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Evaluating the Impact of Quality Development Initiatives on Curricular Aspects and Teaching-Learning Evaluation in Gujarat's Higher Education Institutions

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ABSTRACT

The research study explores the impact of quality development initiatives on two major areas in Gujarat's higher education namely curricular aspects and teaching-learning evaluation comparing perceptions between State and Private Universities. The research was carried out using quantitative approach and data were collected from senior teachers, quality administrators, and IQAC members across diverse academic streams and analyzed using independent sample T-tests. The hypotheses claimed that private universities perceive higher quality in curricular aspects and teaching-learning evaluation. Composite score analyses revealed no significant differences in overall curriculum quality or teaching-learning effectiveness, rejecting the H1 and H2. Moreover, the exploratory analysis of individual statements resulted into significant differences favouring private universities on industry-relevant curricula, student development, progress monitoring, and evaluation reforms, though only progress monitoring remained significant after Bonferroni correction. The findings of study suggest that Gujarat's quality frameworks like NAAC and GSIRF, have standardized practices across streams yet private universities performs better in selected areas due to higher autonomy and technology adaptation. The study recommends enhancing evaluation systems and industry collaboration in state universities in Gujarat for quality assurance in education.

***Keywords**: Higher Education, Quality Development, Curriculum Quality, Teaching-Learning Evaluation.*

Introduction

Higher educational institutions (HEIs) serve as the backbone of economic progress, catering to employment by supplying talent to industries. The global economy is witnessing significant expansion in higher education, and India and Gujarat are no exception to it. The pursuit of quality has gained due significance in aligning educational offerings with the demands of the fast-evolving global educational sector. Even with the introduction of the New Education Policy, 2020, growing privatization, and the entry of foreign universities have further necessitated the need for elevated educational benchmarks. Several quality development initiatives like curriculum revisions, learning resources and evaluation systems, faculty training, research, consultancy, infrastructure, student support, etc, are being focused on. The research in quality development mainly explores the accreditation criteria given by global and national bodies, but limited literature on specific aspects of quality development. A crucial quality indicator is a curriculum (e.g., relevance, adaptability to industry needs), and teaching-learning evaluation (e.g., innovative pedagogies, assessment techniques) remains insufficiently explored. The paper investigates the quality initiatives from two parameters, namely curriculum and teaching-learning evaluation, by collecting primary data from academicians in the higher educational landscape in Gujarat for State and Private universities. To maintain focus, the research deliberately excludes broader institutional elements like governance, infrastructure, student support mechanisms, institutional values, financial resources, etc. By concentrating on curriculum and

teaching-learning evaluation, the study intends to generate actionable insights that can help the stakeholders and policymakers refine educational practices and policies within Gujarat's higher educational system, contributing to regional growth and academic discourse.

Theoretical Background

The theoretical background is represented by uncovering the problem definition, literature review, definition of variables, and mapping of relationships, along with hypothesis formulation.

Problem Statement

Achieving excellence in higher education and withstanding the global competition, institutions are required to execute quality development initiatives. Quality initiatives implemented are intended to improve curriculum design and pedagogical effectiveness to deliver high-quality educational services and outcomes. In the context of Indian higher education, government bodies like the University Grants Commission (UGC), the National Assessment and Accreditation Council (NAAC), and other agencies have introduced various frameworks to gauge the quality of educational institutions. Despite exploring the quality initiatives, the measurable impact of curriculum and teaching-learning evaluation remains unexplored, especially for state and private universities of Gujarat. The curriculum and pedagogy being challenged are highlighted in the NITI Aayog Report (Expanding Quality Higher Education through States and State Public Universities, 2025). The effectiveness of these institutions may vary depending on their type due to differences in resource allocation, governance structures, and academic freedom available. The paper studies the institution type as an independent factor in the relationship between quality initiatives and educational outcomes, to be examined using curriculum design and teaching-learning evaluation, leaving stakeholders, academic administrators, and policymakers without a clear contextual understanding of such efforts. The findings can be useful to the theoretical discourse on quality assurance and will offer practical understanding to policymakers, accrediting agencies, management, and institute leaders to refine quality strategies in different educational contexts.

