

EXAM ANALYSIS REPORT 2020



PUNJAB EXAMINATION COMMISSION [PEC]

PEC Exam Analysis Report 2020

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Abbreviations/Acronyms

AEO	Assistant Education Officer
APF	Assessment Policy Framework
CEO (Edu)	Chief Executive Officer (Education)
CRQs	Constructed Response Questions
CTSC	Cluster Training & Support Centre
DEAs	District Education Authorities
MCQ	Multiple Choice Question
OEMS	Online Exam Management System
OSRS	Online Student Registration System
PEC	Punjab Examination Commission
PEF	Punjab Education Foundation
PMIU	Programme Monitoring and Implementation Unit
QAED	Quaid-e-Azam Academy for Educational Development
SBA	School Based Assessment
SED	School Education Department
SLO	Student Learning Outcome

Executive Summary

Govt. of the Punjab has restructured the examination system at elementary level. In December 2019, School Education Department (SED), Govt. of the Punjab, has approved Assessment Policy Framework (APF), based on “The New Deal 2018-2023” a multifaceted reforms program catering to key issues like access, retention, incorporation of ICT tools, learning outcomes, teachers' training, infrastructure and provision of basic & learning facilities.

The New Deal 2018-2023 aim to expand the concept of assessment as it is currently being understood in our system. SED seeks to redefine assessments as a whole-system process through which feedback is obtained on student and teacher performance. Specifically, School Based Assessment (SBA) for students' assessment, Large Scale Assessment (LSA) for feedback to system and formative assessments that can be adjusted in response to student comprehension during the learning process. They will not be used to rank children or hold them back in primary years.

In March Punjab Examination Commission (PEC) conducted first SBA and in February 2020, last annual exam for grade 8. Now PEC has gathered the details of exam related activities from registration of the students to compilation of the results and has analyzed the data obtained from PEC exams 2020 in a document, PEC Exam Analysis Report 2020. This report presents student achievement in grade 8 exams of PEC on different variables and some details on SBA of Grade 5. This year more than 1 million students registered in PEC exams of grade 8. The registered students were from public schools, private schools and private candidates from the 36 districts of Punjab. It is important to mention here that PEC exams were mandatory for the students of grade 8 of all public schools while discretionary for students of private schools and private students in the province of Punjab. Like every year, candidates were assessed in five basic subjects i.e. English, Urdu, Mathematics, Science and Islamiyat/ (Ethics was an optional subject for Non-Muslim students) in grade 8. Four different versions were developed for each of the subjects with same difficulty and cognitive level of test items. To accommodate the students of both Urdu and English medium schools in PEC exams, the exam papers of Mathematics, Science, Islamiyat and Ethics were bilingual. The analysis was carried out on different variables to draw conclusions on achievement mean score of the students. For grade 8, the trend of overall performance showed that Islamiyat was again the highest score achieving subject followed by Urdu, Ethics, English, Mathematics, and Science with mean scores ranging from 76% to 53%. Overall students performed better on MCQs (75% mean score) than CRQs (49.5% mean score). It was also observed that language of the exam and version of the paper received during exam had insignificant effect on the performance of students. Overall girls scored slightly better mean score (percentage) than boys in all subjects except Mathematics where, both (girls and boys) scored equal mean percentage (56%). Overall subject wise, students from rural areas performed better than that of the urban areas in all subjects except Ethics. Overall, the students belonging to district Rajanpur and Vehari performed at a higher level resultantly both districts got first position in all of the 36 districts in Punjab with a mean score of 71%, followed by Khanewal and Muzaffargarh with the mean scores of each 70% respectively. Rawalpindi, Jhelum and Lahore with mean score 56%, 57% and 58% respectively are placed at the lowest three positions in grade 8 PEC exams 2020

Tariq Iqbal
Chief Executive Officer, PEC

Scale of Exams 2020

In PEC exam 2020 a total of 1,086,332 students of grade 8 were registered using Online Student Registration System (OSRS) from the whole province. Out of which 1,060,640 students appeared in the exams and 926,222 students passed the exams effectively, which makes 87.33 pass percentage (candidates who obtained 33% marks were considered pass). A detailed summary of registered, appeared and passed students of grade 8 along with pass percentage is shown in **Table 1: Summary of Students and Results of Grade 8 (2020)**

<i>Student Information - Grade 8</i>					
Type	Gender	Registered	Appeared	Passed	*Pass%
Private Registered Candidates	Male	26,299	24,757	18,716	75.60
	Female	19,732	18,750	14,001	74.67
Public School Students	Male	401,268	392,295	344,557	87.83
	Female	394,132	387,461	337,383	87.08
Private School Students	Male	124,438	120,113	106,670	88.81
	Female	120,463	117,264	104,895	89.45

PEC completed this vast activity with the help of staff deployed who performed different duties in conduct and marking of exams, from the SED using an online system named Online Employee Management System (OEMS). Number of exam centres and summary of staff deployed to conduct exam 2020 of grade 8 in the province of Punjab is given in following table.

Table 2: Exam Centres and Staff deputed to conduct PEC Exam (2020)

<i>Exam Centres and Staff</i>	<i>Total</i>
Exam Centers	6,233
CTSC Heads	1,926
Resident Inspectors	5,748
Superintendents	6,224
Dy. Superintendents	6,201
Invigilators	35,751
Class-IV	5,794

For marking of PEC exams a total of 705 marking centres were established at Tehsil level. In each marking center head examiners and sub examiners followed keys and rubrics developed by subject specialists at PEC and syndicate marking scheme, IT teachers entered online data of marks; they all worked under head examiners and CTSC heads. Summary of marking staff deployed in PEC exam 2020 activity is shown in Table 3.

Table 3: Marking staff deployed in marking of PEC exam 2020

	<i>Grade 8</i>
Marking Centers	705
Head Examiners	1,134
Sub Examiners	12,168
IT Teachers	141
Assistants	1,134

Performance of Students in PEC Exams 2020

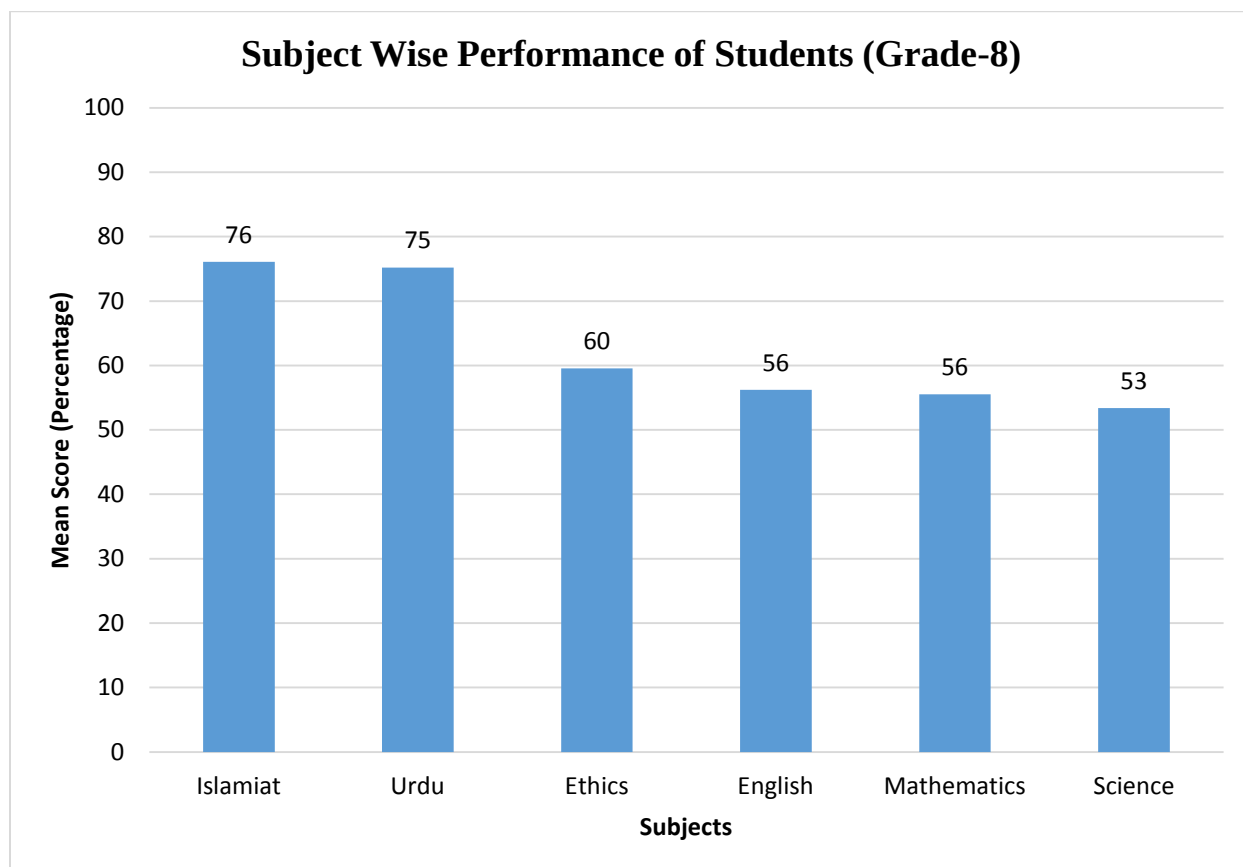
This section comprises of the performance of students in Grade 8 exams.

Grade 8 Key Findings:

- The trend of subject wise students achievement score (%) is;
 - Islamiyat*, Urdu, Ethics, English, Mathematics, Science with 76%, 75%, 60%, 56%, 56% and 53% mean scores respectively.
- The trend of subject wise performance on MCQs is;
 - Islamiyat, Urdu, Mathematics, Science, Ethics and English, with 85%, 84%, 72%, 69%, 67% and 65% mean scores respectively.
- The trend of subject wise performance on CRQs is;
 - Urdu, Ethics, Islamiyat, English, Mathematics, and Science with 67%, 52%, 52%, 48%, 40% and 39% mean scores respectively.
- Overall students performed better on MCQs (75% mean score) than CRQs (49% mean score) portion.
- Overall girls scored slightly better mean score (percentage) than boys in all subjects except Mathematics where, both (girls and boys) scored equal mean percentage (56%).
- Trend of overall performance of students by type of their registration is;
 - Students from private schools >Students from Public schools >and Private registered Students.
- Overall subject wise, students from rural areas performed better than that of the urban areas in all subject except Ethics.
- Overall, the students belonging to District Rajanpur and Vehari performed at a higher level resultantly both districts got first position in all of 36 Districts in Punjab with a mean score of 71%, followed by Khanewal and Muzaffargarh with the mean scores of each 70% respectively. Rawalpindi, Jhelum and Lahore with mean score 56%, 57% and 58% respectively are placed at the lowest three positions in grade 8 PEC exams 2020.

*Marks for Nazra Quran portion (max=40%) are included in the overall mean percentage of students.

