ASSESSING ACADEMIC EXCELLENCE: A COMPREHENSIVE ANALYSIS OF B.ED STUDENTS PERFORMANCE

Introduction

The Bachelor of Education (B.Ed) program is a crucial component of teacher education, designed to equip aspiring educators with the knowledge, skills, and values necessary to excel in their profession. As a critical aspect of human resource development, teacher education plays a pivotal role in shaping the quality of education in a country. The B.Ed program, in particular, serves as a foundation for teachers to acquire the pedagogical skills, subject matter expertise, and emotional intelligence required to create a supportive and inclusive learning environment. In recent years, there has been a growing emphasis on enhancing the quality of teacher education programs, with a focus on developing teachers who are not only knowledgeable but also skilled, reflective, and committed to continuous learning. The National Council for Teacher Education (NCTE) has played a vital role in regulating and guiding teacher education programs in India, ensuring that they meet the highest standards of quality and excellence. Against this backdrop, the present study aims to analyze the results of a cohort of B.Ed students, spanning four semesters, to identify trends, patterns, and insights that can inform teaching practices, curriculum design, and institutional decision-making. The study seeks to answer critical questions, such as: What are the strengths and weaknesses of the B.Ed program? How do students perform across different semesters and subjects? What are the factors that influence student performance, and how can they be addressed?

By examining the Semester Grade Point Averages (SGPA) and Cumulative Grade Point Average (CGPA) of B.Ed students, this study aims to provide a comprehensive understanding of student performance, highlighting areas of excellence and identifying areas that require improvement. The findings of this study will have significant implications for teacher education institutions, policymakers, and other stakeholders, enabling them to develop targeted interventions and strategies to enhance the quality of teacher education programs.

Furthermore, this study will contribute to the existing body of research on teacher education, providing new insights and perspectives on the factors that influence student performance and the effectiveness of teacher education programs. By adopting a data-driven approach, this study will provide a nuanced understanding of the complex issues surrounding teacher education, enabling educators, policymakers, and researchers to work together to develop innovative solutions that can transform the education landscape.

Performance Metrics Analysis of Student Group Across Four Semesters (2019-21)

|	SGPA-I	SGPA-II	SGPA-III	SGPA-IV	CGPA
Mean	365	328	309	352	1354
Median	367	325	306	355	1352
Standard deviation	21.6	19.4	11.2	14.7	57.5
Minimum	321	289	274	310	1231
Maximum	423	368	324	379	1494

