluate Long-Term Impact and Cost-Effectiveness

E&SED and DCTE should commission periodic evaluations to assess the long-term impact of the SBA model on teaching practices and student learning outcomes. Future studies should also examine implementation fidelity, sustainability and cost-effectiveness to inform policy decisions on province-wide institutionalisation and future investment.

Establish a Longitudinal Learning and Evaluation Framework

E&SED and DCTE should establish a longitudinal framework for monitoring student learning across successive SBA cycles. The framework should include mechanisms for maintaining consistent student identifiers, tracking students across assessment rounds, incorporating common SLOs/items where appropriate, and analysing changes in performance over time. Future evaluations should also examine the extent to which teachers use SBA evidence to adapt instruction and provide remediation. This will allow the province to move beyond monitoring assessment participation and performance towards generating stronger evidence on whether SBA contributes to sustained improvements in teaching practice and student learning.