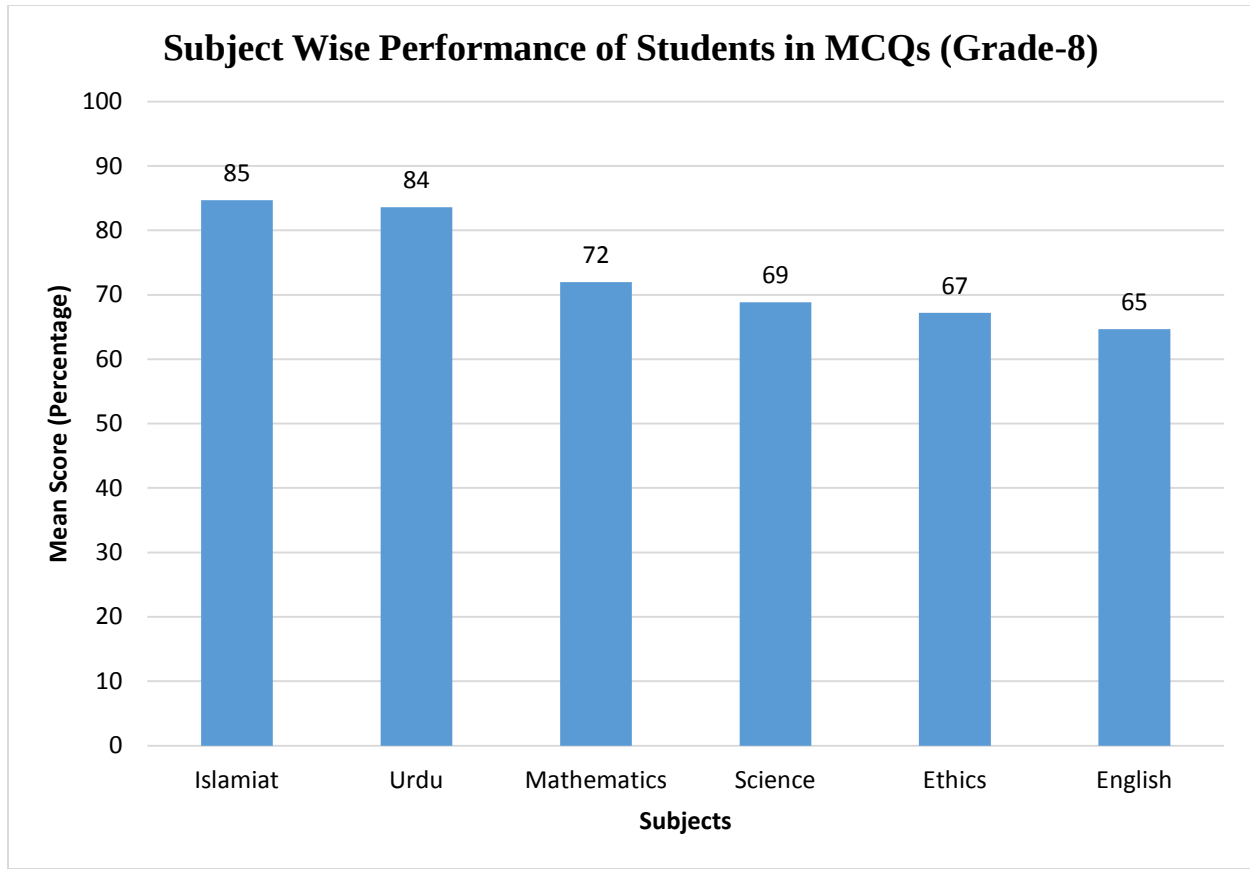
Performance of Students in Grade 8 in PEC Exams 2020



Graph 1: Subject wise mean achievement score (%) of students (Grade 8)

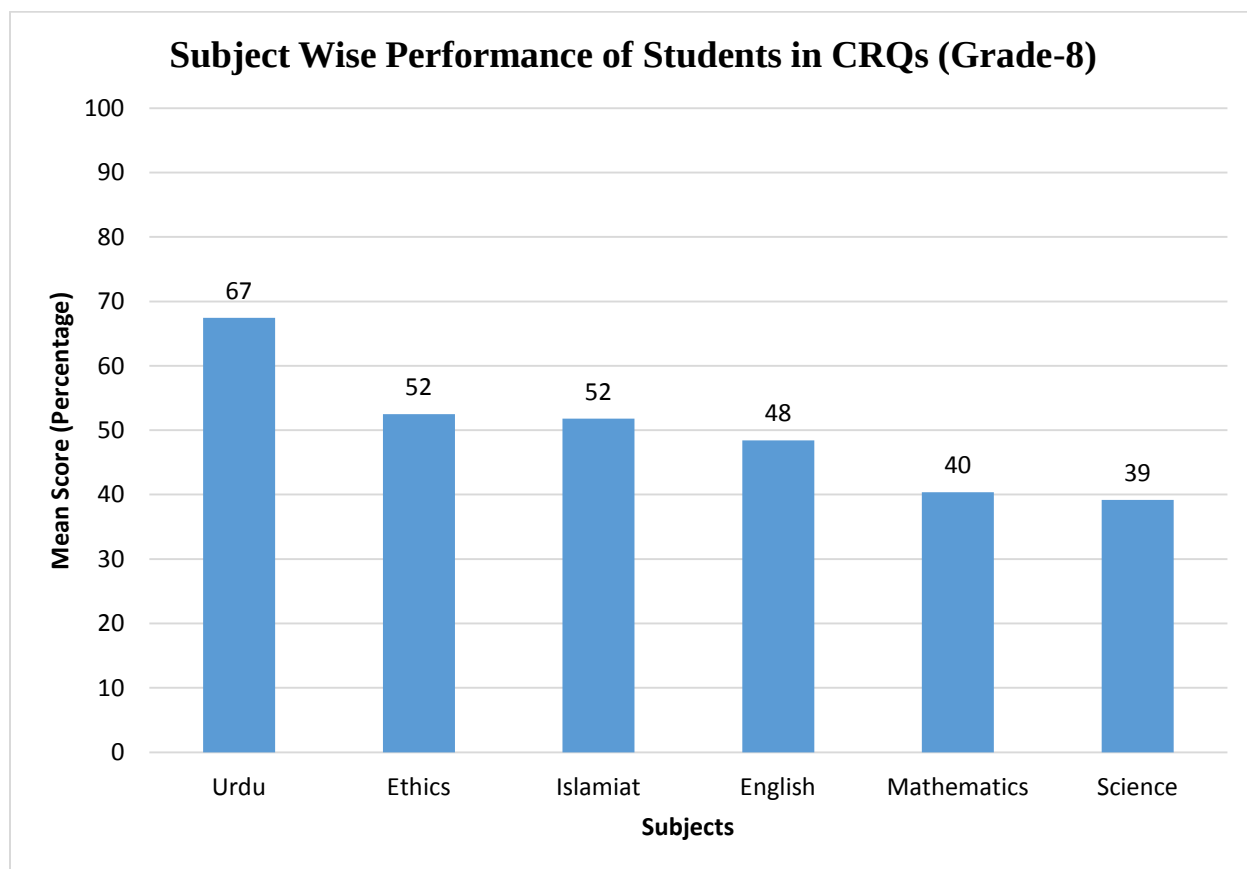
Graph 1 presents the graphical description of the subject wise overall performance of students in grade 8. The result indicates that the students performed better in the subject of Islamiyat and scored the highest mean score which was 76%. Marks of “Nazra” were also included in the total marks of “Islamiyat”. Students also performed better in the subject of Urdu and scored the second highest mean score of 75%. A little bit difference could be observed in the performance of students in the subjects of Ethics, English, Mathematics and Science with mean scores 60%, 56%, 56% and 53% respectively.

*Marks for Nazra Quran portion (max=40%) are included in the overall mean percentage of students.



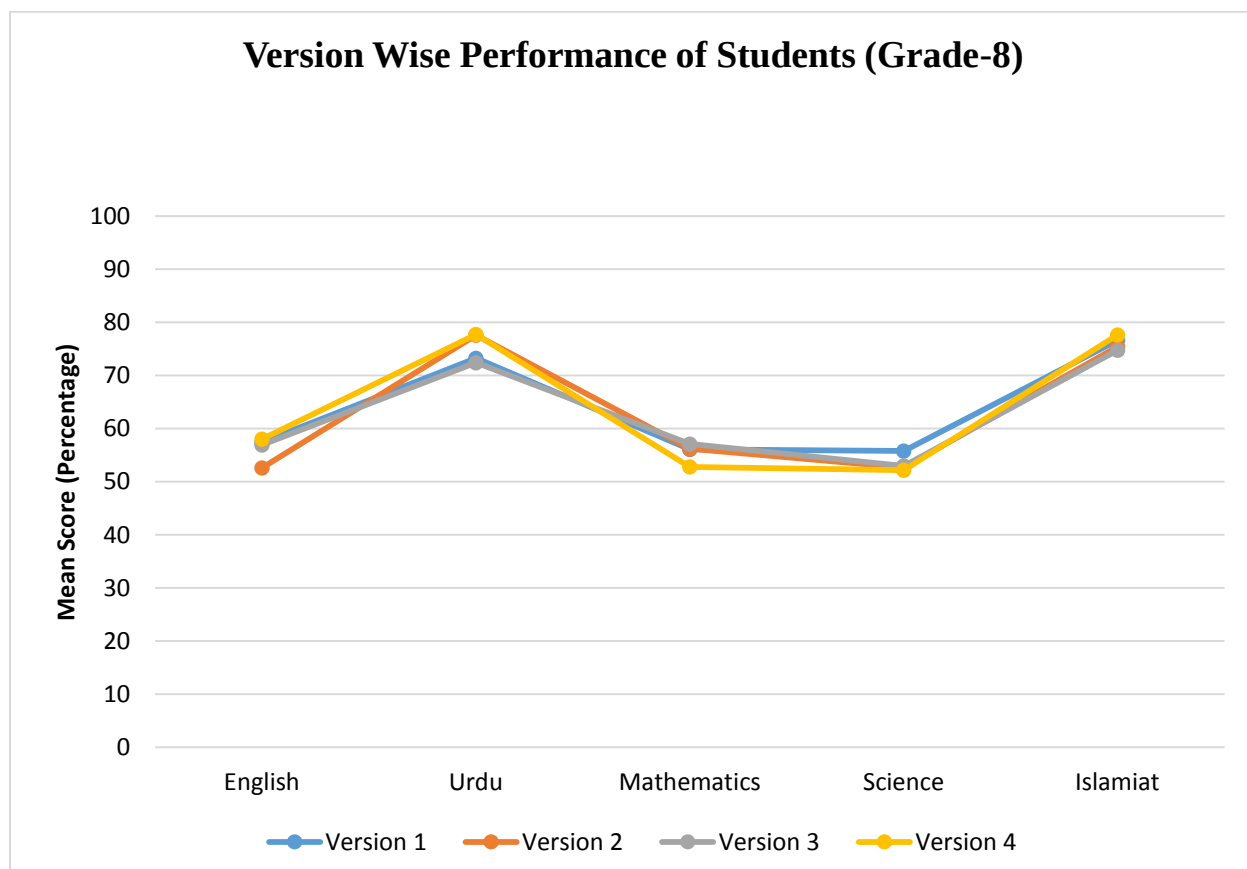
Graph 2: Subject wise mean achievement score (%) of students in MCQs (Grade 8)

Graph 2 shows the subject wise performance of students in MCQs portion at grade 8 level in PEC exams 2020. The result indicates that the students scored more than 70% mean score in the subjects of Islamiyat, Urdu and Mathematics i.e. 85%, 84% and 72% mean score respectively. While in the subjects of Science, Ethics and English, the students scored 69%, 67% and 65% mean score respectively. The lowest mean score in MCQs portion was observed in the subject of English.



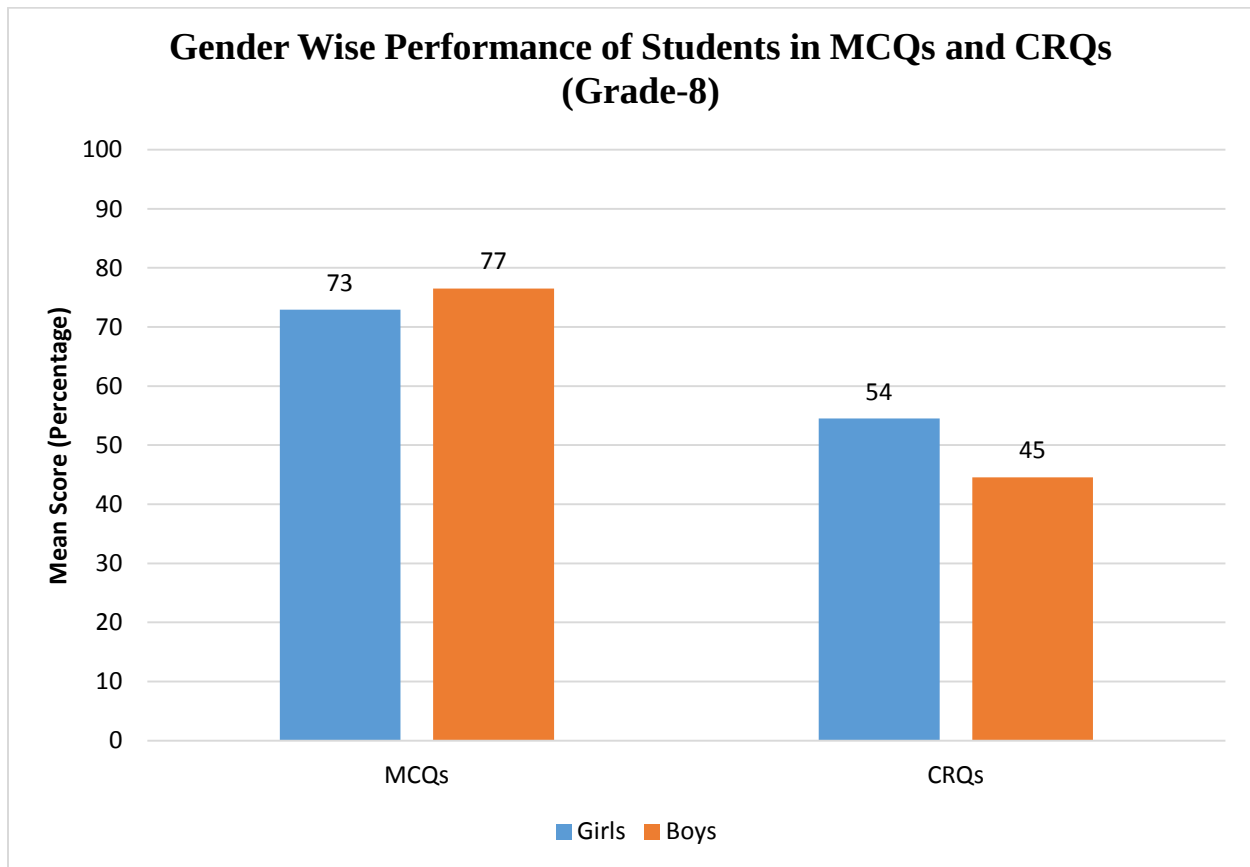
Graph 3: Subject wise mean achievement score (%) of students in CRQs (Grade 8)

Graph 3 shows the subject wise performance of students in CRQs portion at grade 8 level in PEC exams 2020. The graph exhibits the students' better performance in the subject of Urdu followed by the subjects of Ethics, Islamiyat, English, Mathematics and Science with 67%, 52%, 52%, 48%, 40% and 39% mean scores respectively in CRQs portion.



