



Comparative Analysis of Academic Performance of BICTE Fifth Semester Students at Two Colleges: Balkumari and Bhanubhakta

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ARTICLE INFO	ABSTRACT
<p>Published Online: 30 September 2024</p>	<p>The academic performance of Bachelor in Information and Communication Technology in Education (BICTE) students in the fifth semester is significant. It has a considerable impact on the academic achievements of students in other semesters, faculties and the Nation as a whole. This research aims to evaluate the academic performance of fifth-semester BICTE students at two campuses located in different geographical and political regions. The study was conducted at Balkumari College (BKC) in Narayangarh and Adikabi Bhanubhakta Campus (ABC) in Damauli. In order to achieve the objective of this study, a sample of 47 fifth semester student and population consider as the BICTE students were purposively selected from these campuses. Descriptive approach employing t-test at 5% level of significant with two tail test were utilized. Secondary data were collected from Tribhuvan University, the Dean's Office of Education, and online journals. Data analysis was performed using Excel 2016. The study revealed that BKC exhibits higher pass percentages for both male and female students in comparison to ABC. Specifically, the overall pass rate at BKC is 96.3%, which is markedly higher than the 71.43% observed at ABC. The researcher identified a significant disparity in the academic performance of students from BKC and ABC during their fifth-semester final examinations. While BKC students generally outperformed their counterparts from ABC in several subjects, this difference was found to be statistically significant. Additionally, developing a culture of faculty interaction is particularly important for both institutions.</p>
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<p>KEYWORDS: Comparatives academic performance, BICTE, Balkumari and Adikabi Bhanubhakta Colleges.</p>	

INTRODUCTION

Education is a fundamental investment in the development of human and economic resources for any nation. As a key sector, it significantly contributes to human capital development, thereby playing an essential role in enhancing productivity and growth on both micro and macroeconomic scales. Education, in its various levels and forms, serves as a crucial instrument for tackling nearly all global challenges. This learning process occurs within educational institutions, commonly known as schools, as well as in institutions of higher education (Faruque, Walusimbi, Kalinaki, & Hamisi, 2017). Among various indicators of national development, education is fundamental to a nation's progress. Therefore, the most significant investment a country can make is to educate its citizens by providing them with the necessary skills, knowledge, and attitudes essential for societal survival. It is crucial for educational institutions at all levels to integrate components into their programs that enhance knowledge, moral conduct, rationality, and practical skills for

living. These elements should significantly impact individuals who seek solutions to various societal issues. University education, being the highest level of formal education in Uganda, faces immense pressure to prepare professionals for the "knowledge society" (Shen, 2007). It plays a crucial role in the national economy, both as a major industry and as a source of trained and educated personnel for other economic sectors. To fulfill this role, universities offer a wide array of courses in various fields, allowing students to choose their studies based on their previous academic performance, interests, and other factors. These fields include, but are not limited to, general education, vocational studies, liberal arts, law, engineering, and professional higher education (Adeyemi, 2014). The Bachelor of Education in Information Communication Technology (BICTE) is a 4-year undergraduate program offered by Tribhuvan University under the Faculty of Education. Spanning 8 semesters and totaling 138 credit hours, the curriculum includes 12 credit hours for

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communication skills, 24 for educational core courses, 60 for major specialization subjects, 30 for minor subjects, and 9 for teaching internships/practicums. This program familiarizes students with modern education systems and computer science, focusing on information and communication technology. Key subjects include Information Technology, C/C++ Programming, Psychology, Fundamentals and Technology in Education, Java Programming, Database Management Systems, Data Communication, and Artificial Intelligence (EDU, 2024) .