The provided data represents the statistical summary of Semester Grade Point Averages (SGPA) for four semesters (SGPA-I to SGPA-IV) and the Cumulative Grade Point Average (CGPA). The mean values indicate the average performance across students, with SGPA-I having the highest mean (365) and SGPA-III the lowest (309), suggesting a variation in student performance across semesters. The median values, which represent the middle score, are close to the mean, indicating a relatively symmetric distribution of grades. The standard deviation measures the spread of scores, with SGPA-I having the highest variability (21.6) and SGPA-III the lowest (11.2), implying that student performance was more consistent in SGPA-III compared to other semesters. The minimum and maximum values show the range of scores, with SGPA-I having the widest range (321–423) and SGPA-III the narrowest (274–324). The CGPA, which represents the cumulative performance across all semesters, has a mean of 1354 and a standard deviation of 57.5, showing a moderate variation in overall academic performance. The highest CGPA recorded is 1494, while the lowest is 1231, highlighting the difference in students' overall achievements. Overall, the data reflects fluctuations in academic performance across semesters, with notable variations in consistency and spread.
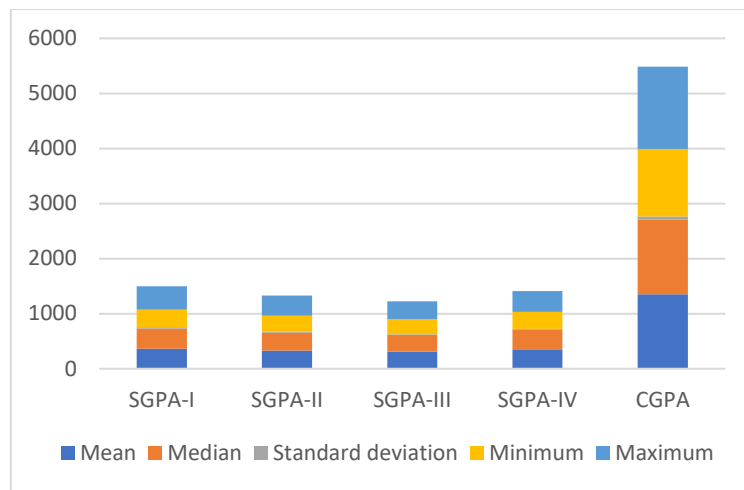
Visualization for trend and comparison
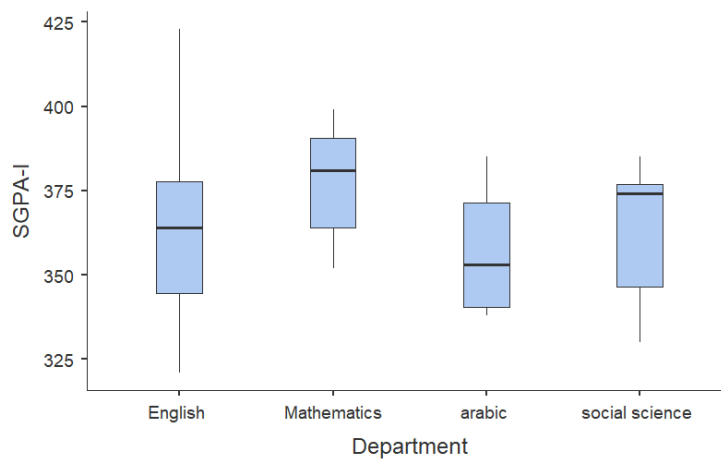
The boxplot illustrates the distribution of SGPA-I scores across four departments: English, Mathematics, Arabic, and Social Science. The median SGPA-I scores differ across departments, with Mathematics showing the highest median and Arabic the lowest. The interquartile range (IQR), represented by the box, indicates the spread of middle 50% of the scores, with Mathematics having the narrowest spread, suggesting more consistency, while English displays a broader spread. Outliers, if present, would be depicted as individual points outside the whiskers. The whiskers show the range of scores, with English and Social Science displaying larger ranges compared to Mathematics and Arabic. This analysis highlights variations in performance and consistency among departments.