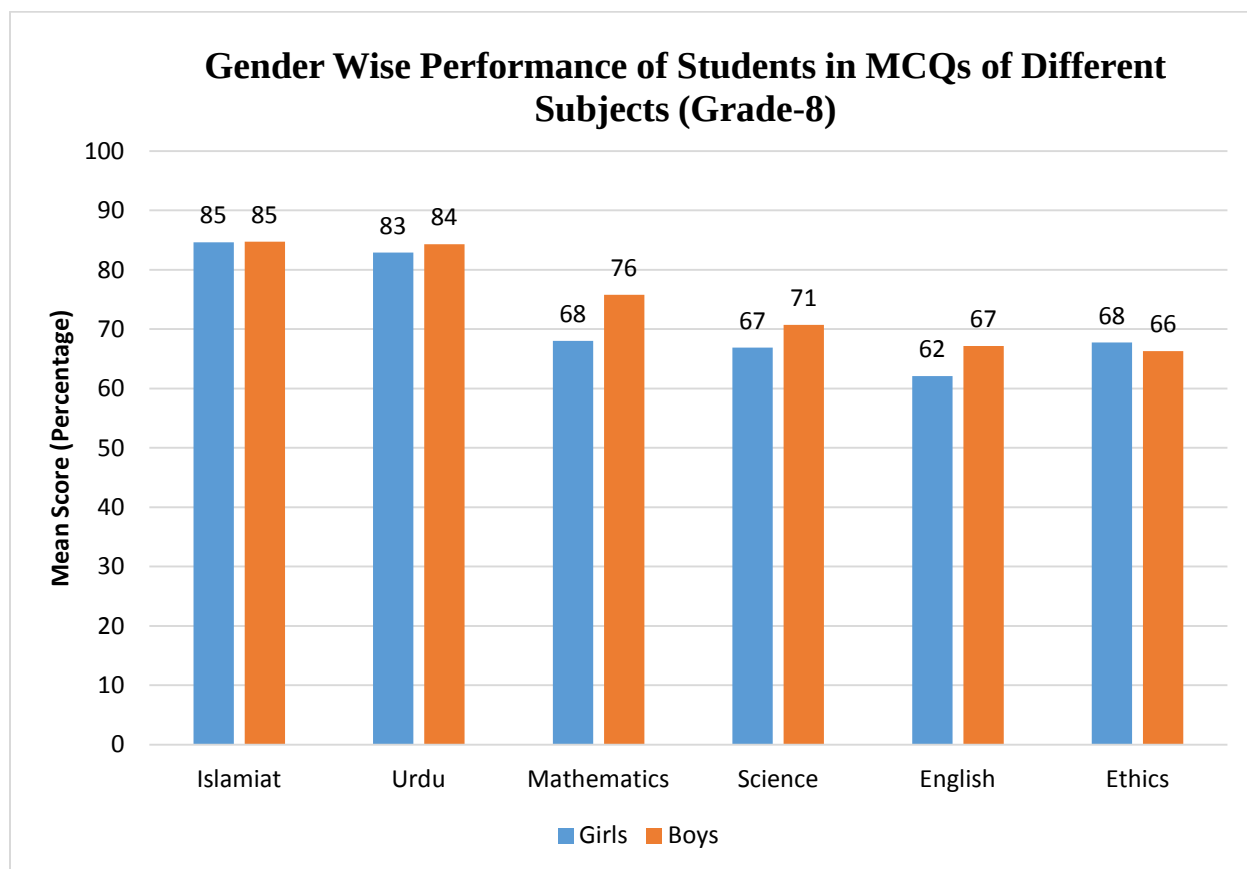
Graph 4: Version wise performance of students (Grade 8)

The performance of students in all subjects across four versions of grade 8 exams is shown in Graph 4. All the four versions of each of the subjects were aligned with each other on the basis of cognitive level and SLOs. The achievement of the students in all versions of each of English, Urdu, Mathematics, Science and Islamiyat subject is more or less similar. It is the evident that versions of each subject are equated and marking of papers is reliable.



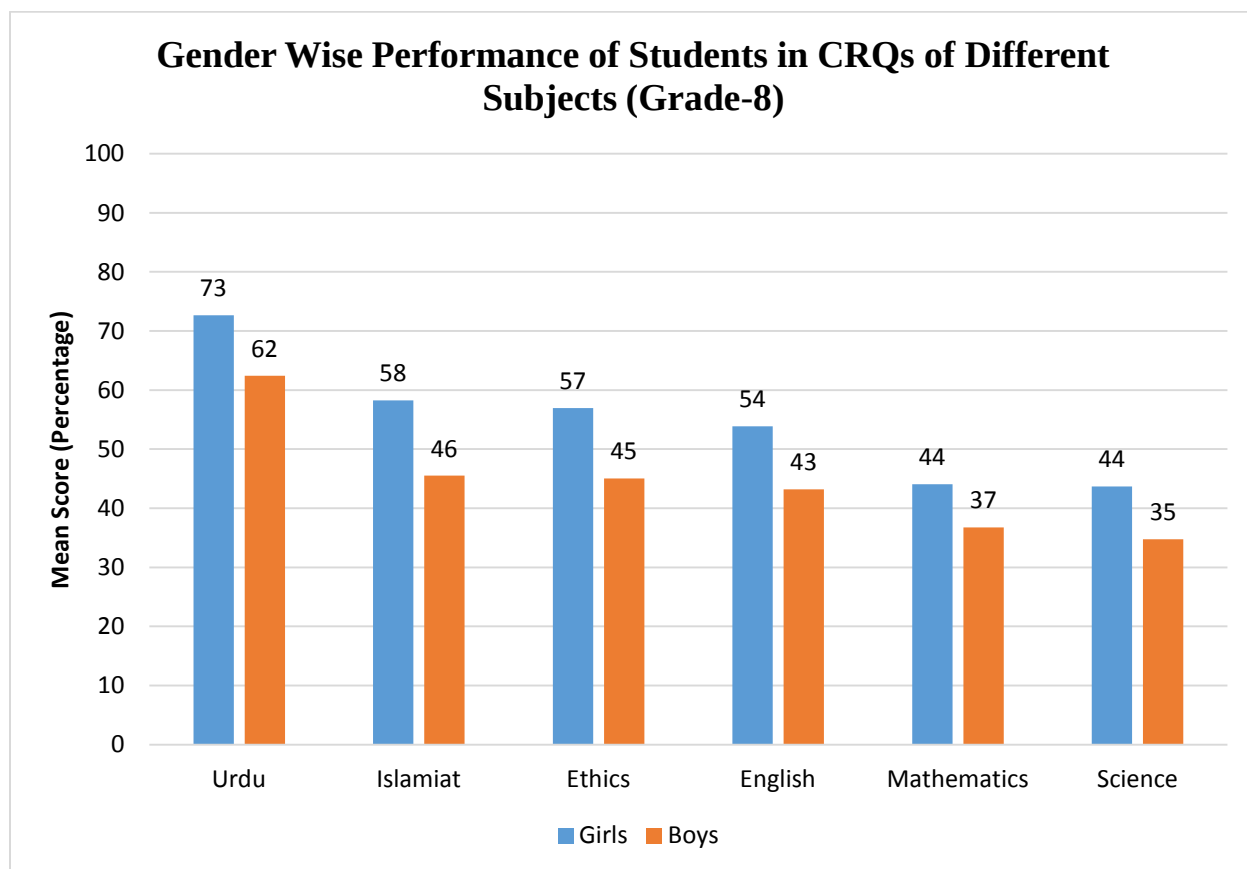
Graph 5: Gender wise mean achievement score (%) of students in MCQs and CRQs (Grade 8)

Analysing the performance of boys and girls in PEC exams 2020 at grade 8 level depicts that boys performed better with mean score 77% as compared to girls with mean score 73% in MCQs portion. However, the girls had a higher mean score of 54% as compared to the boys mean score in CRQs portion which was 45%.



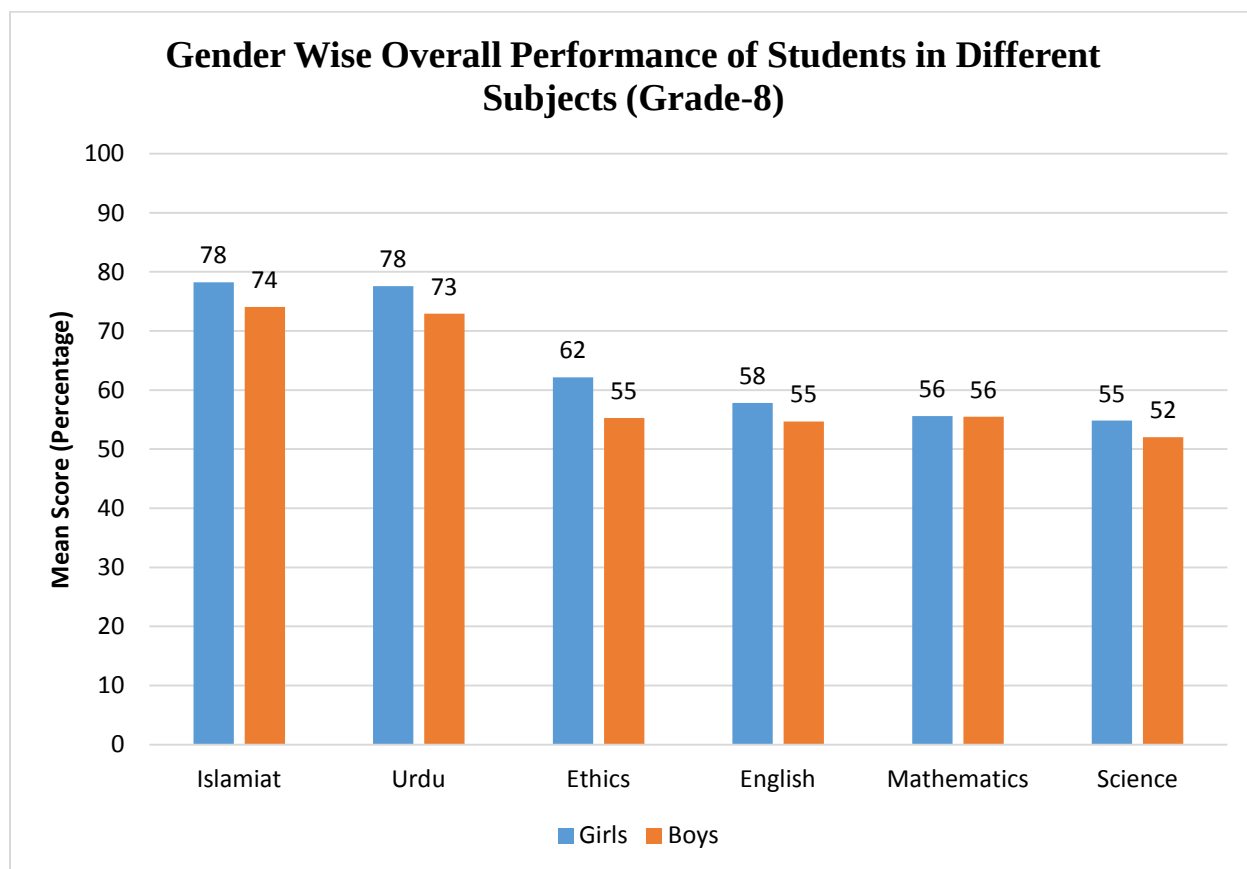
Graph 6: Subject-wise mean achievement score (%) in MCQs by gender (Grade 8)

Graph 6 shows that the mean scores for each gender in MCQs were same (85%) in the Islamiyat. It can be seen in the graph above, that the boys performed better than girls in the subjects of Urdu, Mathematics, Science and English with a mean scores of 84%, 76%, 71% and 67% respectively while girls scored 83%, 68%, 67% and 62% mean scores in these subjects respectively. The girls performed slightly better in Ethics with a mean score of 68% as compared to boys with mean scores 66%.



