



The Strategic Perspective of ICT and its Impact on Faculty Performance in Higher Education

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ABSTRACT

This study explores the strategic perspective of Information and Communication Technology (ICT) and its impact on the performance of government faculties in higher education, particularly within the context of Mysuru City, India. The objective is to assess how ICT integration influences teaching effectiveness, student engagement, and overall faculty performance. A descriptive research method was employed, using both primary data collected via structured questionnaires and secondary sources for supplementary insights. The sample consisted of 150 government faculty members from various higher education institutions in Mysuru, selected through convenient sampling. Descriptive statistics, ANOVA, and homogeneity tests were utilized to analyze the data. The findings are expected to highlight significant correlations between ICT usage and improved faculty performance, offering valuable insights for policy-makers and educational administrators aiming to enhance the quality of higher education.

Keywords: ICT integration, faculty performance, higher education, government faculty, correlation.

1. INTRODUCTION

The integration of Information and Communication Technology (ICT) into education has transformed traditional teaching methods, creating new opportunities and challenges for educators globally. In India, where the higher education sector is rapidly expanding, the strategic implementation of ICT is increasingly seen as a vital component in enhancing the quality of education. Government faculties, which play a crucial role in shaping the future of students, are now required to adapt to these technological advancements to improve their teaching effectiveness and performance. According to a report by the Ministry of Education, the adoption of ICT tools in Indian higher education institutions has seen a significant rise, with over 70% of colleges and universities incorporating digital platforms into their curricula by 2022. However, the effectiveness of these tools largely depends on the proficiency and willingness of faculties to integrate them into their teaching practices.

Despite the widespread availability of ICT resources, the impact on government faculties' performance remains a topic of ongoing research and debate. The strategic perspective of ICT involves not only the availability of technological tools but also the comprehensive training and support that faculties receive. Studies have shown that faculties who receive adequate ICT training demonstrate a 25% increase in teaching effectiveness compared to those who do not (World Bank, 2022). However, challenges such as limited access to resources, inadequate infrastructure, and resistance to change continue to hinder the full potential of ICT in education. This research aims to explore the strategic implementation of ICT in higher education and its impact on the performance of government faculties, with a focus on identifying key factors that contribute to successful integration and the resulting improvements in educational outcomes.

2. CONCEPTUAL BACKGROUND

The conceptual foundation of the research on the strategic perspective of ICT and its impact on government faculty performance in higher education is rooted in the broader discourse of educational technology integration. ICT in education encompasses a wide range of digital tools and platforms designed to enhance the teaching and learning process, including online learning management systems, digital collaboration tools, and interactive multimedia content. The strategic use of ICT is not merely about incorporating these technologies into the classroom but also about aligning them with institutional goals, pedagogical strategies, and the professional development of educators. The effectiveness of ICT in education is often linked to how well faculties are equipped to use these technologies to improve student engagement, learning outcomes, and overall educational quality. In this context, the adoption of ICT is seen as a crucial step towards modernizing the higher education system, making it more responsive to the needs of a digital-savvy generation of students.

The relevance of the present study lies in its focus on government faculties in higher education, a group that plays a critical role in shaping the quality of education in public institutions. Unlike their counterparts in private institutions, government faculties often face unique challenges, including limited access to resources, bureaucratic constraints, and varying levels of support for professional development. Despite these challenges, there is an increasing emphasis on the need for these educators to adapt to technological advancements and enhance their teaching practices. This study is particularly timely, given the ongoing digital transformation in education accelerated by the COVID-19 pandemic, which forced many institutions to adopt online and blended learning models. By examining the strategic perspective of ICT and its impact on faculty performance, this research aims to provide insights into how government institutions can better support their educators in leveraging technology to improve teaching effectiveness and student outcomes, ultimately contributing to the advancement of higher education in India.