Balkumari College (BKC), founded in 2043 BS (1986 AD), has evolved from a public high school with 360 students to a modern institution serving approximately 3,500 students with advanced facilities. As a community-based institution, it is a pivotal part of Chitwan's education sector, offering a variety of programs including MBA-FM, MBS, MEd, BICTE, BHM, BBA, BIM, B.Sc., B.Ed., BBS, and HA (College, 2024) . Aadikabi Bhanubhakta Campus (ABC), the campus aims to provide quality education locally, benefiting students from disadvantaged, indigenous, and marginalized communities in Tanahun and neighboring districts like. It offers Bachelor's and Master's degree programs in Humanities, Management, and Education, including specialized courses like BICTE and BBA, at affordable prices. With an average annual enrollment of over 1,700 students, more than 1,000 students have graduated since its inception (Campus, 2024).

The main aim of this study was to assess the academic performance of two groups of students studying at BICTE. One group consists of students from BKC, situated in the centrally located, highly intellectual, and politically aware Tarai region of Nepal. The other group comprises students from ABC, located in the central hill region. The research question is: Are there any significant differences in academic performance between these two College groups in BICTE students?

METHODOLOGY

In this research, a comparative approach was adopted to assess the academic performance of two groups of students studying at BICTE. One group consists of students from Balkumari College, situated in the centrally located, highly

intellectual, and politically aware Tarai region of Nepal. The other group comprises students from Adhikabi Bhanubhakta College, located in the central hill region. This comparison aims to determine if there are any significant differences in academic performance between these two Colleges groups. The study population consisted of male and female students enrolled in the BICTE course from two purposively selected colleges. The subjects of that level were Education and Development (ED) 452, Discrete (MATH) 456, JAVA-455, Data Communication Network (DCN) 456 and Software Engineering and Project Management (SEP) 457. The study sample included all final fifth-semester students in the BICTE course from these two colleges. As shown in Table 1, the number of students at the time of the study was derived from the sample database collected from Tribhuvan University, the Dean's Office of Education, and online journals. A quantitative approach was employed to compare the academic performance of students with ABC and BKC students in the BICTE course of 2022-2026 batch. The following statistical methods were utilized: Welch's t-test was applied to determine if there was a significant difference in the academic performance between ABC and BKC students in the BICTE course at a 0.05 significance level. Welch's t-test was chosen because, unlike Student's t-test, it does not assume equal variances. It is more robust and maintains Type I error rates close to normal for unequal variances and unequal sample sizes.

RESULT AND ANALYSIS

The table 1 compares the academic performance and dropout rates of male and female students between Adikabi Bhanubhakta Campus (ABC) and Balkumari College (BKC). At ABC, female students comprised 38.1% of the total student body. Among the male students, 84.62% passed. In contrast, at BKC, the total pass rate for female was 100%, with 94.12% of male students passing in the aggregate final results. Overall, Balkumari College (BKC) demonstrates higher pass percentages for both male and female students compared to Adikabi Bhanubhakta Campus (ABC). The total pass percentage at BKC is 96.3%, significantly higher than the 71.43% at ABC. Additionally, BKC has a lower total dropout rate with 13 students compared to ABC's

Table no-1: The cross sectional Status of two institution of BICTE Fifth Semester Students

	Adikabi Bhanubhata Campus (ABC)				Balkumari College (BKC)			
	Number of Students	Pass Student	Pass percentage	Drop out students	Number of Students	Pass Student	Pass percentage	Drop out students
Female	8	4	50	2	10	10	100	1
Male	13	11	84.62	7	17	16	94.12	12
Total	21	15	71.43	9	27	26	96.3	13

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Adikabi Bhanubhakta Campus (ABC). The total pass percentage at BKC is 96.3%, significantly higher than the

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71.43% at ABC. Additionally, BKC has a lower total dropout rate with 13 students compared to ABC's.

Status of Pass percentage on Each Subjects of BICTE Fifth Semester Students

The bar chart (figure 1) titled: Pass percentage on Each Subject of BICTE Fifth Semester, compares the pass percentages of students from two colleges, BKC and ABC, across various subjects. ABC shows a higher pass percentage

in ED, DCN, and SEP, with 100% pass rates in all subjects except MATH. BKC outperforms ABC significantly in MATH, with a 100% pass rate compared to ABC's 71.43%. BKC students have consistently high pass rates across all subjects, either at or near 100%. Both BKC and ABC have a perfect pass rate (100%) in JAVA and SEP. The chart demonstrates that while BKC has strong and consistent pass rates, ABC students excel particularly in ED, DCN, and SEP, with a noticeable gap in MATH performance.

