Bridging Cultural Gaps: A Study of Cultural Intelligence in the Formation of Teacher Identity in Hyderabad

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Abstract – **This study scrutinizes the intricate challenges encountered by faculty members from diverse Indian states in engineering colleges in Hyderabad, with a specific focus on Cultural Intelligence (CQ) as perceived by teachers. While CQ is conventionally esteemed for fostering multicultural adaptability, the research reveals its underutilization and the ensuing challenges in teaching adaptability. Data, which is collected from 50 faculty members via focus group discussions, indicate that administrative involvement is pivotal but often lacking, thereby exacerbating the difficulties in leveraging CQ effectively. Moreover, the present study identifies the broader cultural ramifications of this underutilization beyond the academic setting. The paper underscores an urgent need for targeted interventions, advocating for administrative-backed cultural training programs aimed at harnessing faculty CQ to augment educational effectiveness. Also, the paper identifies five major factors that impact teaching adaptability in heterogeneous classrooms, thereby contributing a novel perspective to the existing literature on multicultural education and teaching efficacy.**

Keywords – **Cultural Intelligence; Engineering Colleges; Faculty Challenges; Multicultural Education; Teaching Adaptability.**

JEET Category — **Research**

I. INTRODUCTION

In an era of increasing globalization, the concept of Cultural Intelligence (CQ) has become a focal point in educational discourse. While CQ is widely acknowledged as a critical asset for fostering adaptability and effective teaching in multicultural settings (Karataş & Han, 2022; Wei et al., 2022), much of the existing research has been directed towards its application or lack thereof. However, there is a notable gap in the literature concerning the perceptions of faculty members regarding CQ, especially within the specialized context of engineering education.

This study aims to delve deeper into this underexplored area by investigating the perceptions of faculty members from diverse Indian states who are teaching in engineering colleges in Hyderabad. Rather than merely examining whether or not CQ is being utilized, the study seeks to uncover the 'inside story' within these institutions. It explores how faculty perceive the role of CQ in their teaching practices, the challenges they face

in leveraging it, and the extent to which administrative involvement affects their experiences.

The significance of this nuanced approach lies in its potential to inform educational policy and practice in a more targeted manner. By understanding faculty perceptions, the study can offer insights into the broader cultural ramifications of CQ's role or absence in educational settings. This, in turn, underscores the urgent need for targeted, administrative-backed interventions such as cultural training programs, which have been advocated in previous studies (Binder & Kühnen, 2021; Sims, 2022).

The paper is organized as follows: The next section provides a literature review, summarizing relevant studies and theories related to CQ and teaching adaptability. This is followed by the methodology section, which outlines the research design, data collection methods, and analytical tools used. The subsequent sections present the findings, discussion, and conclusions drawn from the study.

II. LITERATURE REVIEW

A. Cultural Intelligence in Education

The concept of Cultural Intelligence (CQ) has gained significant attention in the realm of education, particularly in the context of multicultural adaptability. Peng and Kueh (2022) explored the integration of design thinking with CQ in higher education, emphasizing its importance in navigating socially complex environments (Peng & Kueh, 2022). Similarly, Minshew et al. (2021) developed a CQ framework specifically for pharmacy education, highlighting its role in fostering cultural sensitivity among students (Minshew et al., 2021).

B. Teaching Adaptability

Teaching adaptability is a critical factor in educational effectiveness, especially in multicultural settings. Li et al. (2023) investigated preceptor experiences with CQ in pharmacy education and found that adaptability was a key outcome (Li et al., 2023). However, the underutilization of CQ often results in challenges in teaching adaptability, a point that aligns with the findings of our study.