3. REVIEW OF LITERATURE

Ng Chiaw Gee (2018) the study found a positive correlation between faculties' competencies and students' satisfaction at a Malaysian private tertiary institution. Data analysis using Pearson Correlation and Multiple Regression confirmed that enhanced faculty skills are linked to increased student satisfaction. **Becker, L., Beukes, L., Botha, A. et al (2004)** the research revealed that the merger of colleges into universities in South

Africa caused significant emotional trauma and uncertainty among staff. It emphasizes that poor management of these human factors could negatively impact the new institution's transformation. **Achmad Qurtubi (2018)** the study shows that effective Monitoring & Evaluation (M&E) and active faculty roles improve teaching productivity and institutional planning. It also highlights that aligning with government education policies enhances institutional development. **Mayke W. C. Vereijken et.al (2018)** the study shows that subject matter critically shapes the integration of theory and practice in teaching, highlighting limitations in each lecture. Faculties need to adapt their approaches based on the specific demands of their subjects, emphasizing the importance of tailored pedagogical strategies. **Norazmah Suhailah Abdul Malek et.al (2016)** the study shows that communication barriers between students and faculties at Universiti Teknologi Kuala Lumpur, stem from cultural and linguistic differences. For faculties, this underscores the need to develop strategies to bridge these gaps and improve classroom interactions. **Novita, Dina et.al (2021)** the Study show that participation in webinars and online training significantly improved faculty performance during the COVID-19 pandemic. This digital engagement positively impacted their teaching effectiveness and educational responsibilities. **Fazean Idris et.al (2021)** the study shows that lectures at University of Brunei Darussalam gained new skills and innovation from online teaching but faced increased stress and challenges with fair assessments. **Ian Zulfikar et.al (2021)** the study show that a positive work environment, motivation, and competence improve faculties job satisfaction, job satisfaction alone doesn't directly enhance performance. Universities should address these factors and provide recognition and support to boost overall faculty effectiveness. **Hardin et al (2020)** this study show that Faculty competence and organisational behaviour significantly boost faculty performance, while academic culture and spiritual leadership do not. Improving competence and organizational behaviour is key to enhancing faculty effectiveness. **Harisa Mardiana (2018)** the study highlights that most faculties in Tangerang City have adapted well to technological changes and online teaching, showing readiness for modern learning methods. Despite this, some still face challenges, indicating a need for continued support and training

4. PROBLEM STATEMENT

Despite the increasing integration of Information and Communication Technology (ICT) in higher education, significant gaps remain in how effectively it impacts government faculties' performance. Existing research highlights challenges such as low ICT competence, inadequate professional development, and the need for tailored pedagogical strategies. However, there is a limited understanding of how strategic ICT implementation specifically influences government faculties' performance in higher education, particularly in contexts where institutional support and training are crucial.

5. OBJECTIVE OF THE STUDY

To assess the impact of strategic ICT integration with a focus on identifying key factors that enhance their effectiveness in the performance of government faculties in higher education.

6. RESEARCH METHODOLOGY:

6.1 Descriptive Research Method: The study adopts a descriptive research method to systematically describe the impact of ICT on government faculties' performance in higher education. This method allows for a detailed understanding of the current state of ICT integration and its effects on faculty work.

6.2 Area of Sample:: The research is conducted in Mysuru, focusing on government faculties in higher education colleges within the city. Mysuru serves as a relevant context due to its blend of traditional and modern educational practices.

6.3 Convenient Sampling Method: A convenient sampling method is employed to select 150 government faculties in higher education from various colleges in Mysuru. This method is chosen for its practicality and ease of access to the target respondents.

6.4 Sampling Size: The sample size comprises 150 respondents, specifically government faculties in higher education colleges across Mysuru City.

6.5 Tools for the Study:

- **Descriptive Statistics:** This tool is used to summarize the basic features of the data, providing simple summaries about the sample and the measures.
- **ANOVA (Analysis of Variance):** ANOVA is used to determine if there are any statistically significant differences between the means of different groups, based on their ICT usage and performance levels.
- **Homogeneity Test:** This test assesses the assumption that the variance within the groups is equal, which is a prerequisite for conducting ANOVA.

6.6 Source of Data:

- **Primary Data:** Data is collected through a structured questionnaire designed to capture information on faculties' ICT competencies, usage, and its perceived impact on their performance.
- **Secondary Source:** The study also utilizes secondary data from academic journals, institutional reports, and previous studies on ICT in education to provide context and support the primary data findings.

6.7 Hypothesis of the Study

Null Hypothesis (H_0): There is no significant difference in the performance of government faculties in higher education based on their level of ICT integration.

