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A Study of Professional Competency of High School Teachers in the Perspective of National Education Policy-2020 with Reference to Gender, Socio-Economic Status, Region, and Type of School

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Abstract: ***The National Education Policy (NEP) 2020 emphasizes the critical role of teachers in transforming the Indian education system. This study examines the professional competency of high school teachers in the perspective of NEP 2020, considering four key variables: gender, socio-economic status, region, and type of school. A mixed-method approach was adopted, surveying 400 high school teachers (200 male, 200 female) from various schools across [study area]. The findings reveal significant differences in professional competency based on socio-economic status and type of school, while gender and region showed moderate variations. The study concludes that NEP 2020 implementation requires targeted professional development programs addressing these differential competency levels.***

Keywords: Professional Competency, High School Teachers, National Education Policy 2020, Teacher Effectiveness, Educational Quality.

I. INTRODUCTION

The quality of an education system depends fundamentally on the quality of its teachers. The National Education Policy (NEP) 2020, approved by the Government of India, represents a paradigm shift in Indian education, placing teachers at the centre of educational transformation (Ministry of Education, 2020). The policy recognizes that teacher professional competency is not merely about subject knowledge but encompasses pedagogical skills, technological integration, inclusive practices, and continuous professional development. Professional competency refers to the knowledge, skills, attitudes, and values that enable teachers to facilitate effective learning (Darling-Hammond, 2017). In the context of NEP 2020, teacher competency has acquired new dimensions including foundational literacy and numeracy, competency-based education, multilingualism, assessment reforms, and digital pedagogy (National Education Policy, 2020). However, significant disparities exist in teacher competency across different demographic and institutional contexts. Gender differences, socio-economic backgrounds, rural-urban divides, and the government-private school dichotomy create complex patterns of professional competency that require systematic investigation (Kumar & Sharma, 2019; Mehta, 2021).

A. Background of the Study

High school education (classes 9-12) serves as a critical transition point in students' academic journey, preparing them for higher education and employment. The professional competency of high school teachers directly influences student outcomes, career choices, and overall academic achievement (Hattie, 2012).

NEP 2020 proposes major reforms at the secondary level including multiple subject choices, vocational integration, and flexible curricula. These reforms demand enhanced professional competencies from high school teachers (Bhattacharjee & Roy, 2022).

B. Need and Significance of the Study

The implementation of NEP 2020 requires a thorough assessment of existing teacher competencies to identify gaps and design appropriate interventions. This study is significant because:

1) It provides empirical evidence on teacher competency levels in the context of NEP 2020
2) It identifies disparities based on gender, socio-economic status, region, and school type
3) It offers recommendations for policy implementation and teacher development programs
4) It contributes to the limited research on NEP 2020 implementation challenges.

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II. REVIEW OF LITERATURE

A. Concept of Professional Competency

Professional competency as a multidimensional construct includes cognitive, affective, and behavioural components (Shulman, 1986). Various models have been proposed including pedagogical content knowledge (PCK), technological pedagogical content knowledge (TPACK), and competency-based teacher education frameworks (Koehler & Mishra, 2009).

B. NEP 2020 and Teacher Competency

NEP 2020 outlines specific expectations for teachers including:

1) Four-year integrated teacher education programs (ITEP)
2) Continuous Professional Development (CPD) of 50 hours annually
3) Digital literacy and online teaching capabilities
4) Special education and inclusive practices (Ministry of Education, 2020)

C. Gender and Professional Competency

Research on gender differences in teacher competency presents mixed findings. Some studies report higher competency among female teachers in certain domains (Choudhary & Singh, 2018), while others find no significant differences (Gupta, 2021). The relationship between gender and professional competency remains context-dependent.

D. Socio-Economic Status (SES) and Professional Competency

Teacher SES significantly impacts access to professional development resources, technology, and networking opportunities (Banerjee & Duflo, 2019). Teachers from higher SES backgrounds demonstrate greater competency in technology integration and innovative pedagogies (Rao, 2020).

E. Regional Differences

Rural-urban disparities in teacher competency are well-documented (MHRD, 2019). Rural teachers face challenges including limited resources, isolation from professional networks, and inadequate training facilities (Desai & Kulkarni, 2021).