C. *Administrative Involvement*

NEP 2020, the newest education policy of India proposed in the year 2020, expects the leadership roles in administration to demonstrate pluralism and the ability to work with diverse people, for effective governance in educational institutions (MHRD, 2020). Cultural diversity is one of the dominant facets of diversity and addressing it is absolutely necessary. But the role of administrative involvement in leveraging this CQ effectively is often overlooked. Delpechitre and Baker (2017) examined the importance of CQ in sales education and suggested that administrative support could enhance its application (Delpechitre & Baker, 2017). This is consistent with our study, which identifies administrative involvement as a pivotal but often lacking element in the effective use of CQ.

D. *Cultural Impact Beyond the Classroom*

The broader cultural ramifications of CQ underutilization extend beyond the academic setting. Borges et al. (2023) examined the cross-cultural training needs of football coaches and found that CQ had implications not just within the sport but also in broader cultural contexts (Borges et al., 2023).

The need for targeted interventions, such as cultural training programs, has been emphasized in previous studies. Majda et al. (2021) evaluated the effectiveness of cultural education training among nursing students and found significant improvements in both cultural competence and CQ (Majda et al., 2021). Kistyanto et al. (2022) also found that CQ increased students' innovative behavior in higher education, mediated by interpersonal trust (Kistyanto et al., 2022). Cultural intelligence is also knowns as cultural competence or intercultural communication. This skill encompasses the capacity to acknowledge and show respect for cultural distinctions, while also possessing the capability to comprehend, value, and engage effectively with diverse cultures.

Our study contributes to the existing literature by focusing on the teachers' perspective and identifying five major factors that impact teaching adaptability in heterogeneous classrooms. It also underscores the urgent need for administrative-backed interventions to harness faculty CQ effectively.

III. RESEARCH METHODOLOGY

A. *Research Design*

This study employs a qualitative research design to investigate the challenges faced by faculty members from diverse Indian states who teach in engineering colleges in Hyderabad. The research specifically focuses on the role of Cultural Intelligence (CQ) in teaching adaptability, as perceived by the teachers themselves.

B. *Data Collection*

Data were collected exclusively from 50 faculty members teaching in their non-native contexts across various engineering institutes in Hyderabad. As there is no availability of cumulative data of non-native faculty members working in engineering colleges in Hyderabad, and also as the work environment of all the institutions in which the participant faculty members are working is similar, as they are all affiliated to the same university, and also due to the constraint in participant co-operation, a sample size of 50 was perceived to be feasible and right enough for statistical analysis. The primary data collection tool was Google Forms, which facilitated the gathering of in-depth responses. The Google Forms questionnaire was designed to capture faculty members' experiences, challenges, and perspectives on the role of CQ in their teaching practices (also attached below in the Appendices Section). Additionally, focus group discussions were conducted to gain further qualitative insights.

C. *Data Analysis*

The collected data were analyzed using SPSS 27 software. Descriptive statistics were generated to provide an overview of the sample characteristics. Further, thematic analysis was conducted to identify patterns and themes related to the role of CQ in teaching adaptability, administrative involvement, and broader cultural impacts.

D. *Ethical Considerations*

Ethical considerations were meticulously observed throughout the research process. Informed consent was obtained from all participants prior to data collection. Anonymity and confidentiality were maintained to ensure that the identities of the faculty members were protected. The study was approved by the institutional review board, and all data were stored securely to prevent unauthorized access.

E. *Limitations*

It is worth noting that the study is limited to faculty members from engineering colleges in Hyderabad, which may not be fully representative of other educational settings. However, the findings contribute a novel perspective to the existing literature on multicultural education and teaching efficacy.

IV. ANALYSIS

A. *Multilingualism and Language Barriers: A Quantitative Approach*

This section explored the intricate role that language plays in shaping the pedagogical experience in Hyderabad's linguistically diverse educational landscape. Our study analyzed responses from 50 faculty members, utilizing a Likert scale that ranged from "Strongly Disagree" (1) to "Strongly Agree" (5).