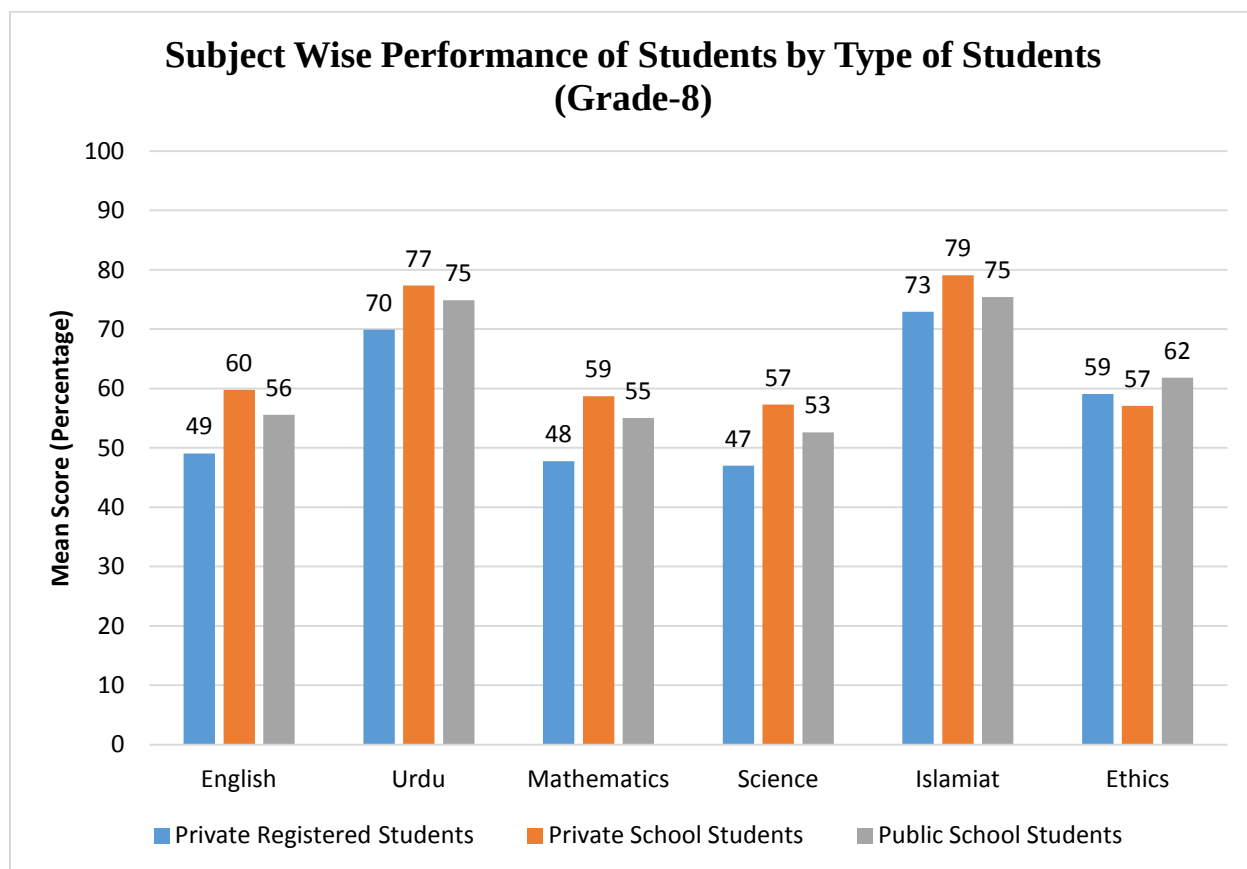
Graph 7: Gender wise performance of students in CRQs of all subjects (Grade 8)

Graph 7 represents the performance of boys and girls in CRQs of all subjects in grade 8. It is evident that the girls showed better performance in CRQs portion of all six subjects.



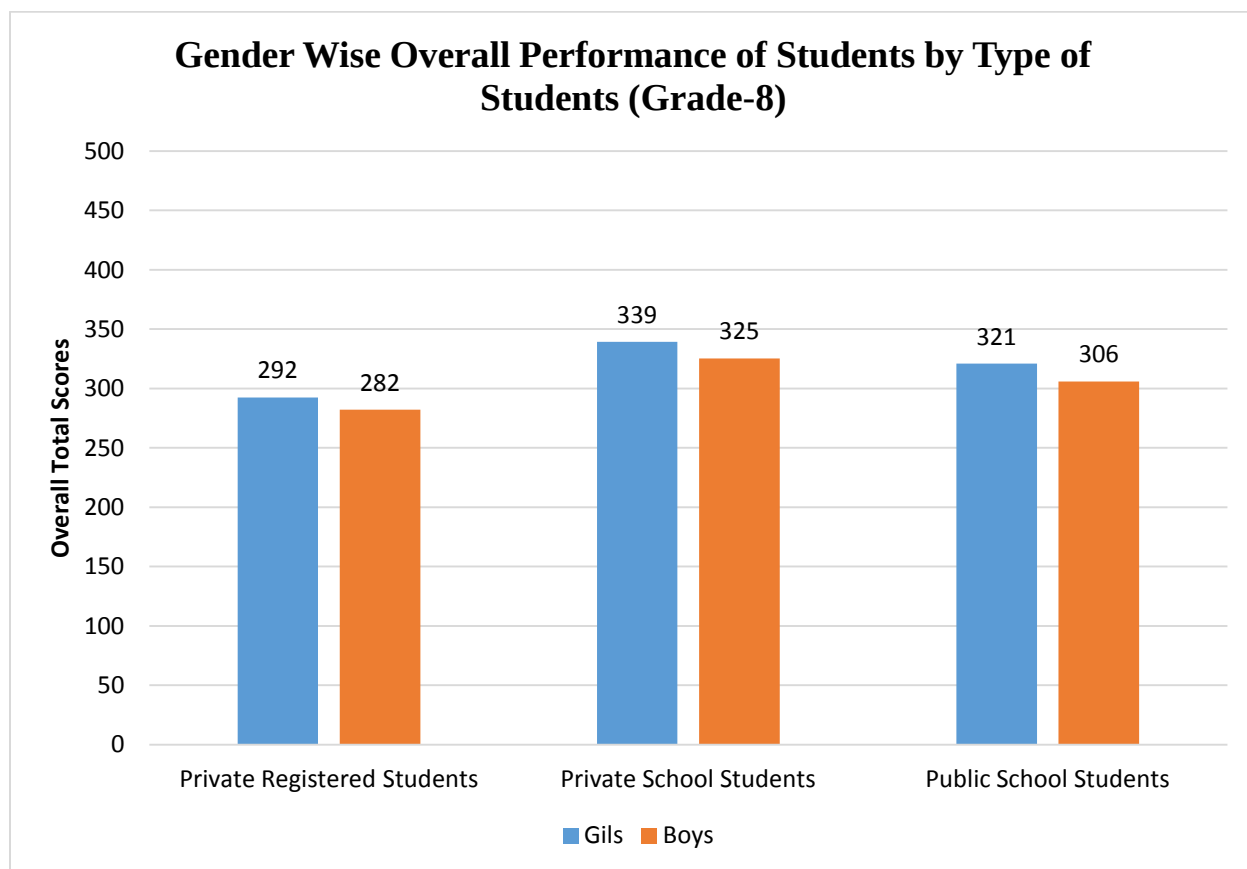
Graph 8: Gender wise overall performance of students in all subjects (Grade 8)

Graph 8 presents the results of gender wise overall performance of students in all subjects of grade 8. Across all the subjects except for Mathematics, girls scored slightly better mean scores than boys. The result showed that the gap in mean scores between boys and girls performance were the highest for the subject of Ethics (7%) and the lowest for both Science (3%) and English (3%) whereas zero for Mathematics.



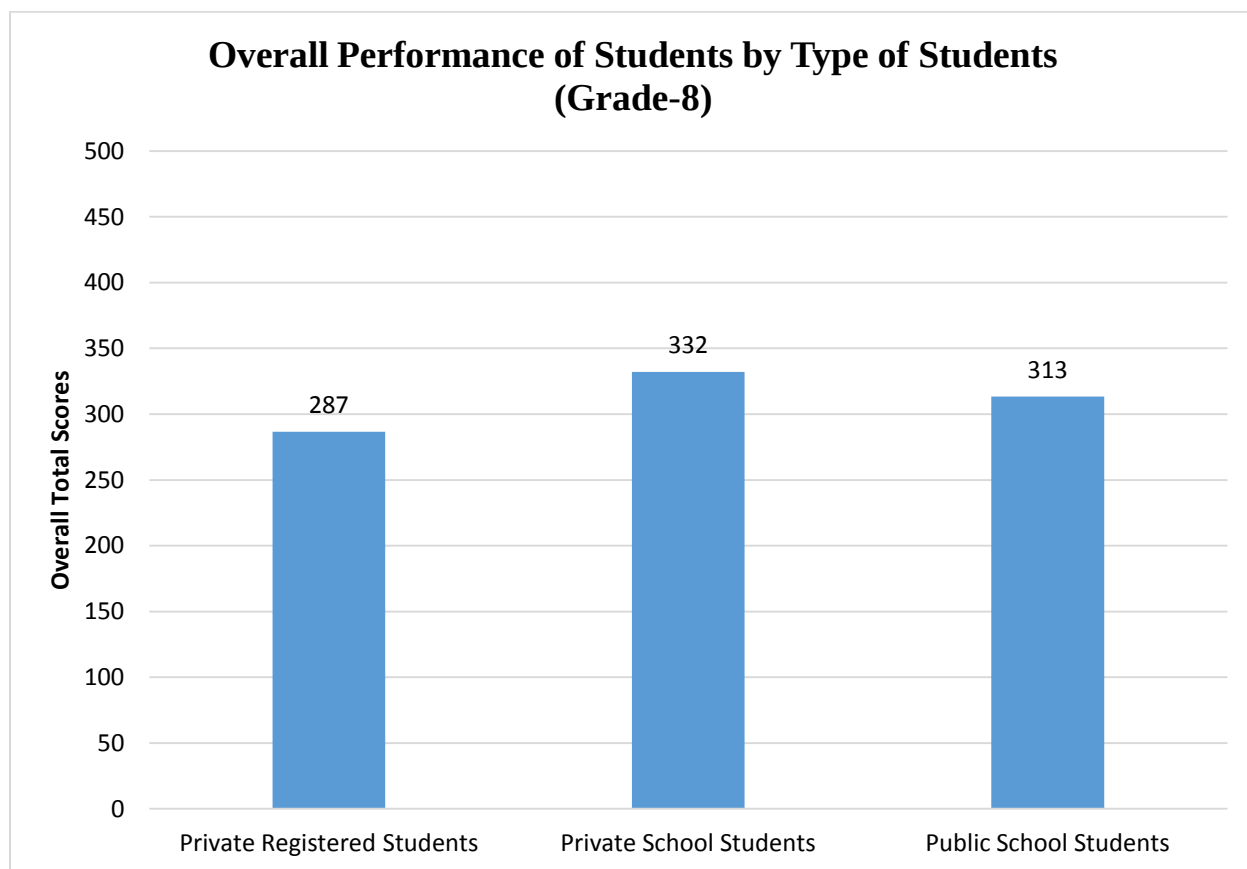
Graph 9: Subject wise performance of students by type of students (Grade 8)

Comparative graphical analysis regarding performance of students in all six subjects among types of students based on their mode of registration in PEC exams as public school students, private school students and private registered students is shown in Graph 9. The result indicates that students from private school performed slightly better than public school students and private registered candidates in all of the subjects except for “Ethics” whereas public school students performed better than private registered students.