F. Type of School

Government and private schools differ significantly in terms of resources, autonomy, accountability, and professional development opportunities (Singh & Sarkar, 2020). Private school teachers often demonstrate higher technological competency, while government school teachers excel in inclusive practices (Sharma, 2022).

G. Research Gap

Despite extensive literature on teacher competency, limited studies have examined this construct specifically in the perspective of NEP 2020 across multiple demographic variables simultaneously. This study addresses this gap.

III. RESEARCH METHODOLOGY

A. Objectives of the Study

1) To assess the level of professional competency among high school teachers
2) To compare professional competency based on gender (male/female)
3) To examine differences in professional competency based on socio-economic status
4) To analyse regional variations in professional competency
5) To compare professional competency between government and private school teachers

B. Hypotheses

1) H01: There is no significant difference in professional competency based on gender.
2) H02: There is significant difference in professional competency based on socio-economic status.
3) H03: There is significant difference in professional competency based on region.
4) H04: There is significant difference in professional competency based on school type.

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C. Research Design

This study employed a descriptive survey design with a mixed-method approach (Creswell & Creswell, 2018).

D. Sample

A stratified random sample of 400 high school teachers was selected from various districts:

Variable	Category	Number
Gender	Male	200
Gender	Female	200
Region	Rural	200
Region	Urban	200
School Type	Government	200
School Type	Private	200

E. Tools and Instruments

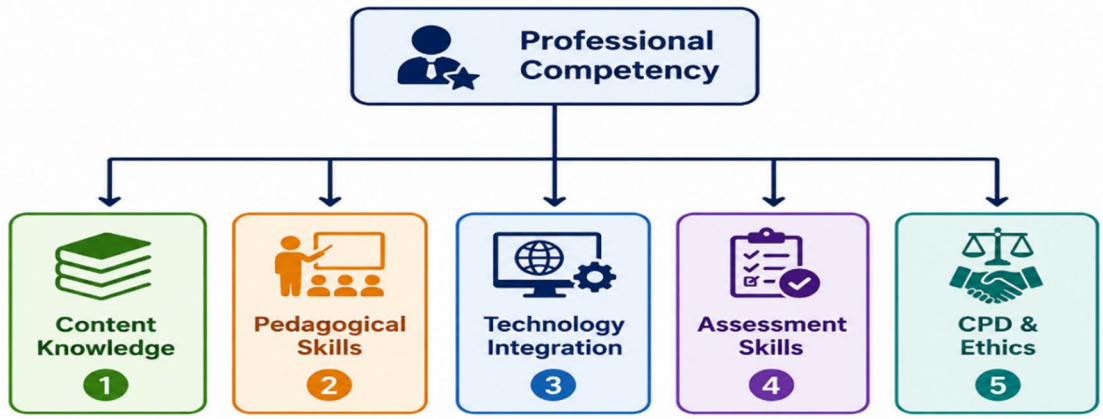
1) Teacher Professional Competency Scale (TPCS) – developed by the researcher (Cronbach's $\alpha = 0.89$)
2) Socio-Economic Status Scale – Modified Kuppuswamy Scale
3) Semi-structured Interview Schedule – for qualitative data

The TPCS measured competency across five dimensions:

- Content Knowledge (10 items)
- Pedagogical Skills (10 items)
- Technological Integration (8 items)
- Assessment Competency (8 items)
- Professional Ethics & CPD (8 items)

Total items = 44, rated on 5-point Likert scale (1-Strongly Disagree to 5-Strongly Agree)

Figure 1: Dimensions of Teacher Professional Competency



F. Data Collection Procedure

Data was collected over a period of four months through:

1) Online and offline survey administration
2) Personal visits to schools
3) Focus group discussions with 40 teachers
4) Semi-structured interviews with 20 teachers

G. Data Analysis

Quantitative data was analysed using descriptive statistics (mean, SD, percentage), inferential statistics (t-test, ANOVA, correlation), and post-hoc tests. Qualitative data was analysed using thematic analysis (Braun & Clarke, 2006).