7. DATA ANALYSIS AND INTERPRETATION

To analyze the impact of ICT integration on the performance of government faculties in higher education, data was collected from 150 respondents in Mysuru City using a structured questionnaire. The study utilizes descriptive statistics to summarize the data and ANOVA to test the hypothesis that different levels of ICT usage significantly influence faculty performance. By examining variables such as ICT training, frequency of use, and institutional support, the analysis aims to identify key factors that enhance or hinder the effectiveness of ICT in the educational context.

Table – 1 Descriptive Statistics

Variables	N	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic
ICT Training Received	150	4.040	0.940	-1.062	1.295
Years of ICT Usage	150	3.973	0.874	-1.169	2.168
Frequency of ICT Usage	150	4.080	0.848	-0.958	1.316
Perceived Ease of ICT Use	150	3.980	0.871	-0.827	0.858
Support from Institution	150	4.100	0.947	-1.261	1.725
Impact on Teaching Effectiveness	150	3.973	0.843	-0.903	1.269
Student Engagement	150	4.120	0.851	-1.028	1.438
Performance Ratings	150	4.060	0.936	-1.017	1.219

Source: Survey Data- SPSS Output

The descriptive statistics table provides insights into the variables related to ICT usage among government faculties in higher education. The mean values across all variables range between 3.973 and 4.120, indicating a generally positive perception of ICT-related factors among the respondents. The standard deviations, which range from 0.843 to 0.947, suggest a moderate level of variability in responses, implying that the perceptions are relatively consistent across the sample.

The skewness values for all variables are negative, with a range from -0.827 to -1.261, indicating a leftward skew, which means that more respondents rated these factors on the higher side of the scale. The kurtosis values, all positive and ranging from 0.858 to 2.168, indicate that the distributions of these variables are more peaked than a normal distribution, suggesting a concentration of responses around the mean.

Overall, the statistics suggest that government faculties in Mysuru generally have a favourable view of ICT usage and its impact on their teaching performance, with some variation across different dimensions of ICT integration. This analysis sets the stage for further examination using ANOVA to explore the relationships between these variables and their impact on overall faculty performance.

Table – 2 Test of Homogeneity of Variances

Variables	Levene Statistic	df1	df2	Sig.
ICT Training Received	11.6956	4	145	0.000
Years of ICT Usage	4.77692	4	145	0.001
Frequency of ICT Usage	6.32193	4	145	0.000
Perceived Ease of ICT Use	5.86108	4	145	0.000
Support from Institution	6.56514	4	145	0.000
Impact on Teaching Effectiveness	8.3633	4	145	0.000
Student Engagement	10.3011	4	145	0.000
Performance Ratings	5.57392	4	145	0.000

Source: Survey Data- SPSS Output

The results from the Test of Homogeneity of Variances, as indicated by Levene's Statistic, reveal significant findings across all variables under study. Each variable—ranging from ICT Training Received to Performance Ratings—shows a significance level (Sig.) of 0.000 or 0.001, which is below the conventional threshold of 0.05. This indicates that the variances are not equal across the different groups for all variables, suggesting heterogeneity in the distribution of responses among the participants. The significant Levene statistics for variables like "Support from Institution" (6.56514) and "ICT Training Received" (11.6956) particularly highlight a notable difference in how different groups of respondents perceive these aspects of ICT integration. These findings suggest that when conducting further analysis, such as ANOVA, the assumption of equal variances might be violated, which could impact the interpretation of results and may require adjustments or the use of alternative statistical methods.

Table – 3 ANOVA

Variables	Groups	Sum of Squares	df	Mean Square	F	Sig.
ICT Training Received	Between Groups	20.15	4	5.037	6.543	0.000
	Within Groups	111.61	145	0.770		
	Total	131.76	149			
Years of ICT Usage	Between Groups	39.12	4	9.779	18.962	0.000
	Within Groups	74.78	145	0.516		
	Total	113.89	149			
Frequency of ICT Usage	Between Groups	21.78	4	5.445	9.260	0.000
	Within Groups	85.26	145	0.588		
	Total	107.04	149			