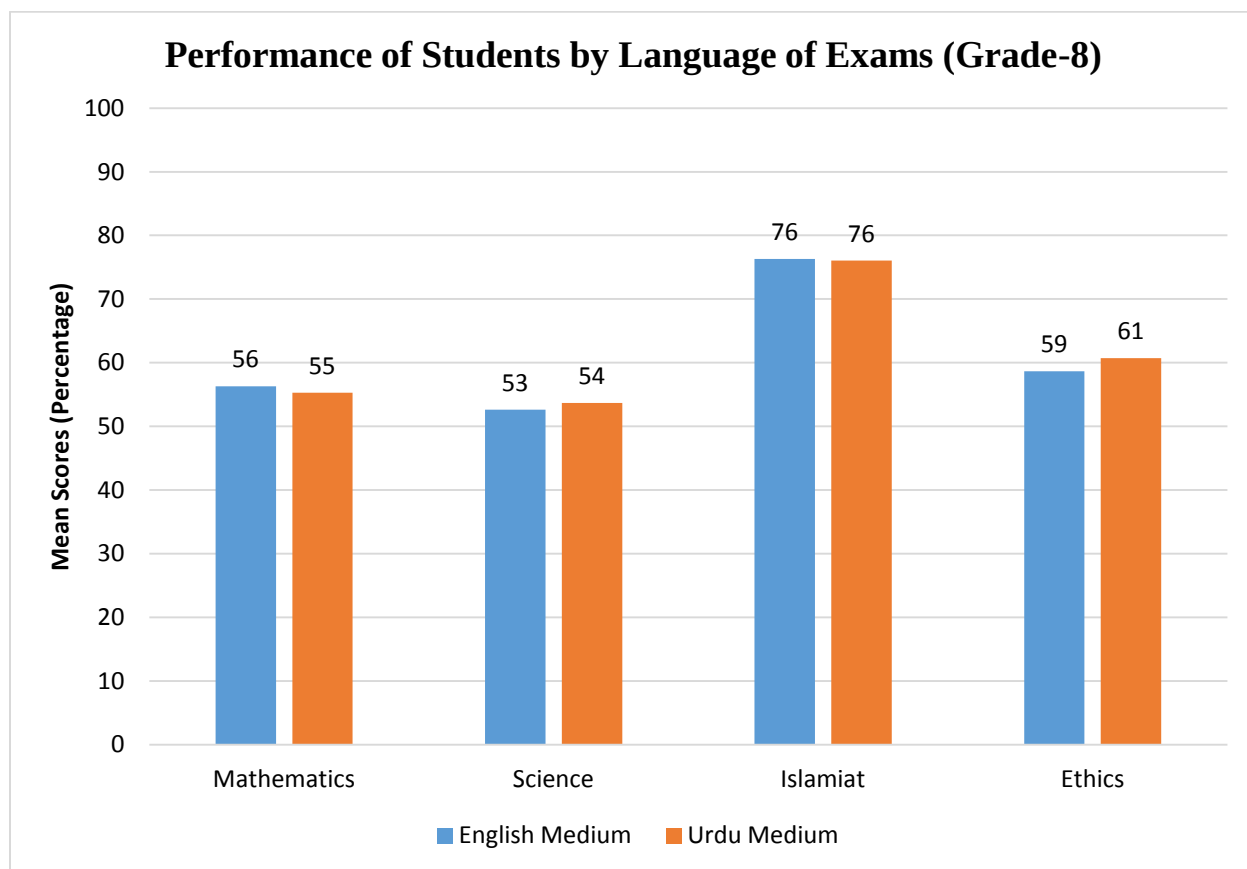
Graph 10: Gender wise performance of students by type of students (Grade 8)

Graph 10 shows the comparison of overall performance of boys and girls from public schools, private schools and private registered students in terms of mean score out of 500. Gender wise, girls have performed better than boys in all types of students. It can be seen from the above graph that students belonging to private schools did better and achieved higher mean scores, i.e. 325 for boys and 339 for girls followed by 306 for boys and 321 for girls from public schools. The performance of private registered students was found the lowest with the mean score of 282 for boys and 292 for girls.



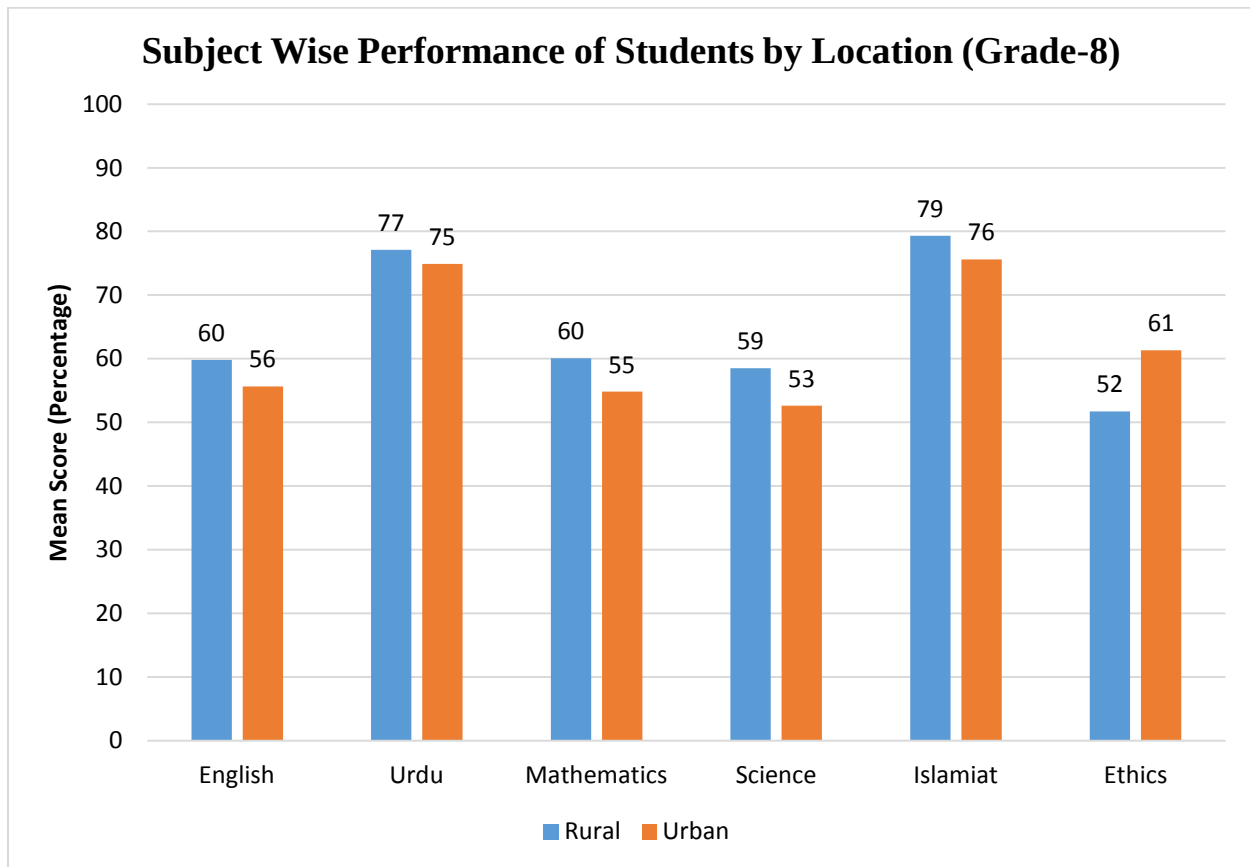
Graph 11: Overall performance of students by type of students (Grade 8)

Graph 11 indicates the differences in overall performance of students in different categories of students on the basis of their registration in PEC exams 2020. It can be observed that students from private schools achieved good score (332 out of 500) as compared to the students of public schools (313 out 500) and private registered students (287 out of 500) respectively.



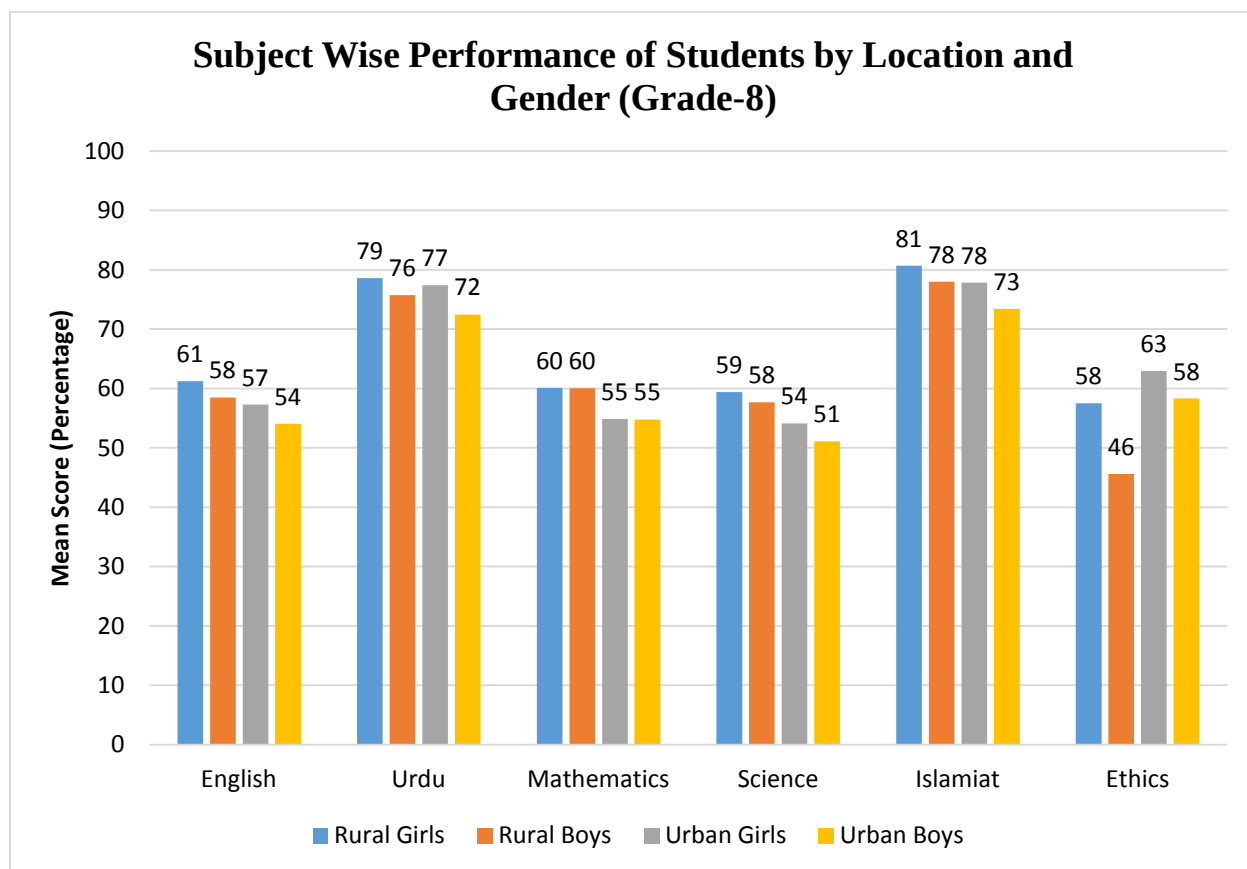
Graph 12: Performance of students by language of exams (Grade 8)

The performance of students in bilingual exams of grade 8 is shown in Graph 12. It is shown that the performance of students from both English and Urdu medium schools is almost same. So the language of exam does not affect the performance of students.



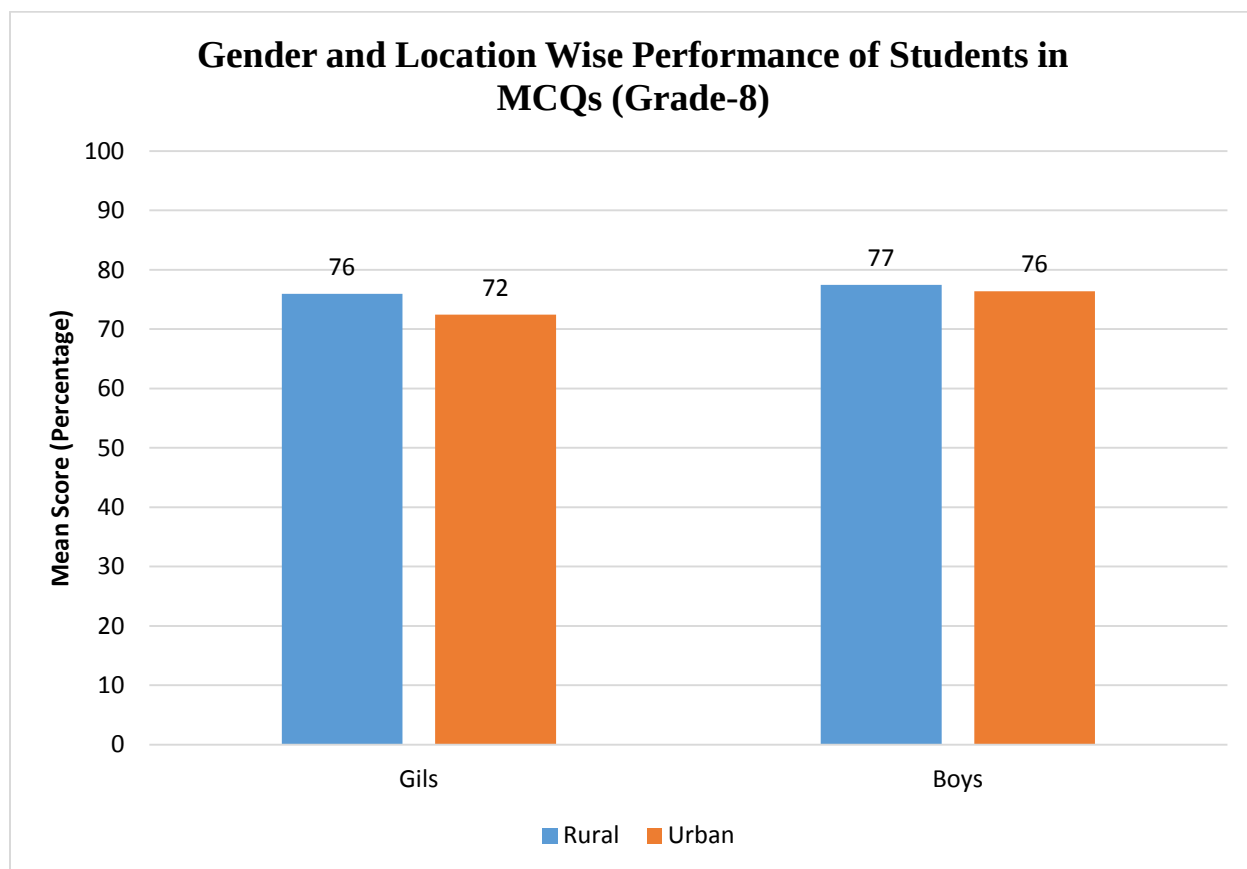
Graph 13: Subject wise performance of students by location (Grade 8)

Graph 13 represents the subject wise performance of the students by location in grade 8. It can be observed that students from rural areas performed better as compared to students from urban areas in all subjects except in the subject of Ethics.