Literature Review

Higher education in India, precisely in Gujarat, has experienced exponential growth over the past few decades, driven by increasing private universities, policy reforms like NEP, 2020. Quality indicators like accreditation frameworks, digital transformation, and standardized evaluation have been introduced to improve curricular aspects and teaching and learning evaluation. However, their impact on Gujarat's educational landscape is unexplored, with limited region-specific studies. The section on literature review synthesis relevant studies focusing on three major themes, namely quality and quality development initiatives, curricular aspects, and teaching-learning evaluation in higher education.

- **Quality and Quality Development Initiatives**

According to the (Quality Assurance Agency for Higher Education, 2023), quality in higher education is defined as the achievement of positive outcomes in learning, personal growth, and career advancement by higher education institutions. It places due weight on meeting reasonable expectations of stakeholders, namely students, employers, the government, and society at large. Professional and academic thriving, relevant and challenging learning experiences, a culture of continuous improvement, fair and transparent student opportunities, use of external expertise, assessment as a learning tool, student engagement in academic decisions, and meaningful student progression are key parameters of quality given.

According to (Gupta, 2021), quality in university education is challenged by several problems, like funding, political interference, outdated syllabi, despite the efforts by the National Institutional Ranking Framework (NIRF). The research further highlights the problem in Gujarat's higher education due to inconsistent regulatory oversight, leading to inconsistent quality standards. According to (Ramadania Ramadania et al., 2024), focus is on digital transformation as a quality indicator, finding that tools like learning management systems enhance curriculum delivery but need a huge investment in creating facilities and infrastructure and faculty training. The finding highlights the resource constraints to implement quality initiatives in Gujarat.

According to (Clemons and Jance, 2024), the quality of higher education is given significance because of the growing global demand and associated challenges. Quality is a multi-dimensional concept that takes into account different stakeholders' needs and has been defined as academic quality, student-centricity, institutional quality, and market-driven quality. Academic quality includes curriculum, faculty expertise, research output, and student-centered quality, depending on learning experience,

employability, and skill development. Institutional quality is based on governance, infrastructure, and resource allocation, while market-driven quality is focused on graduate employability and employer satisfaction.

(Harvey and Green, 1993)define educational quality as a multifaceted concept with different perspectives considering quality as exceptional, quality as perfection or consistency, quality as fitness for purpose, quality as value for money, and quality as transformative. An educational institution may aspire for excellence, consistent processes (perfection), and mission alignment (fitness for purpose), but tensions emerge due to differing philosophical foundations (organizational culture and values) absoluteness in exceptional quality in comparison to relativism in perfection, and fitness for purpose and political conflicts, value for money prioritizing cost over transformative benefits.

- **Curricular Aspects**

According to the NITI Aayog report (Expanding Quality Higher Education through States and State Public Universities, 2025), the report aims to enhance the quality of higher education in India with a focus on State Public Universities. The report aligns with India's vision of becoming 'Viksit Bharat' (Developed India) by 2047. It emphasizes higher education as a critical driver of human capital development, innovation, and economic growth. India has the largest working-age population and the second-largest higher education system in the world. The introduction of NEP, 2020, intends to double down on the gross enrolment ratio of students from 28.4% to 50% by 2035, with a key role being played by state private universities. One of the obstacles found in consultation with stakeholders is the quality of education. Quality is a critical factor as it lags India behind in the global market, and challenges identified include research deficiency, pedagogy and curriculum, digitalization, and Internationalization.

(Chakrabarty and Singh, 2023)study emphasizes that curriculum design is key to quality development, with NEP 2020 advocating for interdisciplinary, outcome-based education. The study proposes a teaching-learning framework to ensure equity and inclusion, arguing that bringing equality standardization in the curriculum and nation-level evaluations can reduce disparities.

According to (Bernice Worlanyo Nyadzi, Paul Kwadwo Addo and Matthew Kwabena Okrah, 2024)examine quality at the University of Mines and Technology through a qualitative approach by interviewing 14 officials across four levels -Departmental Board, Faculty Board, Academic Board, and Planning and Quality Assurance Unit. Quality is ensured by alignment of curriculum design with the following regulations, consideration of current and future needs, and involvement of different stakeholders (students, employers, parents, etc.) to get diverse perspectives and make it more refined. Even certain challenges like deadlines, limited expert input, delayed accreditation, and generic frameworks are also highlighted in curriculum design.

A study conducted by (Fagrell, Fahlgren and Gunnarsson, 2020) in Sweden examines external stakeholders' views in designing curricula and quality work in higher education. The research explores the external perspective by measuring the perception of stakeholders' collaboration with universities and what they hope to influence in educational programs.