IV. RESULTS AND ANALYSIS

A. Demographic Profile of Respondents

Table 1: Demographic Characteristics of Sample (N=400)

Variable	Category	Frequency	Percentage
Gender	Male	200	50%
Gender	Female	200	50%
Region	Rural	200	50%
Region	Urban	200	50%
School Type	Government	200	50%
School Type	Private	200	50%
SES	High	100	25%
SES	Middle	200	50%
SES	Low	100	25%

B. Overall Professional Competency Levels

Table 2: Descriptive Statistics of Professional Competency Dimensions (N=400)

Dimension	Mean	SD	Grand Mean
Content Knowledge	4.12	0.67	
Pedagogical Skills	3.89	0.72	
Technological Integration	3.45	0.89	
Assessment Skills	3.76	0.71	
Professional Ethics & CPD	3.92	0.68	
Total Professional Competency			3.83

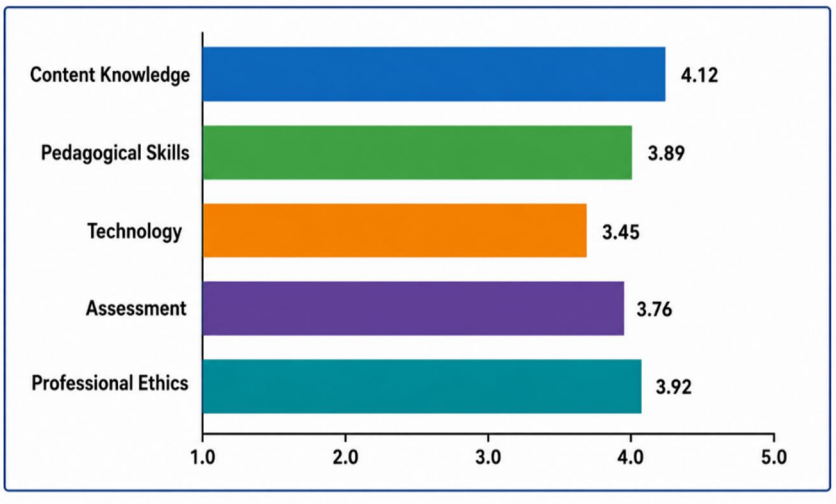


Figure 2: Mean Scores of Professional Competency Dimensions

The overall mean competency score of 3.83 indicates a moderate to high level of professional competency. Technological integration (3.45) emerged as the weakest dimension, while content knowledge (4.12) was the strongest.

C. Gender Differences in Professional Competency

Table 3: Gender-wise Comparison of Professional Competency

Gender	N	Mean	SD	t-value	p-value
Male	200	3.79	0.54	1.45	0.148
Female	200	3.87	0.51		

No significant gender differences were found ($p > 0.05$), leading to acceptance of H1. However, female teachers scored slightly higher in pedagogical skills, while male teachers scored higher in technological integration.

D. Socio-Economic Status and Professional Competency

Table 4: SES-wise Comparison of Professional Competency

SES Level	N	Mean	SD	F-value	p-value
High	100	4.21	0.42	18.67	0.000**
Middle	200	3.85	0.48		
Low	100	3.45	0.53		