Perceived Ease of ICT Use	Between Groups	36.14	4	9.034	17.055	0.000
	Within Groups	76.80	145	0.530		
	Total	112.94	149			
Support from Institution	Between Groups	56.49	4	14.124	26.595	0.000
	Within Groups	77.01	145	0.531		
	Total	133.50	149			
Impact on Teaching Effectiveness	Between Groups	18.76	4	4.691	7.807	0.000
	Within Groups	87.13	145	0.601		
	Total	105.89	149			
Student Engagement	Between Groups	15.31	4	3.828	5.998	0.000
	Within Groups	92.53	145	0.638		
	Total	107.84	149			
Performance Ratings	Between Groups	22.46	4	5.614	7.537	0.000
	Within Groups	108.00	145	0.745		
	Total	130.46	149			

Source: Survey Data- SPSS Output

The ANOVA results in Table 3 indicate significant differences between the groups for all variables analyzed. For each variable, the p-value (Sig.) is 0.000, well below the significance threshold of 0.05, confirming that there are statistically significant differences among the groups. For instance, "Support from Institution" shows the highest F-value of 26.595, suggesting that this variable varies the most between groups compared to others. Similarly, "Years of ICT Usage" also shows a high F-value of 18.962, indicating substantial variability in respondents' years of ICT usage across different groups. The results imply that factors such as ICT training, ease of ICT use, and institutional support significantly affect faculty performance, as evidenced by their group differences. This further emphasizes the importance of these factors in influencing the adoption and effective utilization of ICT in higher education and highlights the need for targeted interventions to address disparities in these areas.

8. RESULTS AND DISCUSSIONS

- The ANOVA results show that "ICT Training Received" has a significant influence on faculty performance, with a p-value of 0.000 and an F-value of 6.543. This suggests that the level of ICT training received by faculties significantly affects their performance in higher education institutions in Mysore City. **Hypothesis Accepted.**
- The variable "Years of ICT Usage" also shows significant differences across groups, with a p-value of 0.000 and an F-value of 18.962. This indicates that the length of experience with ICT tools directly impacts faculty's effectiveness and overall performance. **Hypothesis Accepted.**

- The frequency with which faculties use ICT tools is another critical factor, as evidenced by a significant F-value of 9.260 and a p-value of 0.000. This finding suggests that more frequent use of ICT correlates with improved faculty performance. **Hypothesis Accepted.**
- The ease with which faculties perceive the use of ICT tools significantly affects their performance, with an F-value of 17.055 and a p-value of 0.000. This implies that faculties who find ICT easy to use are more likely to perform better. **Hypothesis Accepted.**
- "Support from Institution" shows the highest F-value of 26.595, indicating that institutional support is a crucial factor in enhancing faculty performance. This result highlights the role of organizational backing in facilitating the effective use of ICT. **Hypothesis Accepted.**
- The variables "Impact on Teaching Effectiveness" and "Student Engagement" both show significant F-values (7.807 and 5.998, respectively), with p-values of 0.000. This suggests that ICT tools significantly enhance teaching effectiveness and student engagement, contributing to better overall faculty performance. **Hypothesis Accepted.**
- Institutions should prioritize comprehensive ICT training programs to equip faculties with the necessary skills. Tailored training sessions that address specific needs can help in bridging the gap between varying levels of ICT competence among faculties.
- Given the significant impact of years of ICT usage, ongoing professional development and refresher courses should be provided to ensure that faculties remain up-to-date with the latest technological advancements and best practices.
- To enhance the perceived ease of ICT use, institutions should invest in user-friendly technologies and provide ongoing technical support. This will help faculties feel more comfortable and confident in integrating ICT into their teaching practices.
- Institutions should foster a supportive environment by offering resources, mentorship, and incentives for using ICT in teaching. This could include recognizing and rewarding innovative use of technology in education, which in turn can motivate more faculties to embrace ICT tools effectively.

9. CONCLUSION

The overall observation from the research highlights the pivotal role of ICT in enhancing the performance of government faculties in higher education, particularly within Mysuru City. The significant differences observed in variables such as ICT training, years of usage, and institutional support underlines the need for targeted strategies to maximize the effectiveness of ICT integration in teaching. As technology continues to evolve, the importance of continuous professional development and institutional backing cannot be overstated. Future trends point towards a more digitalized and technologically-driven educational landscape, making it essential for institutions to stay ahead by investing in ICT infrastructure and training. By doing so, they can ensure that faculties are well-equipped to meet the demands of modern education, thereby improving teaching effectiveness and student outcomes. The study suggests that embracing these trends will not only enhance current educational practices but also pave the way for innovative teaching methodologies in the future.

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