The major findings from the study highlight that they are seen as just advisors and not decision-makers, even if they are not clear about the internal processes of academic institutions. Academic processes are often slow and don't reflect the immediate outcomes of their feedback and involvement. They always emphasize producing work-ready graduates and not participating in internal processes.

According to (Liu, 2020), research conducted in Ontario on the impact of quality assurance on curriculum development highlights that it is deeply rooted in outcome-based standards and has a dual focus on accountability and improvement. The research intends to generate insights from diverse institutional responses to reshape the curriculum, and it has positive and negative findings. Quality assurance processes have enhanced curriculum coherence, fostered professional growth, and improved practices. However, some university faculty resisted the outcomes-based approach of quality assurance on the grounds of accountability pressure, even though college faculty faced workload and time challenges, and ideological resistance.

- **Teaching-Learning Evaluation**

Teaching-learning evaluation is a critical area for quality control. (Quansah et al., 2024), in a study, validated findings that students are primarily bringing inconsistencies because of biases not directly related to teaching quality, but indicators like instructors' charisma or course difficulty level. Research suggests psychometric instruments to improve evaluation reliability. A study by Li et al. (2022)

describes evaluation in a broader sense, noting that it gives tenure and course development, along with subjectivity involved in evaluation.

(Frick et al., 2009), explore the impact of evaluations on teaching quality has led to findings like students value more grades and not learning from instructors or teachers, another important outcome is students are unable to measure their learning and only remain focused on grades, learning didn't vary based on teachers characteristics like gender, nationality or tenure of working, while when there were significant variations in learning because of instructor but students evaluation was not reflecting the same by getting more interest or enrolling further in advance courses in same subject.

(Hosie, Schibeci and Backhaus, 2005) discuss evaluation in an online context and talk about the consideration of technical features beyond traditional checklists. They came up with a new approach to evaluation with "context-bound evaluations". The findings of the research reveal that checklists help in knowing strengths and weaknesses, and students' feedback leads to meaningful improvements. Hence offers a balanced approach for evaluation.

In their 2005 paper, Peter Hosie, Renato Schibeci, and Ann Backhaus argue that evaluating online learning in higher education requires more than traditional checklists, which focus on technical features but miss the broader educational context. They propose combining checklists with "context-bound evaluations"—testing materials with actual students and faculty—to assess pedagogical quality effectively. The study introduces a framework and checklist developed at Edith Cowan University (ECU), focusing on pedagogies, resources, and delivery strategies, which was tested on an online security management course. Findings show that while checklists identify strengths and weaknesses, student feedback (e.g., calls for more collaboration via Blackboard) drives meaningful improvements, emphasizing the need for instructional design tailored to diverse learners. This dual approach offers a practical tool for enhancing online education's quality and cost-effectiveness, inviting further refinement as digital learning grows.

The above literature focuses on the significance of quality criteria in enhancing curricular aspects and teaching-learning evaluation in Indian universities. Moreover, their application in Gujarat remains unexplored. By addressing these gaps, Gujara's higher education can better align with national and global quality standards, bringing better educational results and scope for all stakeholders.

Defining Variables

The Independent variable in the study is a type of institution, namely, state and private universities of Gujarat, which influence perceptions of quality outcomes. The dependent variable is curriculum quality, which is measured using Likert-scale type statements, and teaching-learning evaluation is again measured by perceptions of teaching methods, evaluation systems, and feedback.

Hypothesis Formulation

The following testable hypotheses are proposed:

H^1: Academicians in private universities perceive significantly higher Curriculum Quality compared to those in state universities of Gujarat.

H^2: Academicians in private universities perceive significantly higher Teaching-Learning Evaluation compared to those in state universities of Gujarat.

Methodology

Research Design

The study was conducted using a quantitative research design with a survey method to collect the data about institutions' type on curricular aspects and teaching-learning evaluation in Gujarat.

Research Objectives

- To compare perceptions of state and private universities in Gujarat on curriculum quality.
- To compare perceptions of state and private universities in Gujarat on teaching-learning evaluation.
- To assess whether institutional type (State vs. Private) influences the perceived quality of curricular aspects and teaching-learning processes.

Population and Sample

The study population includes academicians designated as principals, professors (associate and assistant professors), and IQAC for NAAC coordinators from state and private universities of Gujarat,

as they are the key stakeholders in implementing quality initiatives. A purposive sampling method with 92 respondents was selected from different state and private universities in Gujarat.