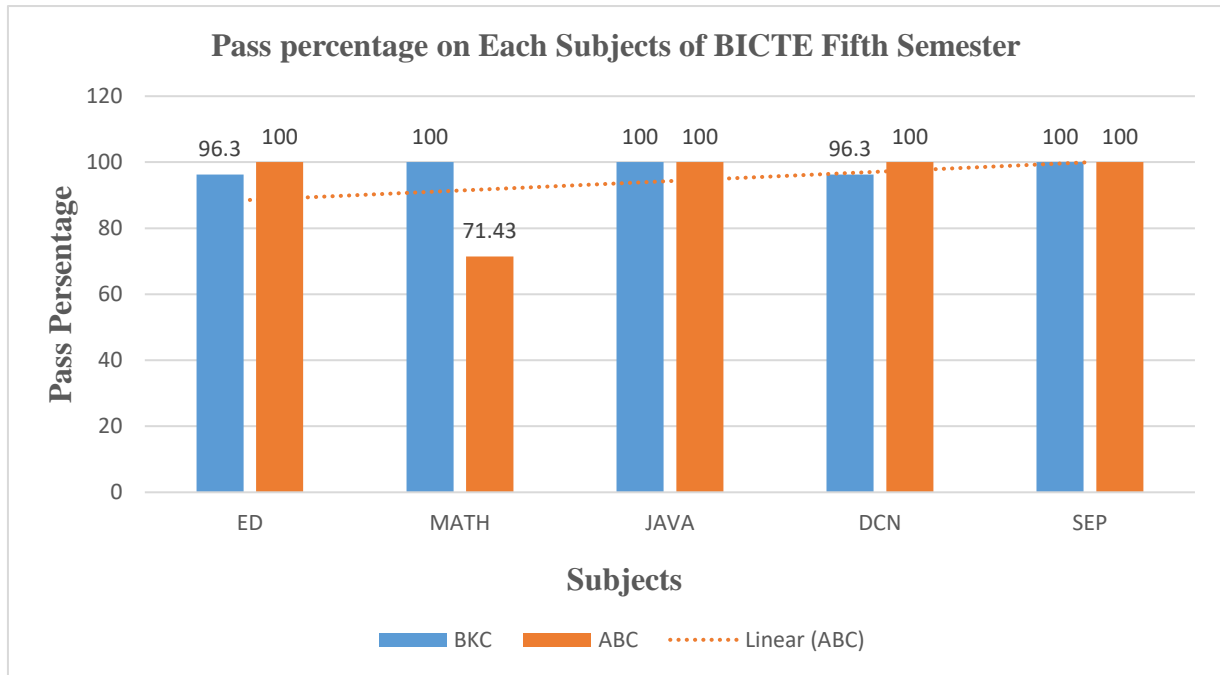


Figure 1: Pass percentage on Each Subject of BICTE Fifth Semester

Status of Descriptive and Inferential Statistics

Education and Development 452: Table 2 indicates the descriptive and inferential statistics of fifth-semester BICTE students between two colleges, ABC and BKC. The descriptive statistics for the Education and Development

subject were 2.96, 0.212, 7.18% for ABC, and 2.96, 0.15, 5.06% for BKC. According to the table, the mean grade marks for the subject Education and Development between these two colleges did not show a significant difference at the 5% level.

Table no-2: Academic status of Education 452

	Passed Students	Mean Grade	SD	CV	T-Cal	T-Tab	Decision	Significant
ABC	21	2.95	0.212	7.18	0.185	1.96	H ₀ accepted	0.00012
BKC	25	2.96	0.15	5.06				

Discrete Mathematics 456: Table 3 reflects the central grade values for the subject Discrete Mathematics among fifth-semester students of the Education Faculty at Tribhuvan University, across two academic institutions. From this table,

we conclude that the mean grade marks for BKC are higher, less variable, and more uniform than those of ABC at the 5% significance level.