Significant at 0.01 level

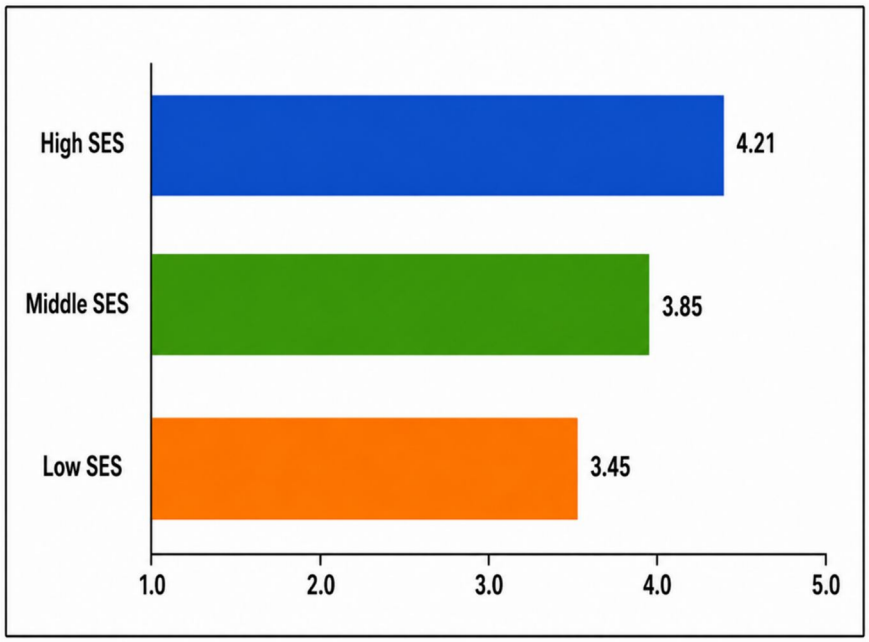


Figure 3: Professional Competency by Socio-Economic Status

Post-hoc analysis (Tukey HSD) revealed significant differences between all three SES groups ($p < 0.01$). Teachers from higher SES backgrounds demonstrated greater professional competency, particularly in technology integration and access to CPD resources.

E. Regional Differences in Professional Competency

Table 5: Regional Comparison of Professional Competency

Region	N	Mean	SD	t-value	p-value
Urban	200	4.02	0.46	5.67	0.000**
Rural	200	3.64	0.55		

Significant at 0.01 level

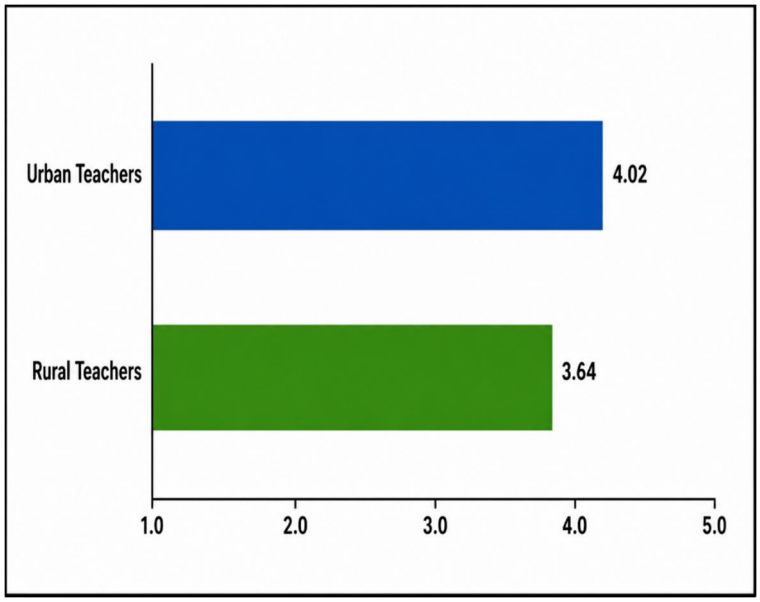


Figure 4: Urban vs Rural Teacher Competency

Urban teachers scored significantly higher than their rural counterparts. Qualitative interviews revealed that rural teachers faced challenges including limited internet connectivity (78%), lack of training opportunities (65%), and professional isolation (72%).

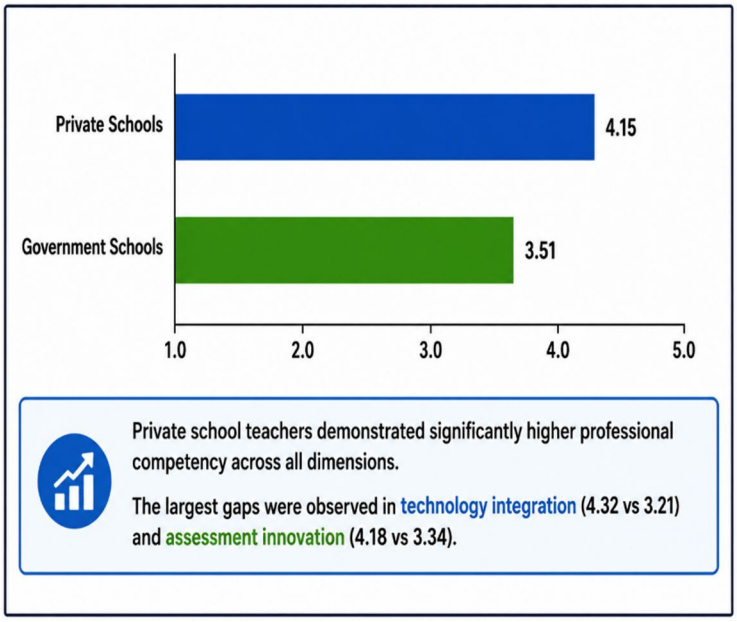
F. School Type and Professional Competency