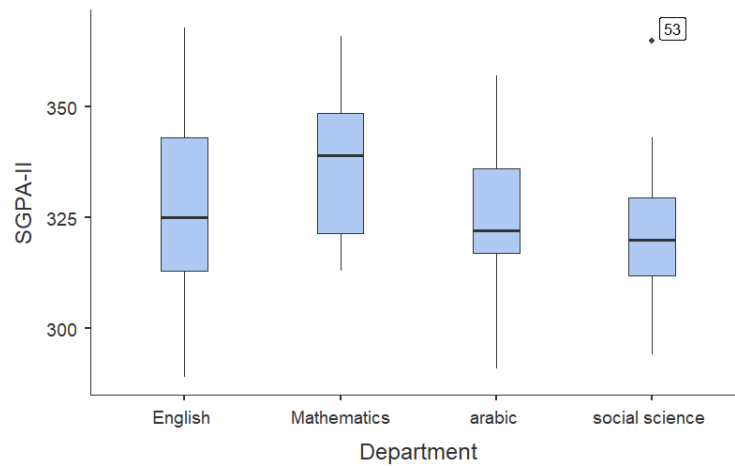
The boxplot represents the distribution of SGPA-II scores across four departments: English, Mathematics, Arabic, and Social Science. Mathematics continues to show the highest median SGPA-II, followed by English, while Arabic and Social Science have relatively lower medians. The interquartile range (IQR) indicates that Mathematics has the most consistent scores, as its box is narrower compared to other departments. The whiskers extend further for English and Social Science, indicating a broader range of scores in these departments. Additionally, an outlier is visible above the upper whisker in Social Science, suggesting an exceptionally high score by one student. Overall, the plot highlights departmental differences in performance and variability during the second semester.
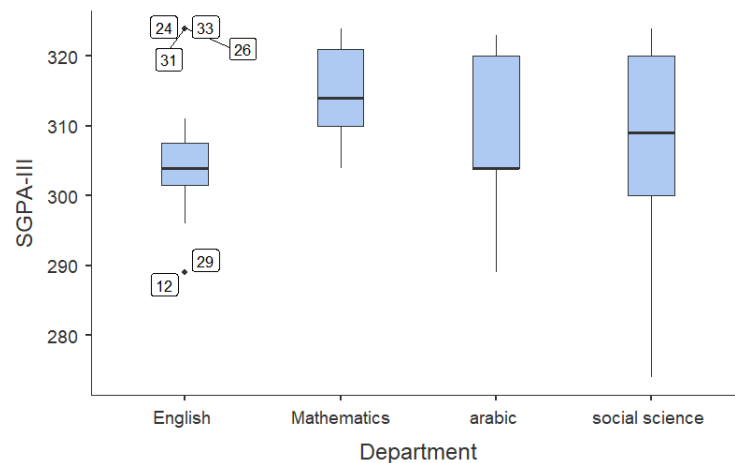
The boxplot illustrates the SGPA-III distribution across four departments: English, Mathematics, Arabic, and Social Science. English shows a wider spread of scores with multiple outliers both above and below, indicating significant variability. Mathematics and Arabic have higher medians and narrower interquartile ranges, suggesting better consistency in scores. Social Science displays a broad range but no visible outliers, indicating moderate variability and consistent performance.
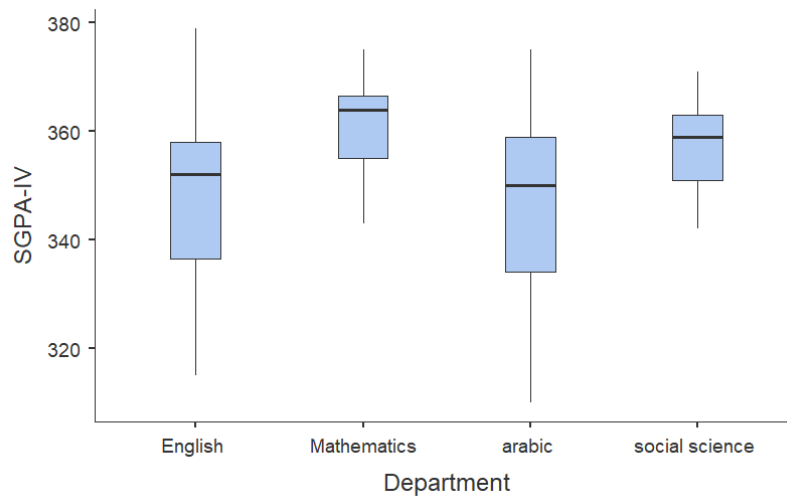
The boxplot illustrates the SGPA-IV distribution across four departments: English, Mathematics, Arabic, and Social Science. English shows a wider spread of scores with multiple outliers both above and below, indicating significant variability. Mathematics and Arabic have higher medians and narrower interquartile ranges, suggesting better consistency in scores. Social Science displays a broad range but no visible outliers, indicating moderate variability and consistent performance.