Data Collection Method

Data were collected using a structured questionnaire design and floated online by checking the LinkedIn profiles of academicians through Google Forms. The questionnaire includes personal details like gender, designation, stream of education, etc. It even contains Likert-Scale statements on curricular aspects covering flexibility, relevance, revision, consultation of stakeholders' feedback, updating it from students' feedback, and transitioning to a semester system has helped to improve the quality and overall development parameters of curriculum design. While statements on teaching-learning evaluation include maintaining students' data, and the use of modern teaching aids, students and teachers are updated with subject developments, university evaluation systems, and mechanisms to measure students' progress, regularity of evaluation, and meeting with industry requirements.

Data Analysis

The analysis to test the hypothesis (H1-H2) uses descriptive statistics. Computing mean scores and standard deviations to summarize perceptions on curriculum and teaching-learning evaluations. The frequency tables give demographic breakdowns (gender, designation, stream of education, university type, etc.) to contextualize findings. To measure the reliability of data, Cronbach's Alpha was calculated for all the subscales (Statements 1-7 and 8-14 on Curriculum Aspects and Teaching-Learning Evaluation). The analysis uses Independent Samples T-Tests to test H1 and H2, comparing mean scores between Gujarat State and Private universities. Cronbach's Alpha was run on Jasp software to check the reliability, and Shapiro-Wilk to test the normality.

Ethical Considerations

As described in the questionnaire, all data collected are used only for academic purposes. Participation was voluntary and with informed consent implied by survey completion. Responses collected were stored securely.

Limitations

The following are the limitations of the study:

- The purposive sampling method may limit generalizability beyond the surveyed institutions.
- The study highlights only two aspects of quality initiatives, namely curriculum aspects and teaching learning evaluation, excluding other quality dimensions.
- Respondents' perceptions may not reflect the actual outcomes of quality initiatives.

Results

This section presents the findings from the analysis carried out on the data from 92 respondents (academicians - 46 from the State University and 46 from the Private University of Gujarat), comparing perceptions of Curriculum Aspects (CA) and Teaching-Learning Evaluation (TLE). The analysis section includes reliability tests, normality tests, and descriptive statistics. frequency tables, and independent samples T-Tests conducted using JASP software to test the hypothesis.

Composite scores were calculated as the mean of the Statements for Curriculum Aspects (Average_CA) and Teaching Learning Evaluation (Average_TLE). Supplementary T-tests on individual statements were also calculated to explore insights.

Reliability Test

To ensure the internal consistency of the scales, Cronbach's Alpha was calculated for the items comprising Curriculum Aspects (CA1-CA7) and Teaching-Learning Evaluation (TLE1-TLE7) using JASP's Reliability Analysis module. Cronbach's Alpha = 0.895 and 0.867 for Curriculum Aspects and Teaching Learning Evaluation, respectively, indicate good reliability ($\alpha > 0.7$). Hence, both constructs confirm scales to be reliable, supporting the use of composite scores.

Normality Test

To measure the normality of scale Shapiro-Wilk test was conducted for composite scores (Average_CA, Average_TLE) for each group (State University and Private University). On Curriculum Aspects (Average_CA) for State University: $W = 0.939$, $p = 0.216$, and for Private University: $W = 0.930$, $p = 0.212$ are respectively. While on Teaching Learning Evaluation (Average_TLE) for State University: $W = 0.921$, $p = 0.193$, and Private University: $W = 0.943$, $p = 0.143$ are respectively. All p-values are

greater than 0.05, indicating that the composite scores are approximately normally distributed in both groups. Additionally, T-tests are robust to moderate normality violations with a sample size of 46 per group, supporting the validity of the subsequent analysis.

Table 1: Descriptive Statistics for Composite Scores

	Average_CA		Average_TLE	
	State University	Private University	State University	Private University
Valid	46	46	46	46
Mean	3.640	3.935	3.888	4.149
Std. Error of Mean	0.116	0.123	0.111	0.088
Std. Deviation	0.785	0.832	0.750	0.595

Descriptive statistics for the composite scores (Average_CA, Average_TLE) are presented in the above table. Means, standard deviations (SD), and standard error of mean were calculated for State and Private Universities. A private university reported higher means for both Curriculum Aspects (M=3.935 vs 3.640) and Teaching-Learning Evaluation (M=4.149 vs 3.888), with lower variability for Teaching-Learning Evaluation (SD = 0.595 vs. 0.750).