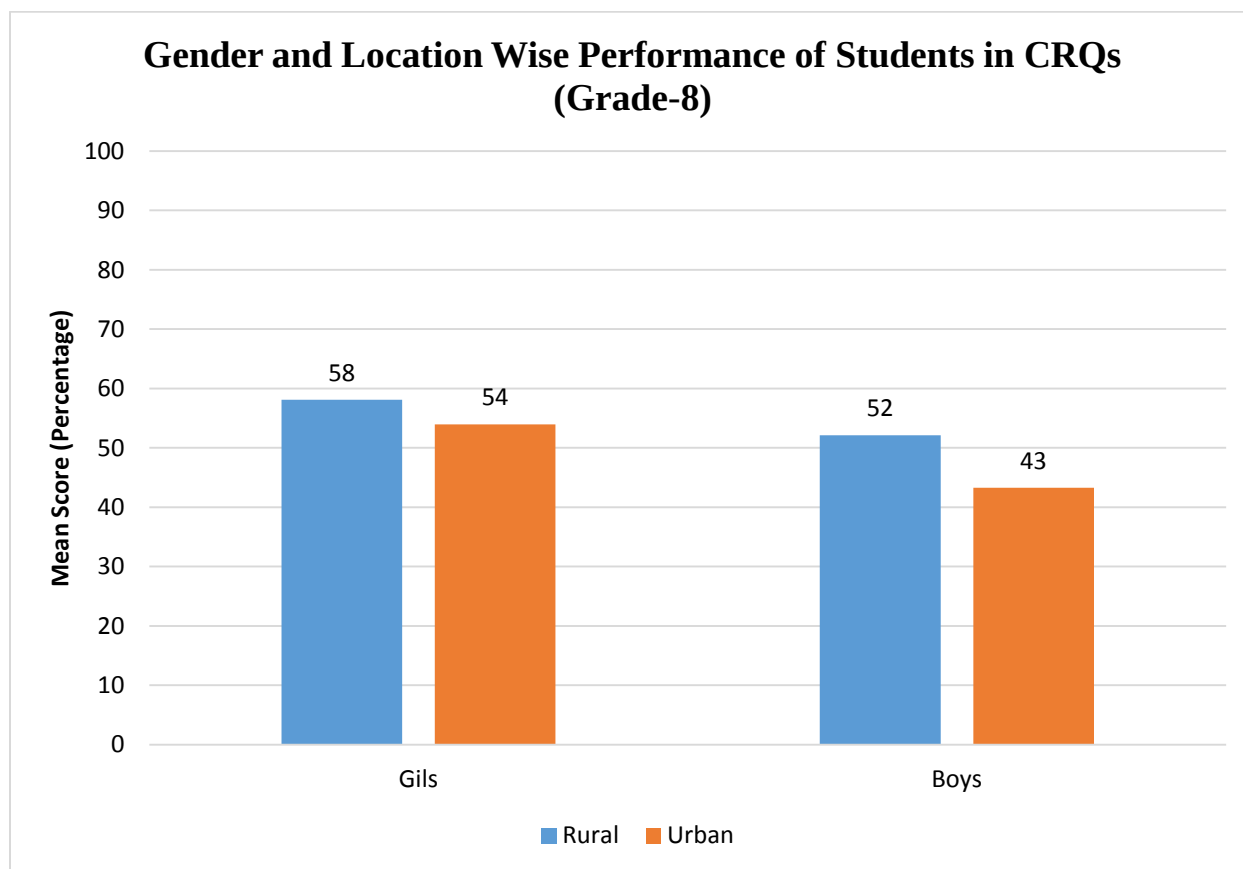
Graph 14: Subject wise performance of students by location and gender (Grade 8)

Graph 14 is a graphical representation of the mean scores of the students at grade 8, analyzed on the basis of location and gender in all six subjects. The result indicates that the mean score of students was exhibit a quite similar pattern across different subjects except Ethics. It can be observed from the graph that rural girls performed better and achieved slightly higher or equal mean score than others in all the subjects except Ethics. Generally students from rural areas scored better mean score than that of the urban areas.



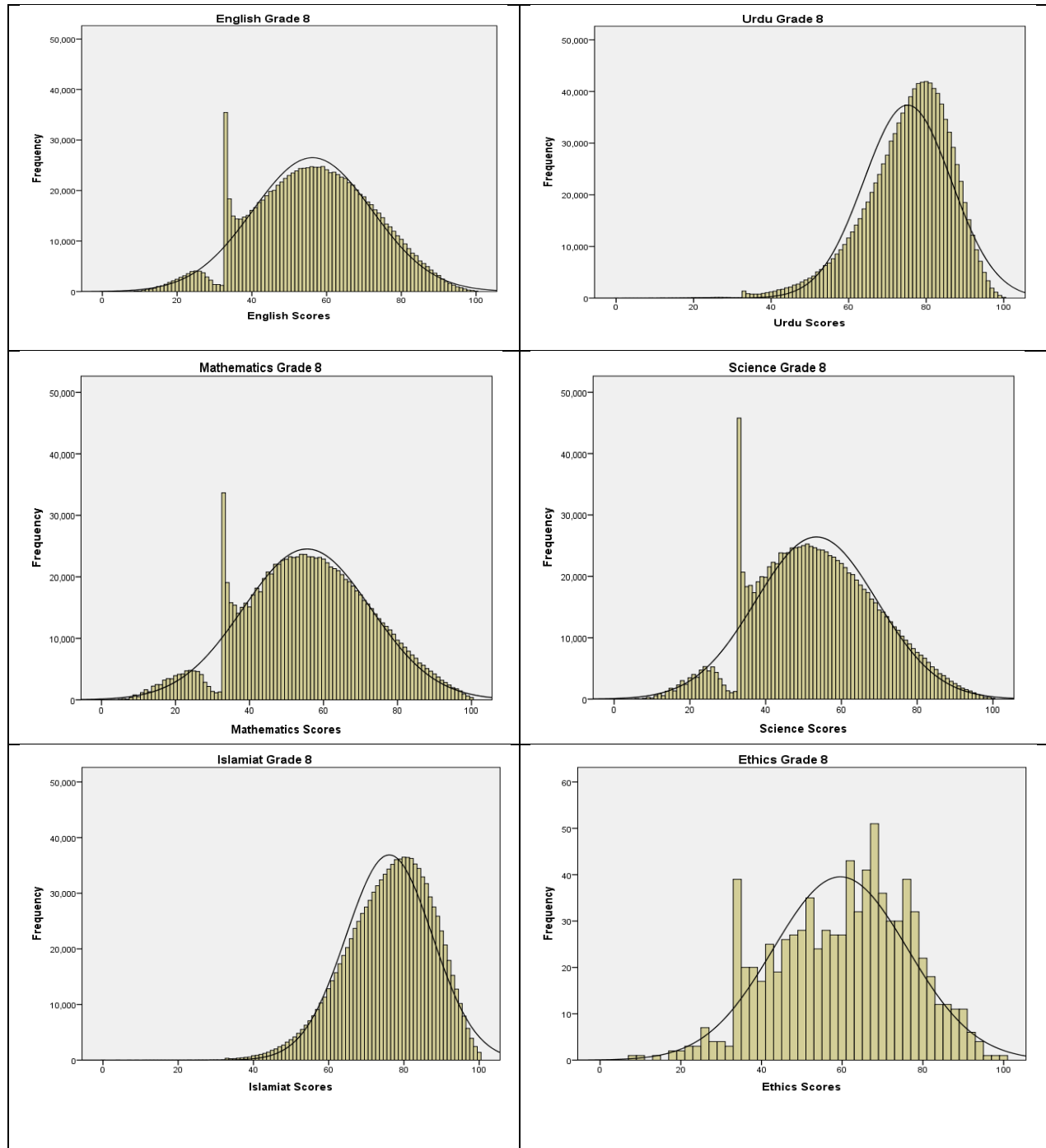
Graph 15: Gender and location wise performance of students in MCQs (Grade 8)

Graph 15 shows gender and location wise performance of the students in MCQs portion at grade 8 which clearly reflects that both boys and girls from rural areas performed better than their counterparts that of the urban areas. Overall rural boys performed slightly better than all others. The girls from both rural and urban areas got mean scores of 76% and 72% respectively while boys from rural and urban areas got 77% mean score and 76% mean score respectively.



Graph 16: Gender and location wise performance of students in CRQs (Grade 8)

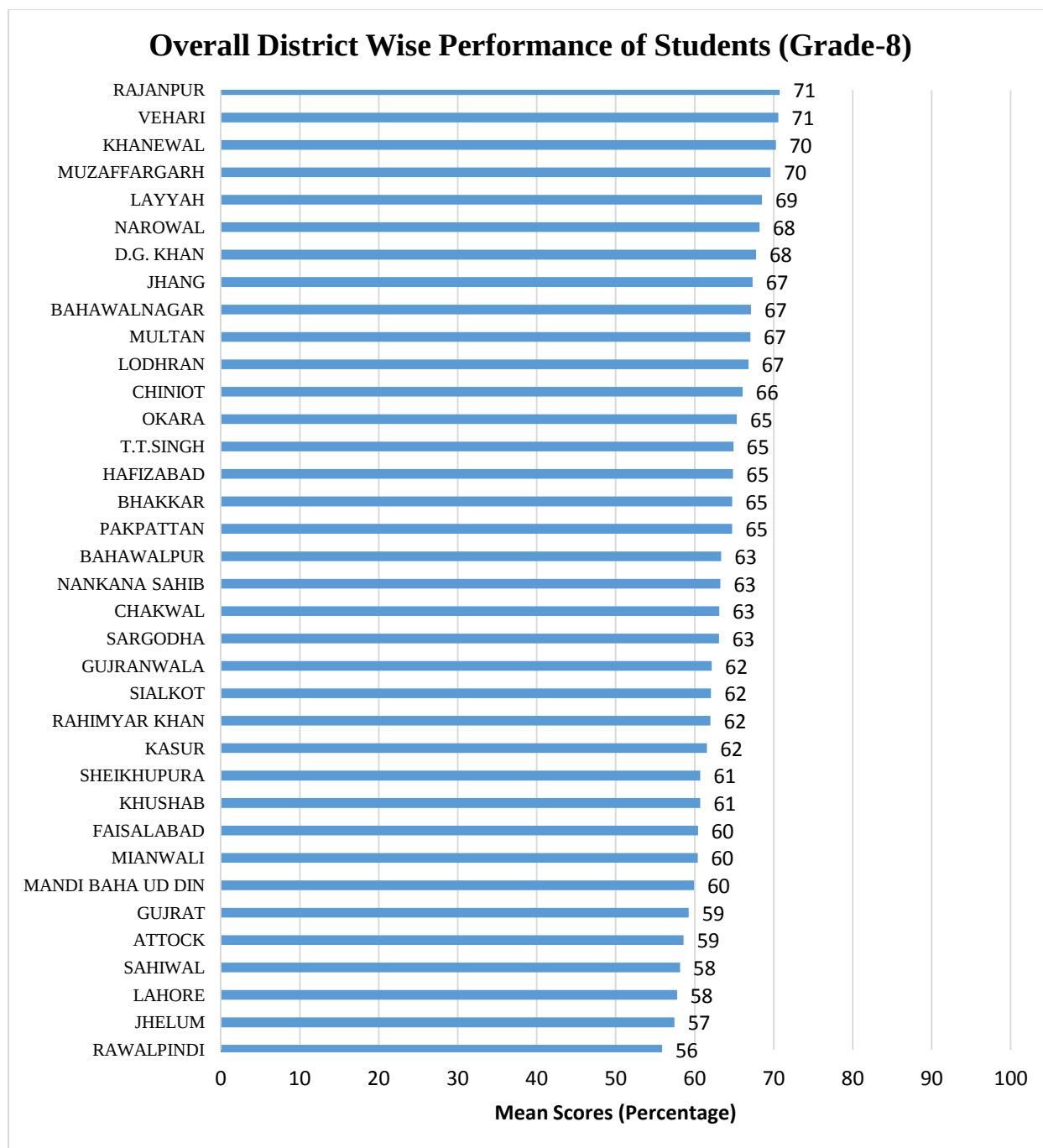
Graph 16 shows performance of students in CRQs portion at grade 8 level based on gender and location. Overall girls from rural areas performed better than all other students. As displayed above, the mean score of girls was considerably higher than boys with both urban and rural areas. The girls from both rural and urban areas got mean scores of 58% and 54 % respectively while boys from rural and urban areas got 52% and 43% mean score respectively.