Table no-3: Academic status of discrete Mathematics 456

	Passed Students	Mean Grade	SD	CV	T-Cal	T-tab	Decision	significant
ABC	15	2.84	0.15	5.28	3.86	1.96	H ₀ Rejected	0.00021
BKC	26	3.43	0.09	2.63				

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JAVA-455: Table 3 shows the central grade values for the subject JAVA among fifth-semester students from two academic institutions in the Education Faculty of Tribhuvan

University. The data indicates that BKC has higher mean grade marks, less variability, and greater uniformity compared to ABC, at the 5% significance level.

Table no-4: Academic status of JAVA 455

	Passed Students	Mean Grade	SD	CV	T-Cal	T-Tab	Decision	significant
ABC	21	3.17	0.15	4.73	3.38	1.96	H ₀	0.00018
BKC	26	3.33	0.174	5.22			Rejected	

Data Communication Network (DCN) 456: Table 5 presents the descriptive statistics for the grade marks in the DCN subject at College ABC (mean = 3.44, standard deviation = 0.22, and 6.4% variation) and College BKC (mean = 3.17, standard deviation = 0.15, and 4.73%

variation). Inferential statistical analysis shows that the calculated value of 4.76 exceeds the critical value of 1.96 at the 5% significance level. This indicates that the grade marks for the DCN subject at College BKC are significantly higher than those at College ABC.

Table no-5: Academic status of Data Communication and Networks 456

	Passed Students	Mean Grade	SD	CV	T-Cal	T-Tab	Decision	significant
ABC	21	3.44	0.22	6.4	4.76	1.96	H ₀	0.00014
BKC	25	3.17	0.15	4.73			Rejected	

Software Engineering and Project Management (SEP) 457: Table 6 presents the descriptive and inferential statistics of fifth-semester BICTE students from two colleges, ABC and BKC. For the subject SEP, the descriptive statistics were

3.22, 0.21, and 6.52 % for ABC, and 3.16, 0.24, and 7.59 % for BKC. The table shows that there was no significant difference in the mean grade marks for SEP between the two colleges at the 5% significance level

Table no-6: Academic status of SEP 456

	Passed Students	Mean Grade	SD	CV	T-Cal	T-Tab	Decision	significant
ABC	21	3.22	0.21	6.52	0.913	1.96	H ₀	0.00015
BKC	26	3.16	0.24	7.59			accepted	

DISCUSSION AND RECOMMENDATIONS

The results presented clearly indicate that academic institutions which are well-located, well-facilitated, and have easy access to human resources and materials perform better than their counterparts, a finding consistent with (Adeyemi., 2014). The effect of variables such as gender and students' academic achievement in previous learning courses significantly influences their academic performance (Odeh, 2007). Socio-economic factors, institution-related issues, and social conditions are the primary causes of student dropout (Potane & Banaag, 2024). Based on the study results, it is recommended that administrators increase the admission of students into the BICTE program, given their superior performance. Additionally, developing a culture of faculty interaction is particularly important for both institutions.

researchers worldwide. Numerous studies have identified various factors contributing to these differences. In line with this research, the current study aims to compare the academic performance of BICTE fifth-semester students from two colleges with different backgrounds to determine if there is a significant difference attributable to these backgrounds. The study found a significant difference in the academic performance of students from BKC and ABC in their fifth-semester final examinations. Although BKC students generally performed better than ABC students in some subjects, this difference was statistically significant. Therefore, the researcher concludes that BKC students perform better overall in the fifth-semester course of BICTE. This difference can be partially attributed to the students' geographical and regional backgrounds.

CONCLUSION

Variations in academic performance among students at all levels of education have garnered significant attention from

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