Table 2: Frequencies for Gender

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	51	55.435	55.435	55.435
Female	41	44.565	44.565	100.000
Missing	0	0.000		
Total	92	100.000		

The above table represents the classification of respondents on gender, with Male (n = 51, 55.4%) and Female (n = 41, 44.6%) respondents, with no missing data.

Table 3: Frequencies for Stream of Education

Stream of Education	Frequency	Percent	Valid Percent	Cumulative Percent
Arts	13	14.130	14.130	14.130
Commerce & Management	43	46.739	46.739	60.870
Engineering	6	6.522	6.522	67.391
Social Science & Humanities	7	7.609	7.609	75.000
Science (Medicine)	20	21.739	21.739	96.739
Computer Science and Technology	3	3.261	3.261	100.000
Missing	0	0.000		
Total	92	100.000		

The above table on the stream of education gives classification for six streams with Arts (n=13, 14.1%), Commerce & Management (n=43, 46.7%), Engineering (n=6, 6.5%), Social Science & Humanities (n=7, 7.6%), Science (Medicine) (n=20, 21.7%), and Computer Science and Technology (n=3, 3.3%), with no missing data.

Table 4: Frequencies for Designation

Designation	Frequency	Percent	Valid Percent	Cumulative Percent
Assistant Professor	34	36.957	36.957	36.957
Associate Professor	3	3.261	3.261	40.217
Head of Department/ Principal/ Director.	21	22.826	22.826	63.043
IQAC/NAAC/NIRF/GSIRF Coordinator	4	4.348	4.348	67.391
Professor	30	32.609	32.609	100.000
Missing	0	0.000		
Total	92	100.000		

The above table reports the designations of respondents with Assistant Professor (n=34, 37.0%), Associate Professor (n=3, 3.3%), Head of Department/Principal/Director (n=21, 22.8%), IQAC/NAAC/NIRF/GSIRF Coordinator (n=4, 4.3%), and Professor (n=30, 32.6%), with no missing data.

Table 5: What are the Frequencies for the Name of the State (Public) University where you are currently employed?

What is the name of the State (Public) University where you are currently employed?	Frequency	Percent	Valid Percent	Cumulative Percent
Gujarat Technological University	3	3.261	6.522	6.522
Gujarat University	5	5.435	10.870	17.391
Hemchandracharya North Gujarat University	1	1.087	2.174	19.565
KSKV Kachchh University	1	1.087	2.174	21.739
Sardar Patel University	9	9.783	19.565	41.304
Saurashtra University	4	4.348	8.696	50.000
Shri Govind Guru University	2	2.174	4.348	54.348
M S University of Baroda	9	9.783	19.565	73.913
Veer Narmad South Gujarat University	12	13.043	26.087	100.000
Missing	46	50.000		
Total	92	100.000		

The table above gives the classification for State universities of Gujarat, from 46 respondents are 46 responses from Private universities. The responses are from nine State universities, with the highest responses from Veer Narmad South Gujarat University (n=12, 13.04%), followed by Sardar Patel University (n=9, 9.78%) and M S University Baroda (n=9, 9.78%), and other universities given in the table.

Table 6: What are the frequencies for the name of the private university where you are currently employed?

What is the name of the private university where you are currently employed?	Frequency	Percent	Valid Percent	Cumulative Percent
AURO University of Hospitality and Management	1	1.087	2.174	2.174
Charusat University	3	3.261	6.522	8.696
G.L.S. University	1	1.087	2.174	10.870
GSFC University	1	1.087	2.174	13.043
Ganpat University	1	1.087	2.174	15.217
Gujarat University	1	1.087	2.174	17.391
ITM Vocational University	3	3.261	6.522	23.913
Indus University	2	2.174	4.348	28.261
KPGU University	2	2.174	4.348	32.609
Marwadi University	6	6.522	13.043	45.652
Navrachana University	4	4.348	8.696	54.348
P P Savani University	2	2.174	4.348	58.696
Parul University	4	4.348	8.696	67.391
R K University	1	1.087	2.174	69.565
Sankalchand Patel University	5	5.435	10.870	80.435
Sarvajanik University	4	4.348	8.696	89.130
Shreyarth University	1	1.087	2.174	91.304
Silver Oak University	1	1.087	2.174	93.478
Uka Tarsadia University	3	3.261	6.522	100.000
Missing	46	50.000		
Total	92	100.000		

The table depicts the classification of private universities' responses from 46 respondents from Gujarat, with 46 missing values from the state universities' samples. The responses are from 19 Private

universities, with the highest responses from Marwadi University (n=6, 6.5%), followed by Sankalchand Patel University (n = 5, 5.4%) and other universities given in the table.