Graph 17: Population based distribution curves (Grade 8)

The distribution curves of all the six subjects, given above, display the analysis of students' performance on the basis of population at Grade 8 level. It can be observed that, the distribution curves representing the subjects of Urdu and Islamiyat are left skewed and central peaks are high. It shows that the performance of students in these subjects is comparatively better and most of the students got score above the mean score (50%). It can also be noted that, in case of English, Mathematics and Science, the distribution curves are almost normal.

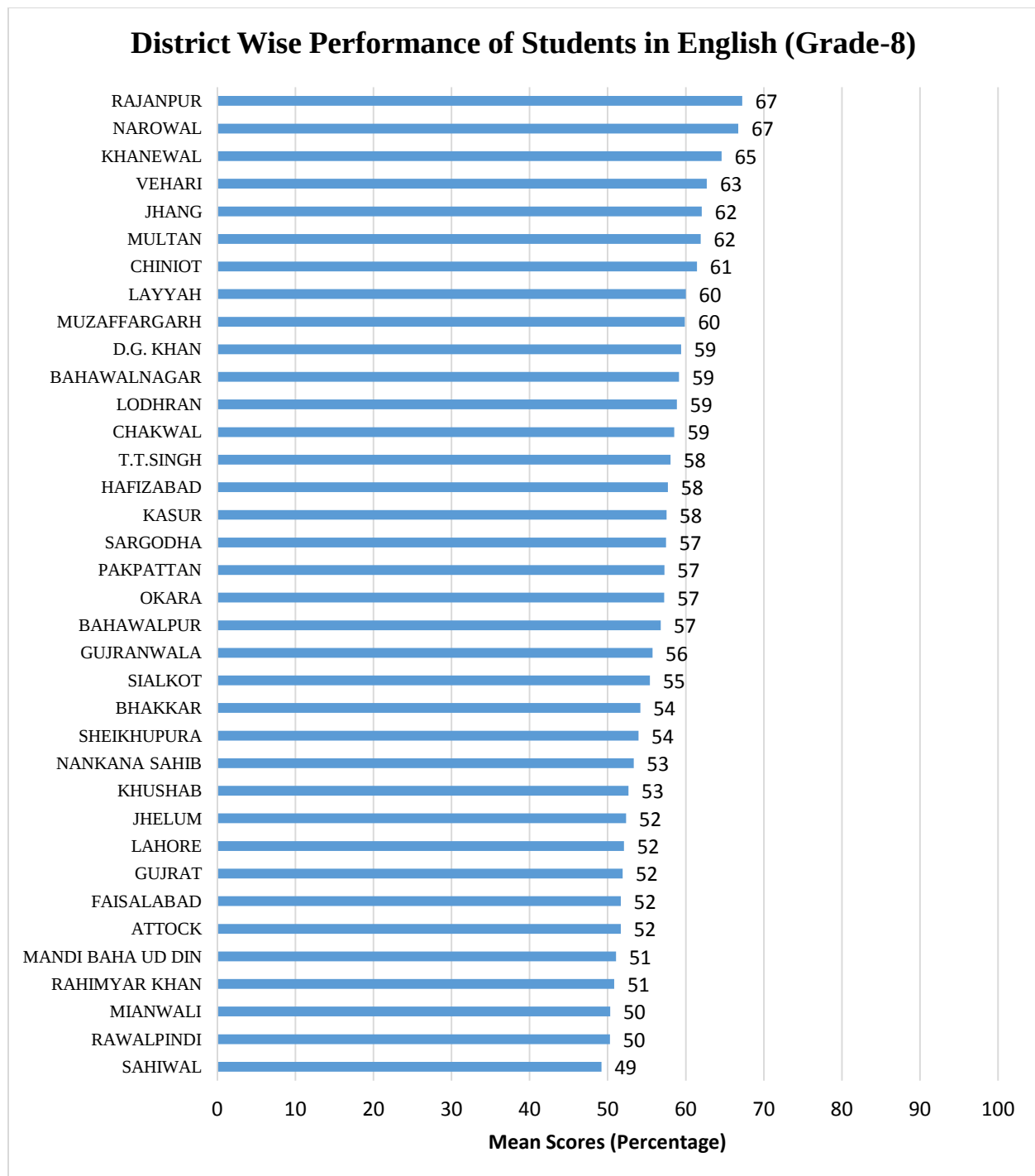
Overall District Wise Performance of Students (Grade-8)



Graph 18: Overall district wise performance of Students (Grade 8)

Graph 18 shows overall performance of students in grade 8 at district level. The result indicates that the students belonging to Districts Rajanpur and Vehari performed at a higher level resultantly both districts got first position in all of 36 Districts in Punjab with a mean score of 71%, followed by Khanewal and Muzaffargarh with the mean scores of each 70% respectively. Rawalpindi, Jhelum and Lahore along with Sahiwal with mean score 56%, 57% and 58% respectively are placed at the lowest three positions in this regard.

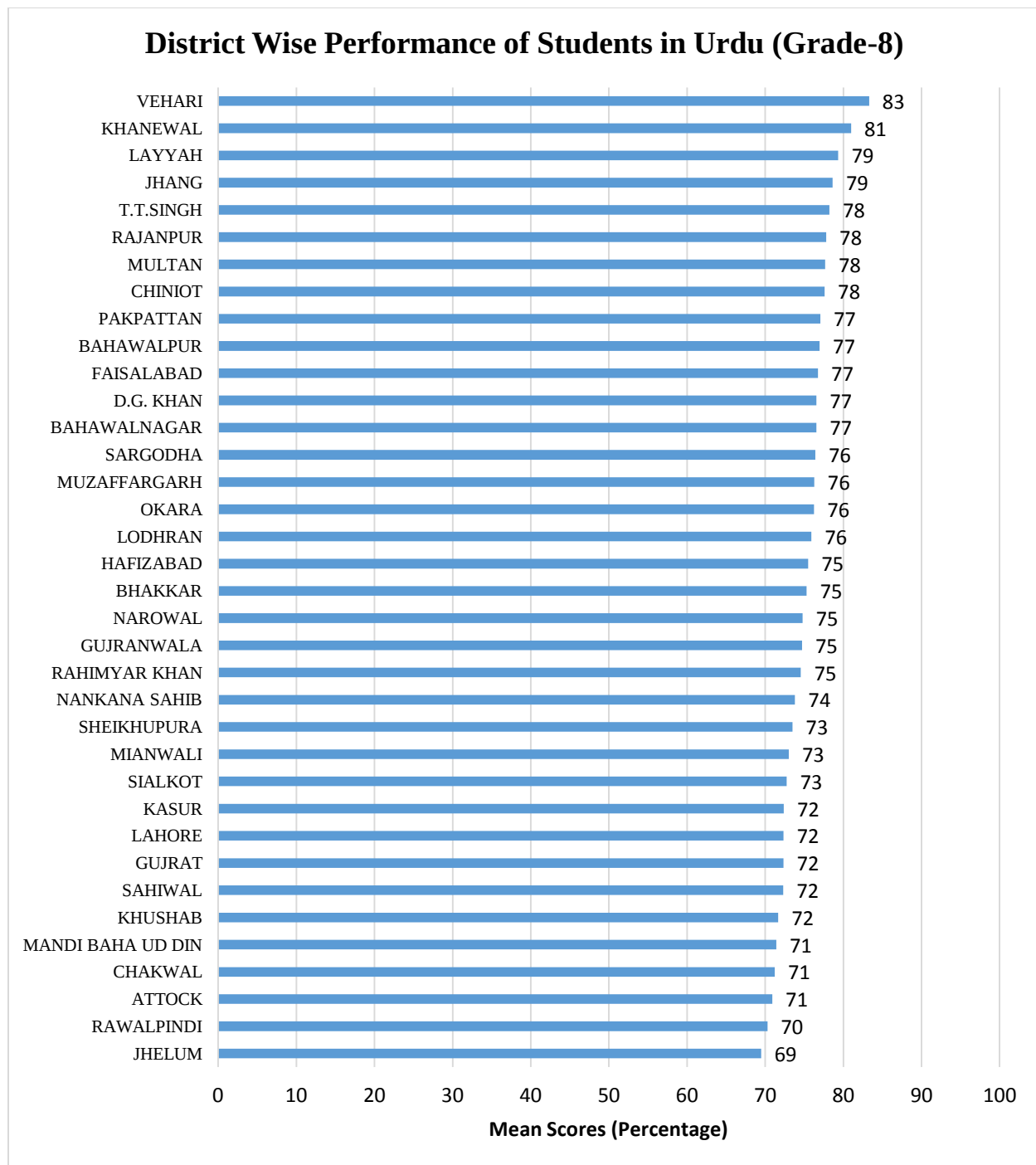
District Wise Performance of Students in English (Grade-8)



Graph 19: District wise performance of students in English (Grade 8)

Comparative analysis regarding performance of students in English at grade 8 is shown in Graph 19. It can be seen that Districts Rajanpur and Narowal outperformed the other districts and both districts achieved the highest mean score in English i.e. 67% while District Sahiwal with 49% mean score was found to be the lowest performing district in English.

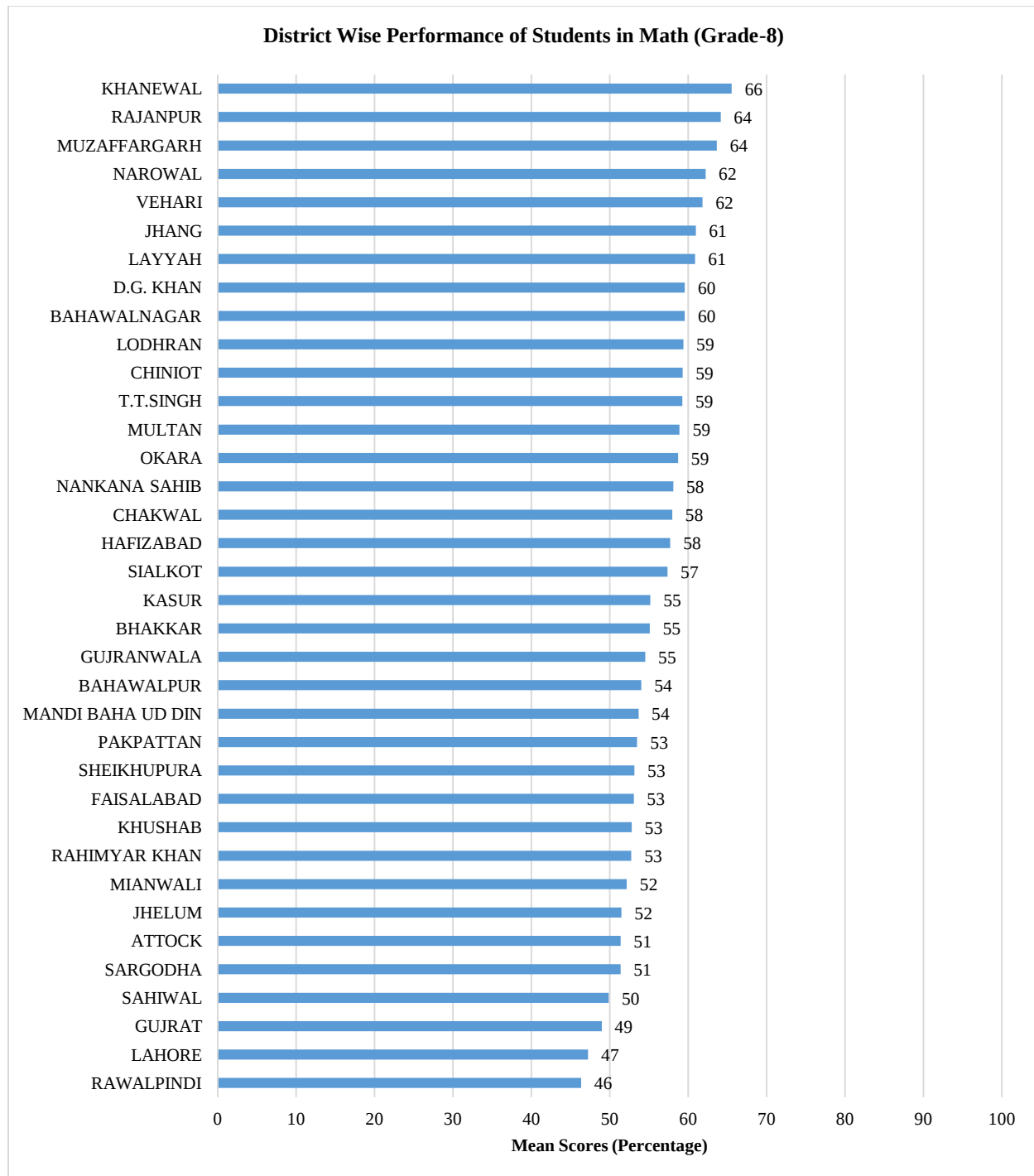
District Wise Performance of students in Urdu (Grade-8)