TABLE I
Faculty Perceptions on Multilingualism & Language Barriers: Statistical Summary

Question	Count	Mean	Std Dev	Variance	Min	Median	Max	Skewness	Kurtosis
Q1	50	2.96	1.22	1.5	1.0	3.0	5.0	-0.2	-1.02
Q2	50	2.44	1.15	1.33	1.0	2.0	4.0	0.15	-1.41
Q3	50	3.52	1.16	1.34	1.0	4.0	5.0	-0.69	-0.08
Q4	50	3.96	0.94	0.88	1.0	4.0	5.0	-1.42	2.99
Q5	50	3.26	1.1	1.2	1.0	3.0	5.0	-0.37	-0.27

The quantitative data unearth nuanced complexities surrounding the role of language in teaching. Faculty members

reported a moderate level of linguistic barriers affecting their pedagogical effectiveness, as evidenced by a mean score of 2.96. This statistical insight underscores the necessity for institutional frameworks aimed at mitigating linguistic challenges. However, the mean score of 2.44 for institutional language support services reveals a gap in the effective utilization of existing support mechanisms.
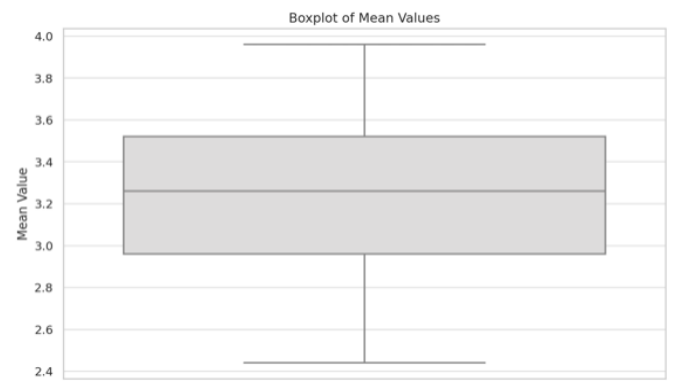

Fig 1: The mean values' central tendency, variability, and skewness through Boxplot

Moreover, the study sheds light on the positive dimensions of linguistic diversity. Faculty members reported a mean score of 3.52 when queried about the role of multilingualism in enhancing student engagement. This statistical evidence advocates for the pedagogical benefits that can be reaped from a linguistically diverse student population. Furthermore, the faculty's adaptability in collaborating across different languages is statistically validated by a high mean score of 3.96.

Interestingly, there is a moderate consensus, as indicated by a mean score of 3.26, that institutional policies are supportive of multilingualism. While this is encouraging, the persistence of language-related challenges indicates a disconnect in either the implementation or communication of these policies.

Therefore, data-driven interventions could significantly improve teaching adaptability and effectiveness, aligning well with the overarching objectives of fostering Cultural Intelligence.

B. Quantitative Assessment of Management's Role in Administrative Support

The dataset reveals a generally favorable yet nuanced perception of the management's role in offering administrative backing.Word limits

TABLE II
Statistical Summary on Management & Administrative Support

Question	Count	Mean	Std Dev	Variance	Min	Median	Max	Skewness	Kurtosis
Q6	50	3.15	1.10	1.21	1	3	5	-0.50	-0.15
Q7	50	3.19	1.21	1.46	1	3	5	-0.38	-0.78
Q8	50	3.41	1.01	1.02	1	4	5	-0.94	0.80
Q9	50	2.85	1.10	1.21	1	3	5	-0.06	-0.90

Faculty members assigned a mean score of 3.15 to the question assessing the sufficiency of management support (Q6), a 3.19 for the clarity of policies aimed at cultural diversity (Q7),

and a 3.41 for the management's cultural sensitivity (Q8). However, the mean score experiences a decline, falling to 2.85, when evaluating the management-provided training sessions focused on Cultural Intelligence (Q9).