Table 7: Independent Samples T-Test using Composite Scores

	t	df	p	Cohen's d	SE Cohen's d
Average_CA	-1.749	90	0.084	-0.365	0.212
Average_TLE	-1.849	90	0.068	-0.385	0.212

Note. Student's t-test.

The above table presents T-test results comparing composite scores, that is average of curriculum aspects and teaching learning evaluation between State and Private Universities of Gujarat. T-statistics give degrees of freedom (df=90), p-values, and Cohen's d for the average of Curricular Aspects (t = -1.749, p = 0.084, d = -0.365) and the average of Teaching Learning Evaluation (t = -1.849, p = 0.068, d = -0.385), indicating non-significant differences.

Table 8: Assumption Checks- Test of Equality of Variances (Levene's)

	F	df1	df2	p
Average_CA	0.241	1	90	0.624
Average_TLE	0.424	1	90	0.517

The above table on Levene's test results about the average of curriculum aspects (CA) and teaching learning evaluation (TLE) verifies the equal variance assumption for the T-test for composite scores. As the CA (F = 0.241, p = 0.624) and TLE (F = 0.424, p = 0.517), with p > 0.05 indicating equal variances and hence, confirms the appropriateness of the t-test validating statistical approach.

Table 9: Group Descriptives Using Composite Scores

	Group	N	Mean	SD	SE	Coefficient of variation
Average_CA	State University	46	3.640	0.785	0.116	0.216
	Private University	46	3.935	0.832	0.123	0.212
Average_TLE	State University	46	3.888	0.750	0.111	0.193
	Private University	46	4.149	0.595	0.088	0.143

The above table gives descriptive statistics for two groups, namely state and private universities, with values of mean, standard deviation (SD), standard error (SE), and coefficient of variation (CV) for composite scores by group. For Average of Curricular Aspects, State (M = 3.640, SD = 0.785, SE = 0.116, CV = 0.216) and Private (M = 3.935, SD = 0.832, SE = 0.123, CV = 0.212); for Average of Teaching Learning Evaluation, State (M = 3.888, SD = 0.750, SE = 0.111, CV = 0.193) and Private (M = 4.149, SD = 0.595, SE = 0.088, CV = 0.143).

Table 10: Independent Samples T-Test

	t	df	p	Cohen's d	SE Cohen's d
CA1	-2.240	90	0.028	-0.467	0.214
CA2	-2.283	90	0.025	-0.476	0.214
CA3	-1.463	90	0.147	-0.305	0.211
CA4	-0.519	90	0.605	-0.108	0.209
CA5	-1.263	90	0.210	-0.263	0.210
CA6	0.311	90	0.756	0.065	0.209
CA7	-2.092	90	0.039	-0.436	0.213
TLE1	-1.752	90	0.083	-0.365	0.212
TLE2	-0.306	90	0.761	-0.064	0.209
TLE3	1.003	90	0.318	0.209	0.210
TLE4	-1.027	90	0.307	-0.214	0.210
TLE5	-3.045	90	0.003	-0.635	0.219
TLE6	-1.353	90	0.179	-0.282	0.211
TLE7	-2.633	90	0.010	-0.549	0.216

The above table presents the T-test results for individual statements on curricular aspects (CA1-CA7) and teaching learning evaluation (TLE1-TLE7). From the data, it can be inferred that there is a

significant difference for CA1 (p=0.028, d=-0467), CA2 (p = 0.025, d = -0.476), CA7 (p = 0.039, d = -0.436), TLE5 (p = 0.003, d = -0.635), and TLE7 (p = 0.010, d = -0.549), with non-significant results for others. Notes Levene's violation for TLE7 (p = 0.003).