Graph 20: District wise performance of students in Urdu (Grade 8)

Comparative analysis regarding performance of students in Urdu at grade 8 is shown in Graph 20. It can be seen that District Vehari outperformed the other districts and achieved the highest mean score i.e. 83% while District Jhelum with 69% mean score was found to be the lowest performing district in Urdu.

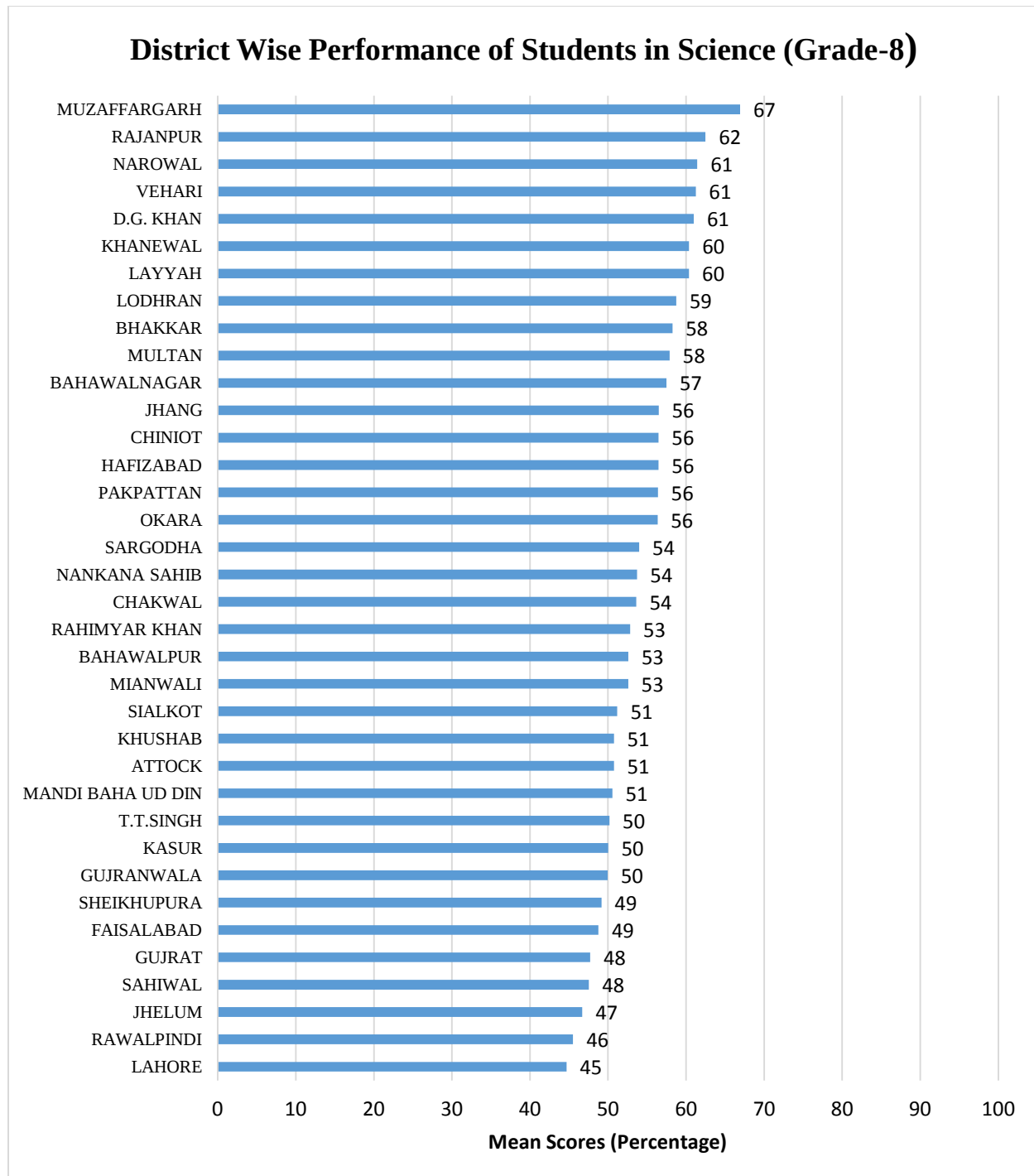
Subject Wise Performance of Student in Mathematics (Grade-8)



Graph 21: District wise performance of students in Mathematics (Grade 8)

Comparative analysis regarding performance of students in Mathematics at grade 8 is shown in Graph 21. It can be seen that District Khanewal outperformed the other districts and achieved the highest mean score i.e. 66% while District Rawalpindi with 46% mean score was found to be the lowest performing district in Mathematics.

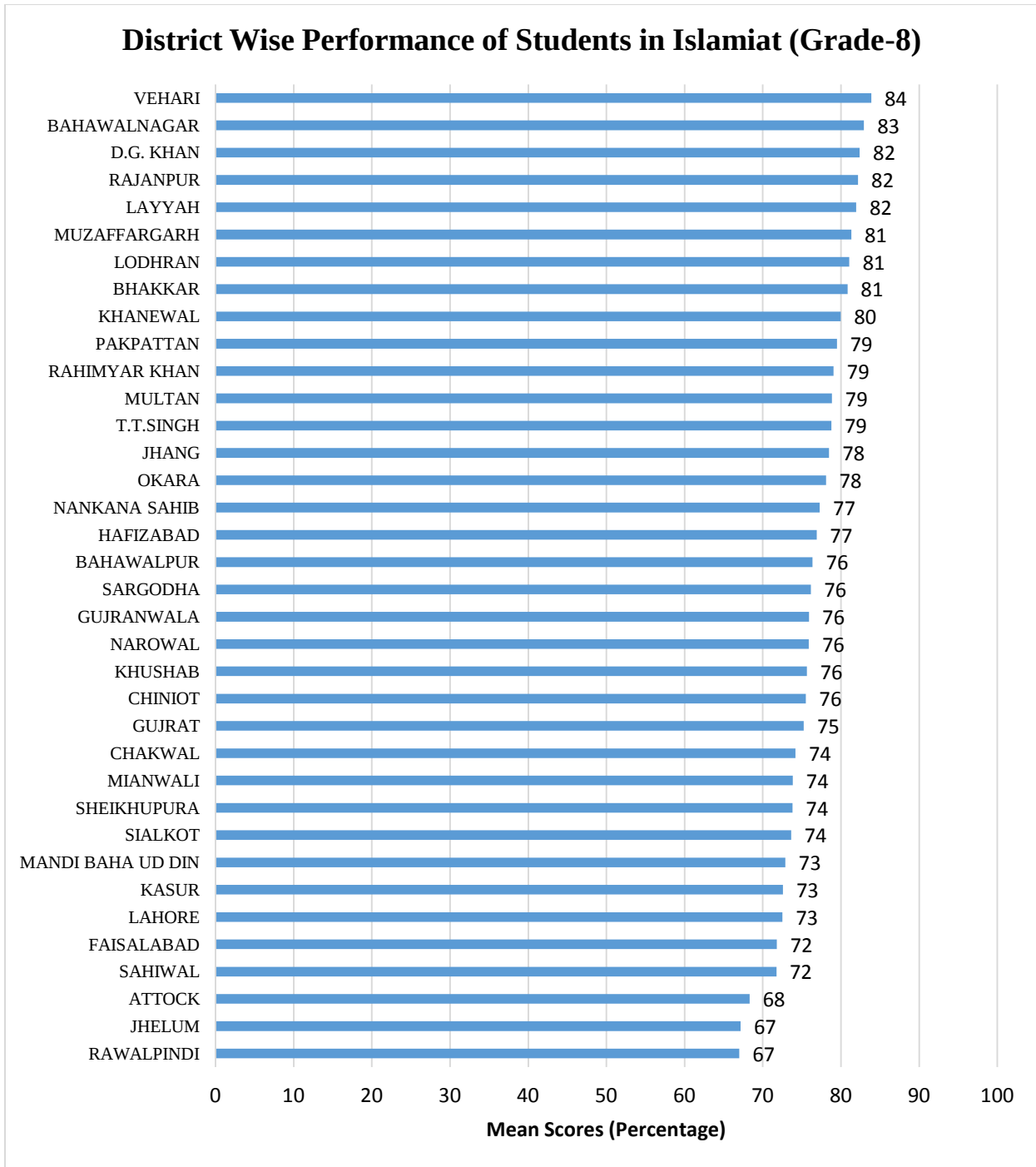
Subject Wise Performance of Students in Science (Grade-8)



Graph 22: District wise performance of students in Science (Grade 8)

Comparative analysis regarding performance of students in Science at grade 8 is shown in Graph 22. It can be seen that District Muzaffargarh outperformed the other districts and achieved the highest mean score i.e. 67% while District Lahore with 45% mean score was found to be the lowest performing district in Science.

District Wise Performance of Students in Islamiat (Grade-8)



Graph 23: District wise performance of students in Islamiat (Grade 8)

Comparative analysis regarding performance of students in Islamiat at grade 8 is shown in Graph 23. It can be seen that District Vehari outperformed the other districts and achieved the highest mean score i.e. 84% while District Rawalpindi and Jhelum with 67% mean score was found to be the lowest performing districts in Islamiat.

Recommendations to Stakeholders

Sr. #	Key Findings	Recommendations
1	The trend of subject wise students achievement score (%) is; Islamiat, Urdu, Ethics, English, Mathematics, Science with 76%, 75%, 60%, 56%, 56% and 53% mean scores respectively.	Teachers' training should be focused in the subjects of Science, Mathematics and English.
2	Students performed better on MCQs than CRQs portion of PEC exam 2020	- The internal assessment should be more focused on CRQs type tests to improve writing ability of students. Essay type competitions should be arranged to enhance the creative writing skill in schools at district management level. - It is suggested to introduce writing notebooks and regular dictation practice to improve handwriting, memory, writing skill in English and Urdu language. This practice can improve overall learning and writing ability of students. - It should be compulsory for students to get passing marks in all portions in order to pass the subject.
3	Overall girls scored slightly better	District authorities need to pay more attention

	mean score (percentage) than boys in all subjects except Mathematics where, both (girls and boys) scored equal mean percentage (56%).	towards Boys' schools in terms of regular monitoring and mentoring.
4	Students from private schools performed better than students from public schools and private registered students.	It is suggested to arrange activities such as quiz, spellathon, mental math competition and science models making competition between private and public schools to exchange their strengths with each other. To get fair comparative analysis of private and public sector schools; it is suggested that just brilliant students should be selected from public schools for appearing in PEC exams.
5	The students belonging to District Rajanpur and Vehari performed at a higher level resultantly both districts got first position in all of 36 Districts in Punjab with a mean score of 71%, followed by Khanewal and Muzaffargarh with the mean scores of each 70% respectively. Rawalpindi, Jhelum and Lahore with mean score 56%, 57% and 58% respectively are placed at the lowest three positions in grade 8 PEC exams 2020.	The district management officers of low performing districts are highly recommended to: • Resolve the issues/ problems of the teachers to create a better learning environment for students. • Take measures to improve the teaching methodology. Follow the pattern of model papers uploaded on PEC official website to prepare students on SLO based assessments.