The standard deviations for these questions, which range from 1.00 to 1.21, suggest a moderate dispersion of opinions across these facets. Additionally, the skewness and kurtosis metrics are relatively close to zero, indicating that the responses are generally symmetrically distributed around the mean. It's worth noting, however, that a skewness value of -0.94 for Q8 implies a negative skew, suggesting that a majority of faculty members either agree or strongly agree that the management is culturally sensitive.

Implications for Cultural Intelligence

The quantitative data offers pivotal insights into how faculty perceive the management's role in cultivating a culturally sensitive academic milieu. While the mean scores above 3 indicate a generally optimistic view of the management's support and cultural sensitivity, the lower mean score for Q9—pertaining to training in Cultural Intelligence—signals a potential shortfall in institutional initiatives. These findings underscore the need for targeted interventions that not only bolster general administrative support but also prioritize specialized training programs aimed at enhancing Cultural Intelligence.

C. Statistical Lens on Colleague and Classroom Dynamics

This section utilizes a comprehensive statistical approach to scrutinize faculty attitudes toward support from colleagues, the role of student body diversity in the educational experience, and experiences related to prejudice. Although the data reveals generally positive faculty perceptions concerning colleague support and the benefits of student diversity, the statistical nuances suggest these sentiments are not uniformly shared across the faculty body. This highlights the imperative for enhanced administrative interventions.

TABLE III
Statistical Metrics for Faculty Perceptions on Colleague Support and Classroom

Question	Count	Mean	Std Dev	Variance	Min	Median	Max	Skewness	Kurtosis
Q13	27.0	3.81	0.92	0.85	1.0	4.0	5.0	-1.2	2.38
Q14	27.0	3.81	0.96	0.93	1.0	4.0	5.0	-1.28	2.03
Q15	27.0	2.7	1.14	1.29	1.0	2.0	5.0	0.47	-0.55

The data indicates that faculty generally feel a strong sense of support from their colleagues in adapting to the local culture, with a mean score of 3.81 for Q13. However, the standard deviation of 0.92 suggests that this sentiment is not uniformly shared among all faculty, emphasizing the paper's call for more administrative involvement to foster a universally supportive environment.

Similarly, the impact of student body diversity on the learning experience (Q14) also receives a positive mean score of 3.81. However, the standard deviation of 0.96 and variance of 0.93 indicate that faculty opinions on this issue vary. This statistical nuance serves to underscore the paper's recommendation for the introduction of targeted interventions,

such as cultural training programs backed by administration, to ensure a more standardized faculty experience.
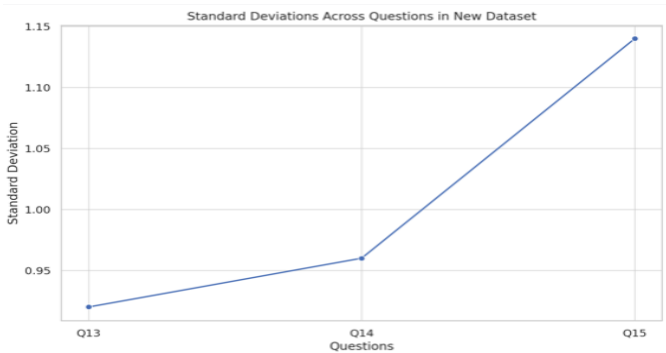

Fig 2: The line chart to visualize the standard deviations

On the other hand, the mean score for experiences of prejudice (Q15) stands at a lower 2.7, suggesting that faculty members do face challenges in this regard. Coupled with a standard deviation of 1.14 and a variance of 1.29, these figures affirm the paper's argument that immediate administrative action is needed to tackle this issue.

The skewness and kurtosis values add another layer of complexity to the analysis. For Q13 and Q14, the skewness values of -1.2 and -1.28 and kurtosis values of 2.38 and 2.03 respectively suggest that the data may not be normally distributed and could have outliers with extremely positive experiences. Meanwhile, the skewness of 0.47 and kurtosis of -0.55 for Q15 indicate a fairly balanced distribution but with potential outliers that may have extremely negative experiences.