Table 11: Assumption Checks- Test of Equality of Variances (Levene's)

	F	df1	df2	p
CA1	2.197	1	90	0.142
CA2	2.230	1	90	0.139
CA3	0.316	1	90	0.575
CA4	0.232	1	90	0.631
CA5	1.003	1	90	0.319
CA6	2.755	1	90	0.100
CA7	0.718	1	90	0.399
TLE1	0.032	1	90	0.858
TLE2	2.665	1	90	0.106
TLE3	0.438	1	90	0.510
TLE4	3.079	1	90	0.083
TLE5	3.850	1	90	0.053
TLE6	0.209	1	90	0.649
TLE7	9.405	1	90	0.003

The above table verifies the equal variance assumption for individual statement T-tests. Levene's Test results for each statement (e.g., CA1: F = 2.197, p = 0.142; TLE7: F = 9.405, p = 0.003), with TLE7 showing unequal vaiances (p< 0.05). Hence, it validates T-tests for most statements except the TLE7 violation due to variance. Welch's T-test for TLE7 is recommended due to variance violation.

Table 12: Group Descriptives

	Group	N	Mean	SD	SE	Coefficient of variation
CA1	State University	46	3.543	1.048	0.155	0.296
	Private University	46	4.022	1.000	0.147	0.249
CA2	State University	46	3.457	1.110	0.164	0.321
	Private University	46	3.957	0.988	0.146	0.250
CA3	State University	46	3.587	1.024	0.151	0.285
	Private University	46	3.891	0.971	0.143	0.250
CA4	State University	46	3.913	0.985	0.145	0.252
	Private University	46	4.022	1.022	0.151	0.254
CA5	State University	46	3.435	1.068	0.157	0.311
	Private University	46	3.739	1.237	0.182	0.331
CA6	State University	46	4.022	0.931	0.137	0.231
	Private University	46	3.957	1.074	0.158	0.271
CA7	State University	46	3.522	1.005	0.148	0.285
	Private University	46	3.957	0.988	0.146	0.250
TLE1	State University	46	4.174	0.769	0.113	0.184
	Private University	46	4.435	0.655	0.097	0.148
TLE2	State University	46	4.370	0.610	0.090	0.139
	Private University	46	4.413	0.748	0.110	0.169
TLE3	State University	46	4.196	0.806	0.119	0.192
	Private University	46	4.022	0.856	0.126	0.213
TLE4	State University	46	3.739	1.104	0.163	0.295
	Private University	46	3.957	0.918	0.135	0.232
TLE5	State University	46	3.500	1.130	0.167	0.323
	Private University	46	4.130	0.833	0.123	0.202
TLE6	State University	46	3.761	1.058	0.156	0.281
	Private University	46	4.043	0.942	0.139	0.233
TLE7	State University	46	3.478	1.188	0.175	0.341
	Private University	46	4.043	0.842	0.124	0.208

The above table summarizes means, standard deviation, standard error, and coefficient of variation for each statement on curricular aspects and teaching learning evaluation, including TLE7, State (M = 3.478, SD = 1.188, SE = 0.175, CV = 0.341) and Private (M = 4.043, SD = 0.842, SE = 0.124, CV = 0.208); other statements (e.g., CA1: State M = 3.543, Private M = 4.022) show similar trends favoring Private Universities. For TLE7, data shows higher means and lower variability in private universities, supporting Welch's T-test findings.

Table 13: Independent Samples T-Test for TLE7

	t	df	p	Cohen's d	SE Cohen's d
TLE7	-2.633	81.118	0.010	-0.549	0.216

Note. Welch's t-test.

The above chart shows Welch's T-Test result for TLE7, correcting for unequal variances: t (81.118) = -2.633, p = 0.010, Cohen's d = -0.549, SE Cohen's d = 0.216. This indicates a significant difference between State and Private Universities. Confirms that Private HEIs perceive higher evaluation reforms (TLE7), with Welch's test adjustment ensuring statistical validity despite unequal variances. The p-value (0.010) is insignificant after Bonferroni correction (α = 0.0036).

Table 14: Test of Equality of Variances (Levene's)

	F	df1	df2	p
TLE7	9.405	1	90	0.003

The above table on test of equality of variances using Levene's test for TLE7 (F = 9.405, df1 = 1, df2 = 90, p = 0.003), confirming unequal variances. Hence, it justifies the use of Welch's T-Test for TLE7, as the significant p-value (p < 0.05) invalidates the standard T-test.