Performance Metrics Analysis of Student Group Across Four Semesters (2020-22)

	SGPA-I	*SGPA-II*	*SGPA-III*	*SGPA-IV*	*CGPA*
N	49	49	48	48	48
Mean	379	325	321	369	1395
Median	383	327	322	369	1408
Standard deviation	26.9	18.5	2.90	11.9	53.4
Minimum	327	294	309	332	1274
Maximum	433	366	324	390	1503

The data represents the performance metrics of a group of students over four semesters (SGPA-I, SGPA-II, SGPA-III, SGPA-IV) and their cumulative CGPA. Across the four semesters, the number of students remains consistent, with 49 students in SGPA-I and SGPA-II, 48 in SGPA-III and SGPA-IV, and 48 in CGPA. The average (mean) SGPA for each semester varies, with SGPA-I being the highest at 379, while SGPA-III has the lowest mean at 321. The CGPA has a mean of 1395. Median values are fairly close to the mean, indicating a relatively symmetrical distribution of scores. The standard deviation reflects the spread or variability of

scores, with SGPA-I having the highest variation (26.9) and SGPA-III having the lowest (2.90). The minimum and maximum values show the range of scores, with SGPA-I having the highest score of 433 and SGPA-III having the lowest at 309. The CGPA range is also wide, with a minimum of 1274 and a maximum of 1503. This data suggests general consistency in performance across semesters, though some fluctuation is present, particularly in the first and second SGPA periods.
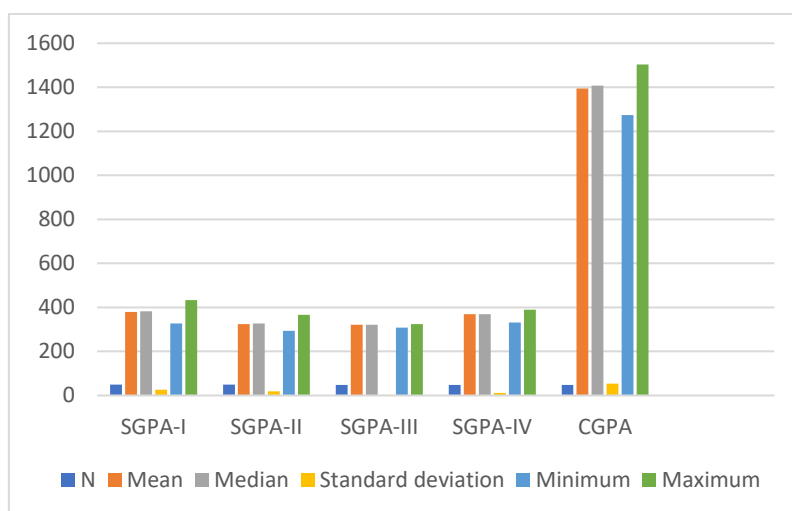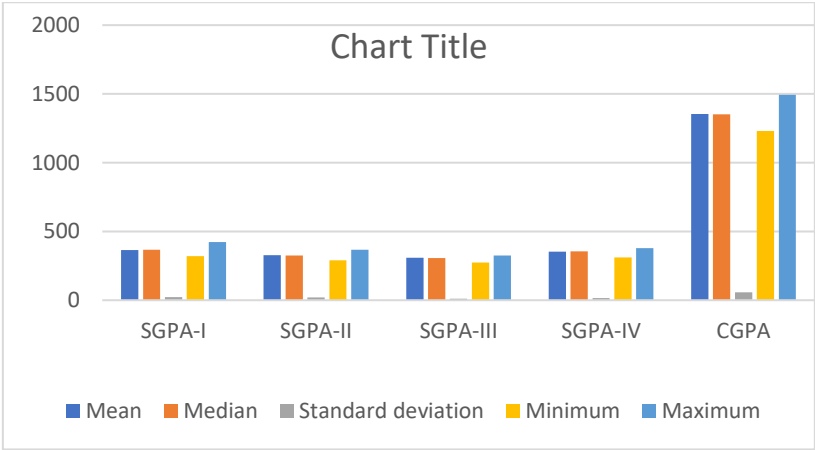

Grade Point Analysis (2021-23)

	SGPA-I	*SGPA-II*	*SGPA-III*	*SGPA-IV*	*CGPA*
N	50	50	50	50	50
Missing	1	1	1	1	1
Mean	374	331	323	369	1397
Median	380	336	323	373	1407
Standard deviation	26.8	20.3	1.86	16.8	60.3
Minimum	316	283	315	331	1262
Maximum	426	363	326	399	1502

This table presents a comprehensive analysis of grade points for a student's four-semester performance. The table includes the number of missing grades, mean, median,

standard deviation, minimum, and maximum SGPA (Semester Grade Point Average) and CGPA (Cumulative Grade Point Average) scores. The data suggests that the student's performance is consistent, with a high median SGPA score of 380 in the first semester and a maximum CGPA score of 1502. The standard deviation indicates a moderate variation in scores across semester