Table 6: School Type-wise Comparison of Professional Competency

School Type	N	Mean	SD	t-value	p-value
Private	200	4.15	0.44	8.92	0.000**
Government	200	3.51	0.58		

Significant at 0.01 level

Figure 5: Professional Competency by School Type



G. Interaction Effects

Table 7: Two-way Interaction Effects (ANOVA)

Interaction	F-value	p-value	Significance
Gender × SES	2.34	0.098	NS
Gender × Region	1.87	0.172	NS
SES × Region	12.45	0.000	**
SES × School Type	15.67	0.000	**

**Significant at 0.01 level

Significant interaction effects were found between SES and region, and between SES and school type. Teachers from high SES backgrounds in urban private schools demonstrated the highest competency levels.

H. Qualitative Findings

Thematic analysis of interviews revealed five major themes:

1) NEP 2020 Awareness – 62% of teachers had limited awareness about NEP 2020 provisions
2) Technology Barriers – Rural teachers identified lack of digital infrastructure as a major constraint
3) Professional Development Needs – Teachers expressed need for subject-specific and technology training
4) Workload Challenges – Excessive administrative work reduces time for professional development
5) Motivation Factors – Recognition, salary parity, and career progression emerged as key motivators.

V. DISCUSSION

The findings of this study provide significant insights into professional competency of high school teachers in the context of NEP 2020.

1) Overall Competency Levels: The moderate to high competency level (3.83) indicates that high school teachers possess foundational competencies but require enhancement in specific areas. The low score in technological integration is particularly concerning given NEP 2020's emphasis on digital pedagogy (Mishra & Koehler, 2006; Zhao, 2019).
2) Gender Differences: The absence of significant gender differences aligns with previous research (Choudhary & Singh, 2018) but contradicts studies reporting male superiority in technology domains (Cai, 2020). This finding suggests that gender should not be a determining factor in teacher competency assessments.
3) Socio-Economic Status: The strong association between SES and professional competency highlights systemic inequalities in access to professional development resources (Banerjee & Duflo, 2019; Bourdieu & Passeron, 1990). Teachers from lower SES backgrounds require targeted support to enhance their competencies.
4) Regional Disparities: The urban-rural divide in professional competency reflects broader educational inequalities in India (MHRD, 2019; ASER, 2021). Addressing rural teacher competency requires investment in infrastructure, connectivity, and rural-specific training programs (Desai & Kulkarni, 2021).
5) School Type Differences: Private school teachers' higher competency levels may be attributed to better resources, accountability mechanisms, and professional development opportunities (Singh & Sarkar, 2020; Kingdon, 2017). However, government school teachers demonstrated strengths in inclusive practices and reaching marginalized students.

VI. CONCLUSION

A. Major Findings

1) The overall professional competency of high school teachers is moderate (M = 3.83)
2) No significant gender differences exist in professional competency
3) SES significantly influences professional competency ($F = 18.67$, $p < 0.01$)
4) Urban teachers demonstrate higher competency than rural teachers
5) Private school teachers score higher than government school teachers
6) Technological integration remains the weakest competency dimension

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B. Implications for NEP 2020 Implementation

1) Targeted Training – Develop differentiated training programs for teachers based on their competency gaps
2) Digital Infrastructure – Invest in technology infrastructure, especially in rural and government schools
3) Teacher Support Systems – Establish mentoring and peer-learning networks
4) Continuous Professional Development – Implement mandatory CPD with 50 annual hours as recommended by NEP 2020
5) Equity Focus – Provide additional support to teachers from low SES backgrounds and rural areas

C. Limitations of the Study

1) Limited geographical scope
2) Self-report measures may introduce bias
3) Cross-sectional design limits causal inferences
4) SES measurement based on self-reported data