Table 15: Group Descriptives for TLE7

	Group	N	Mean	SD	SE	Coefficient of variation
TLE7	State University	46	3.478	1.188	0.175	0.341
	Private University	46	4.043	0.842	0.124	0.208

The above table summarizes group-specific statistics for TLE7 to support the Welch's T-Test. It reports that State University M = 3.478, SD = 1.188, SE = 0.175, CV = 0.341, n = 46) and Private University (M = 4.043, SD = 0.842, SE = 0.124, CV = 0.208, n = 46) highlights the higher mean and lower variability in Private University, consistent with the significant Welch's T-Test results favoring Private Universities.

Discussion

The study explored the impact of quality development initiatives on perception of Curriculum Aspects and Teaching-Learning Evaluation among faculty in State and Private Universities of Gujarat, testing hypotheses that private universities report higher perceptions (H1, H2). The sample, balanced on gender, academic streams, designations & institutions (table 2-6) enhanced the findings robustness, Reliability (α = 0.895 for CA1–CA7, α = 0.819 for TLE1–TLE7) and normality for curricular aspects (CA1–CA7, State University W = 0.939, p = 0.216; Private W = 0.930, p = 0.212) and teaching-learning evaluation (TLE1–TLE7, State University W = 0.921, p = 0.193; Private W = 0.943, p = 0.143) supported the use of Independent Samples T-Tests.

Composite score analyses (table 7) show no significant differences between State and Private Universities of Gujarat for Average_CA (t(90) = -1.749, p = 0.084, d = -0.365) and Average_TLE (t(90) = -1.849, p = 0.068, d = -0.385), failing to support H1 and H2. However, near-significant p-values and moderate effect sizes suggest private universities are perceived slightly higher in terms of quality, highlighting private universities' flexibility in adopting innovative practices. The lack of significant differences in state and private universities reflects Gujarat's higher education quality initiatives like NAAC and GSIRF frameworks, which standardize practices across both types of universities, reducing perceptual gaps.

Exploratory T-Tests on individual statements (Table 10) give deeper insights. Significant differences were found inclining towards private universities for CA1 (industry relevance, p = 0.028, d = -0.467), CA2 (student development, p = 0.025, d = -0.476), CA7 (stakeholder consultation, p = 0.039, d = -0.436), TLE5 (progress monitoring, p = 0.003, d = -0.635), and TLE7 (evaluation reforms, p = 0.010, d = -0.549). For TLE7, unequal variances (Levene's p = 0.003; Table 14) necessitated Welch's T-Test

(t(81.118) = -2.633, p = 0.010, d = -0.549; Table 12), confirming Private Universites' higher perceptions of evaluation reforms. However, after Bonferroni correction (α = 0.0036), only TLE5 remained significant, suggesting robust evidence for Private Universities' superiority in monitoring student progress. The TLE7 finding, while significant at p < 0.05, should be interpreted cautiously due to the correction.

The results of private universities being quick in implementing technology-driven evaluation systems and stakeholder engagement are verified. For instance, private universities score higher on TLE7 (M = 4.043 vs. State M = 3.478; Table 15) may reflect greater adaptation of continuous assessment reforms, possibly due to fewer bureaucratic constraints compared to state universities. Similarly, CA1 and CA2 differences suggest private universities' priority towards industry-aligned curricula and holistic student development. The non-significant composite scores, contrasted with specific statement differences, indicate that while overall quality perceptions are similar. Private universities perform better in critical targeted areas critical to quality assurance.

Limitations include the reliance on self-reported perceptions, which may be influenced by institutional biases, and the absence of qualitative data to explore underlying reasons for differences. The Bonferroni correction's stringency may have masked significant differences (e.g., TLE7), and the sample's focus on Gujarat limits generalizability. Future research should be carried out on qualitative data to deepen the understanding**.**

Conclusion

The study results in no significant overall differences in curricular aspects (Average_CA) and Teaching Learning Evaluation (Average_TLE) between state and private universities of Gujarat, hence failing to accept the H1 and H2. However, exploratory analyses' findings revealed private universities outperforming state universities in specific areas, notably progress monitoring (TLE5, p = 0.003) and evaluation reforms (TLE7, p = 0.010, via Welch's T-Test), though only TLE5 remained significant after Bonferroni correction. Higher means for Private universities across most statements (e.g., TLE7: Private M = 4.043 vs. State M = 3.478) suggest a trend toward stronger quality perceptions, possibly due to greater flexibility and resource allocation. These findings highlight the effectiveness of Gujarat's quality initiatives in narrowing gaps between sectors, while identifying areas where Private HEIs lead. The study contributes to understanding quality development in Indian higher education, emphasizing the need for targeted improvements in State Universities.

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