Analysis of SGPA Trends Across Three Semesters 2022-24

	SGPA-I	SGPA-II	SGPA-III
N	51	50	51
Mean	375	333	341
Median	377	334	341
Standard deviation	22.7	20.2	2.86
Minimum	322	297	331
Maximum	417	373	344

The data highlights the Semester Grade Point Average (SGPA) statistics for three semesters (SGPA-I, SGPA-II, and SGPA-III) across a sample size of 50-51 students. The mean SGPA shows a decreasing trend, starting at **375** in SGPA-I, declining to **333** in SGPA-II, and stabilizing at **341** in SGPA-III. The median values closely align with the means, indicating a symmetric distribution. Standard deviation values indicate that SGPA-I and SGPA-II have greater variability (**22.7** and **20.2**, respectively) compared to SGPA-III (**2.86**), suggesting more consistent performance in the third semester. The minimum and maximum scores also reflect

this trend, with the highest maximum score of **417** in SGPA-I and the most stable range in SGPA-III.
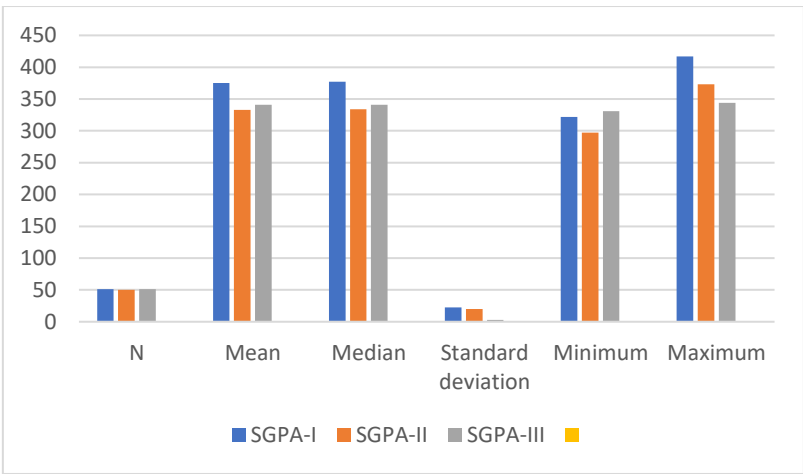
**SGPA Performance Overview Across Semesters (2023-25)**

	SGPA-I	*SGPA-II*	*SGPA-III*
N	50	43	1
Mean	361	335	344
Median	365	332	344
Standard deviation	25.2	19	
Minimum	315	298	344
Maximum	406	373	344

The data provides an analysis of SGPA scores across three semesters (SGPA-I, SGPA-II, and SGPA-III) with sample sizes of **50**, **43**, and **1**, respectively. The mean SGPA demonstrates a slight decline from **361** in SGPA-I to **335** in SGPA-II, followed by **344** in SGPA-III, which represents the sole student's score. The median scores align closely with the means, indicating balanced performance distributions for SGPA-I and SGPA-II. The standard deviation shows higher variability in SGPA-I (**25.2**) compared to SGPA-II (**19**), while SGPA-III lacks variability due to having only one student. The minimum and maximum scores suggest a broader range of performance in SGPA-I (**315–406**) and SGPA-II (**298–373**), with SGPA-III being uniform at **344**.
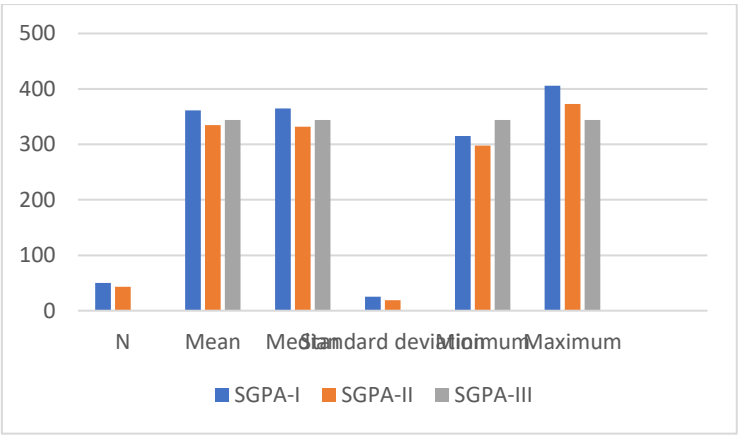
Statistical Summary of Student Performance Across Papers and EPC Components (2024-26)