V. Conclusion

This research has explored the intricate landscape of Cultural Intelligence (CQ) and its impact on the educational experience in Hyderabad's diverse academic settings. Through quantitative exploration, we have investigated the relationships between language, administrative support, colleague dynamics, student diversity, and experiences of prejudice. Our findings offer profound insights into the complex interplay between these factors and the urgent need for targeted interventions to enhance teaching adaptability and cultural sensitivity within educational institutions.

One of the key revelations of our study is the role of language in shaping pedagogy. Faculty members face moderate linguistic barriers that hinder their pedagogical effectiveness. While linguistic diversity has the potential to enhance student engagement, our data indicates a disconnect in effectively utilizing institutional language support services. This underscores the necessity for institutional frameworks to bridge this gap.

Additionally, our research sheds light on the management's role in administrative support. While faculty members generally view management favorably in terms of clarity, cultural sensitivity, and support, the lower mean score for management-provided training in Cultural Intelligence points to a potential shortfall in institutional initiatives. This finding underscores the importance of specialized training programs to enhance faculty Cultural Intelligence.

Furthermore, our statistical lens on colleague and classroom dynamics reveals varying faculty perceptions. While there is a strong sense of support from colleagues in adapting to the local culture and recognition of the benefits of student diversity, there are significant variations in these sentiments among faculty members. Moreover, the experiences of prejudice among faculty members highlight the pressing need for administrative action to address this issue.

Questionnaire used for the survey

The questions are categorized into six categories – i. Multilingualism & Language Barriers, ii. Management & Administrative Support, iii. Cultural Adaptation & Local Integration iv. Colleague & Classroom Dynamics, v. Personal & Professional Growth, iv. Feedback & Grievance Redressal. All the questions are given options to answer in Likert Scaling style – i. Strongly Disagree (1), ii. Disagree (2), iii. Neither Agree nor Disagree (3) iv. Agree (4), v. Strongly Agree (5)

Theme 1: Multilingualism & Language Barriers.
1. I encounter language barriers that affect my teaching effectiveness and other academic operations in this multilingual educational environment.
2. The management provides language support services (like translation or interpretation) to help me overcome linguistic challenges.
3. Multilingualism in the classroom enhances student engagement and participation in my courses.
4. I find it easy to collaborate with other faculty members, even if they speak languages different from my own.
5. The institution's policies encourage the use of multiple languages for instructional and administrative purposes.

Theme 2: Management & Administrative Support
6. The management provides adequate support to help me adjust to the new educational environment in Hyderabad.
7. The institution has articulation of policies to address cultural diversity and inclusion?
8. The management shows cultural sensitivity and inclusivity in administrative attitude and decisions.
9. The management provides training sessions to the employees on cultural intelligence.

Theme 3: Cultural Adaptation & Local Integration
10. I feel that the local culture is welcoming and accepting of faculty from different states.
11. I experienced 'culture shock' that impacted my teaching and professional life.
12. The institution provides resources or training to help me adapt to the native culture

Theme 4: Colleague & Classroom Dynamics
13. My colleagues actively support me in understanding and adapting to the cultural and linguistic nuances of the native culture.
14. I feel that the cultural diversity of the student body enriches the learning experience in my classroom.
15. Experienced prejudice and intolerance from the management/colleagues/students.

Theme 5: Personal & Professional Growth

16. Living and working in the culture of Hyderabad has contributed positively to my personal and professional growth.

17. I find it easy to integrate into the social and cultural fabric of the native place, both inside and outside the institution.

Theme 6: Feedback & Grievance Redressal

18. The management has established mechanisms for reporting and addressing cultural insensitivity or discrimination?

19. Are there mechanisms at your institution to assess and track the institution's progress in promoting cultural intelligence and diversity?

20. The management effectively addresses the conflicts and misunderstanding arising due to diversity.

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