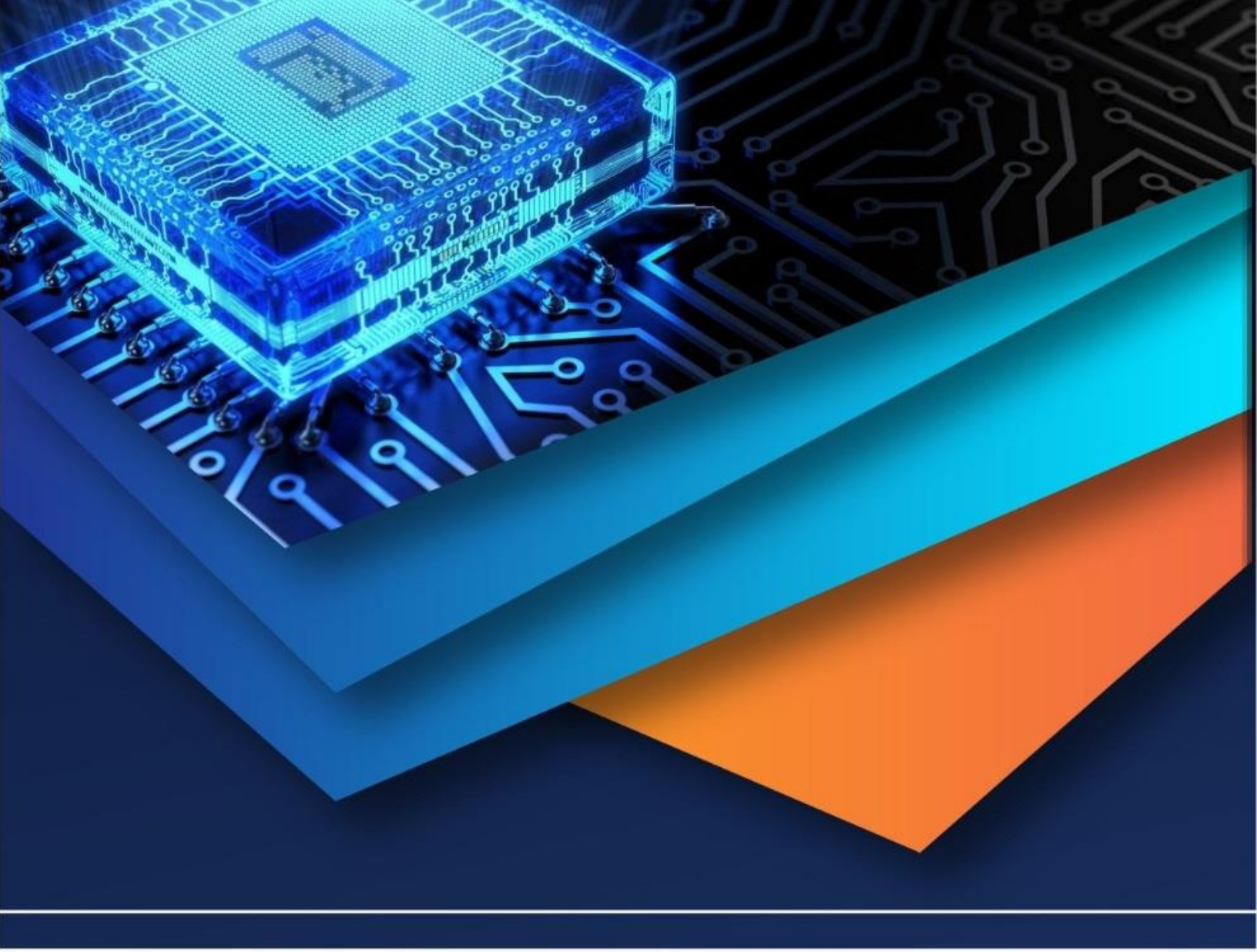
D. Suggestions for Future Research

1) Longitudinal studies examining competency development over time
2) Experimental studies testing effectiveness of specific training interventions
3) Comparative studies across different states and educational boards
4) Research examining relationship between teacher competency and student outcomes.

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