	PAPER 1	PAPER 2	PAPER 3	PAPER 4	PAPER 5	EPC-101-	EPC-102-	EP-103-Yoga
Mean	68.8	65.9	40.2	39.8	71.2	27.1	48	19
Median	69	65	41	40	74	27	48	19
Standard deviation	6.69	8.39	3.33	3.33	7.92	0.749	0	0
Minimum	54	39	32	28	55	26	48	19
Maximum	82	81	46	45	87	28	48	19
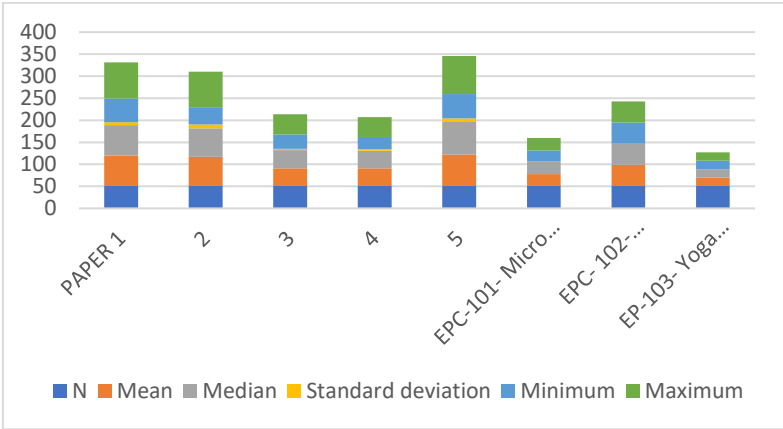
The data summarizes the performance of 51 students across five main papers and three EPC (Enhancing Professional Capacities) components. The mean scores indicate that students performed best in Paper 5 (71.2) and EPC-101 Micro Teaching (27.1), while Paper 3 (40.2) and EPC-102 Language Across Curriculum (19) show the lowest averages. The standard deviations highlight variability in performance, with Paper 2 (8.39) showing the most variation and EPC-103 Yoga, Health, and Physical (0) showing no variation, as all students scored uniformly. The range of scores, from minimum to maximum, reflects the spread of performance, with Papers 1 and 5 showing the widest range, suggesting diverse student outcomes. The medians closely align with the means, indicating a fairly symmetric distribution of scores for most components.

Top Performers by Department: CGPA Achievements from 2019-21 to 2021-23

| Academic Year	Department	Register No	Name	CGPA
2019-21	Arabic	SFATTAR003	AYISHA SHIBINA P V	1422
	English	SFATTEG022	MUNEEFA V	1494
	Mathematics	SFATTMS007	SAFNA M T	1449
	Social Science	SFATTSO007	RISANA THASNI P	1430
2020-22	Arabic	SFAUTAR011	SHIFANA.K.P	1458
	English	SFAUTEG004	FATHIMATH SAHLA K	1479
	Mathematics	SFAUTMS005	MARIYAM BEEVI E	1503
	Social Science	SFAUTSO009	RASHMI V	1465
2021-23	Arabic	SFAVTAR006	NAJEENA K	1463
	English	SFAVTEG001	AISWARYA K	1502
	Mathematics	SFAVTMS001	ARDRA P K	406
	Social Science	SFAVTSO002	FATHIMA NASHVA. M	1472

From this data, we can observe that the students consistently excelled within their respective departments across the three academic years. Notably, the **Mathematics** department seems to have the highest achiever, **Mariyam Beevi E** (CGPA 1503) in the 2020-22 batch. **English** also has high performers, with **Muneefa V** (1494) and **Aiswarya K** (1502) leading in their respective batches.

However, the **Mathematics** department in the 2021-23 batch shows an outlier with a CGPA of **406** for **Ardra P K**, which may require further review. Additionally, all other departments show a consistent range of high CGPA values, indicating strong academic performance across these batches.

Rising Distinction Rates: A Three-Year Academic Performance Analysis (2019-21 to 2021-23)

Academic Year	No. of Students	Percentage
2019-21	14	24%
2020-22	27	57%
2021-23	29	59%

The data reflects the distinction rates for three consecutive academic batches from 2019-21 to 2021-23, showing a clear upward trend in performance over time. In the 2019-21 batch, only **14 students (24%)** achieved distinction, indicating a relatively low success rate in this category. However, the distinction rate significantly improved for the 2020-22 batch, with **27 students (57%)** attaining this level, more than doubling the previous percentage. The positive trend continued with the 2021-23 batch, where **29 students (59%)** earned distinction, marking the highest rate in the data set. This steady increase suggests consistent improvements in academic performance, teaching methodologies, or student support systems, reflecting overall progress in the institution's academic standards.
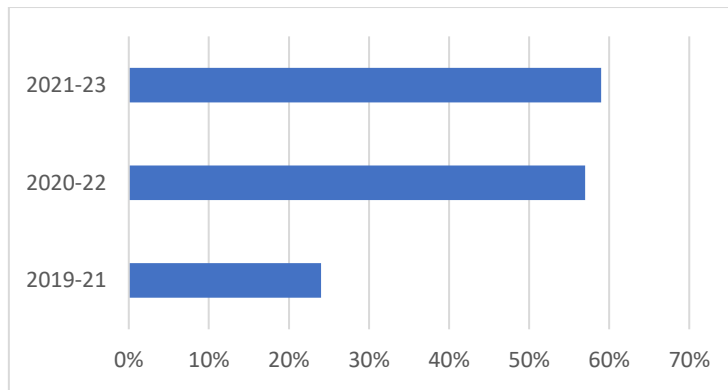
The horizontal bar chart illustrates the distinction rates of three academic batches (2019-21, 2020-22, and 2021-23). It shows a clear upward trend, with the distinction rate starting at **24%** for the 2019-21 batch, rising significantly to **57%** for the 2020-22 batch, and further increasing to **59%** for the 2021-23 batch. This progression highlights consistent improvements in academic performance over time, suggesting enhanced student achievements, better academic support, or improved teaching strategies contributing to these results. The visualization effectively demonstrates the positive trend in distinction rates.

Academic Excellence: 2024-26 Batch Semester Toppers by Department

Sl. No	Department	Name of The Student	Percentage
1	Mathematics	Fathima Shafna K P	85 %
2	English	Sneha R	84 %
3	Arabic	Mubthasma P P	83 %
4	Social Science	Shaheena K T	80 %

The data showcases the top performers from the 2024-26 batch in the first semester examination across four departments: Mathematics, English, Arabic, and Social Science. Fathima Shafna K P from Mathematics secured the highest percentage with 85%, followed closely by Sneha R from English with 84%, and Mubthasma P P from Arabic with 83%. Shaheena K T from Social Science achieved 80%, rounding off the list of toppers. This highlights the exceptional academic achievements of these students, demonstrating consistent excellence across diverse disciplines within the college.

Conclusion

The analysis provides valuable insights into student performance trends across different years, subjects, and departments. It helps in identifying strengths and areas for improvement in academic programs. Further visualization and trend analysis can be used for better decision-making in curriculum planning and student support strategies.

The present study undertook a comprehensive analysis of the results of a cohort of B.Ed students, spanning four semesters. The findings of this study provide valuable insights into the performance trends and patterns of B.Ed students, highlighting areas of strength and weakness. The results indicate that the students demonstrated a satisfactory level of performance across the four semesters, with a gradual improvement in their Cumulative Grade Point Average (CGPA). However, the study also revealed significant variations in student performance across different subjects and semesters, underscoring the need for targeted interventions to support students in areas where they struggle.