

"A COMPARATIVE STUDY OF MENTAL HEALTH, LEARNING ABILITY AND TEACHING EFFECTIVENESS OF TEACHERS IN NAGPUR DISTRICT DURING COVID 19 PANDEMIC"

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Abstract:

The COVID-19 pandemic created profound disruptions in the education system, pushing teachers into a sudden transition from traditional to digital pedagogy. This study aims to compare the mental health status, learning adaptability, and perceived teaching effectiveness of school teachers in Nagpur district during the pandemic, across various demographic and institutional factors. A descriptive comparative design was employed with a sample of 200 teachers selected through stratified random sampling. Data were collected using standardized scales for mental health (DASS-21), digital adaptability, and teaching effectiveness. Results revealed significant differences in these variables based on gender, school type, and teaching level. Mental health showed a negative correlation with teaching effectiveness, while digital adaptability was a strong predictor of teaching success in virtual settings. The findings underscore the need for psychological support, targeted digital training, and differentiated strategies for teacher preparedness in crisis contexts.

This study aims to conduct a comparative analysis of the mental health, learning adaptability, and teaching effectiveness of teachers in Nagpur district during the COVID-19 pandemic. It explores how these variables differ based on demographic and institutional factors, with the goal of identifying gaps and proposing targeted interventions.

Keywords: mental health, digital adaptability, teaching effectiveness, COVID-19, teachers, Nagpur district, comparative study

INTRODUCTION:

The COVID-19 pandemic caused a sudden and dramatic shift in the education system, compelling teachers to transition from traditional classroom teaching to remote and hybrid learning environments. This transition not only demanded technological adaptability but also imposed significant psychological stress on educators. Teachers faced challenges such as lack of training, digital fatigue, and increased workload, which potentially impacted their mental health, learning adaptability, and teaching effectiveness.

The COVID-19 pandemic brought about an unprecedented shift in education delivery. Teachers had to transition from traditional classroom teaching to remote or hybrid models, often without adequate

preparation. These sudden changes affected not only teaching strategies but also the mental well-being of educators. This study aims to compare the mental health, learning adaptability, and teaching effectiveness of teachers in the Nagpur district during the pandemic period.

In the context of Nagpur district, a diverse region comprising both urban and rural educational institutions these challenges were particularly pronounced. Understanding how teachers coped with these demands is essential for shaping future educational policies and support systems.

Literature Review:

The COVID-19 pandemic drastically affected teachers' mental health, learning adaptability, and teaching effectiveness. Studies by **Macintyre et al. (2020)** and **Kumar & Mondal (2021)** report increased stress, anxiety, and burnout among educators due to the sudden shift to online teaching and fear of uncertainty.

Teacher adaptability to digital tools became crucial. According to **Dhawan (2020)**, many teachers initially struggled but gradually developed digital skills. Younger teachers adapted more easily, while experienced ones often faced challenges without adequate training or support. Teaching effectiveness shifted from classroom delivery to engaging students online. **Ali (2020)** and **Jena (2020)** noted that teachers who used interactive tools and maintained communication with students and parents were more effective. Demographic and institutional factors such as age, experience, gender, school type, and access to training significantly influenced teachers' mental well-being, digital adaptability, and effectiveness (**Rao & Dhingra, 2021; MSCERT, 2021**).

There is a lack of region-specific research combining these three aspects. This study aims to fill that gap in the context of **Nagpur district**, offering insight into post-pandemic teacher support strategies.

OBJECTIVES:

- To assess the mental health status of teachers during the pandemic.
- To examine their adaptability to digital teaching tools.
- To evaluate perceived teaching effectiveness.
- To analyse demographic and institutional factors influencing these outcomes.

HYPOTHESES OF THE STUDY:

- H₀₁: There is no significant mental health challenge among teachers during the pandemic.
- H₀₂: Teachers do not differ significantly in their adaptability to digital teaching tools.
- H₀₃: There is no significant relationship between teachers' adaptability to digital tools, their mental health status, and their perceived teaching effectiveness.
- H₀₄: Demographic and institutional factors have no significant influence on teachers' mental health, adaptability to digital tools, or perceived teaching effectiveness during the pandemic.

METHODOLOGY:

A **descriptive comparative survey design** was used to analyse differences and relationships among the three core variables.

SAMPLE:

Population: Teachers from government and private schools in Nagpur district.

Sample Size: 200 teachers (100 from government schools, 100 from private schools).

Sampling Method: **Stratified random sampling**, ensuring representation across gender, school type, and teaching level.

TOOLS USED

Mental Health Scale: DASS-21 (Depression Anxiety Stress Scale)

Digital Adaptability Scale: Developed and validated using expert review

Teaching Effectiveness Scale: Adapted from self-perception instruments in teacher education literature.

Statistical Techniques

- **Descriptive Statistics:** Mean, standard deviation
- **Inferential Statistics:** t-test, ANOVA, Pearson correlation, and multiple regression analysis using SPSS v25

Statistical Analysis and Results

This section presents the statistical methods and findings used to analyze the data collected on mental health, digital adaptability (learning ability), and teaching effectiveness among teachers in Nagpur district during the COVID-19 pandemic.

Descriptive Statistics

Descriptive statistics provide an overview of the central tendencies and variability of the measured constructs.

Variable	Mean	Standard Deviation (SD)
Mental Health (DASS-21)	3.1	0.85
Digital Adaptability	3.7	0.72
Teaching Effectiveness	3.9	0.66

These values suggest that while teaching effectiveness and adaptability were relatively high, mental health issues were moderate among the teachers during the pandemic.

Inferential Statistics

Inferential statistics were conducted to test hypotheses and examine relationships among key variables using t-tests, Pearson correlations, and multiple regression analysis.

Independent Samples t-Test

t-tests were used to examine differences between groups (e.g., government vs. private school teachers, male vs. female teachers):

Variable	Group Compared	t-value	p-value
Mental Health	Govt vs. Private	2.34	0.021
Digital Adaptability	Male vs. Female	1.97	0.049
Teaching Effectiveness	Govt vs. Private	3.12	0.002

These results indicate significant differences, particularly in teaching effectiveness and mental health between government and private school teachers.

11.2.2 Pearson Correlation Analysis

Correlation analysis examined the relationships among the three main constructs.

Variables	Mental Health	Adaptability	Teaching Effectiveness
Mental Health	1.00	-0.31	-0.46
Adaptability	-0.31	1.00	0.52
Teaching Effectiveness	-0.46	0.52	1.00

- Mental health was **negatively correlated** with both adaptability and teaching effectiveness.
- Digital adaptability was **positively correlated** with teaching effectiveness.

Multiple Regression Analysis

A multiple regression analysis was conducted to determine whether mental health and adaptability predicted teaching effectiveness.

- **R² = 0.42** (i.e., 42% of the variance in teaching effectiveness was explained by mental health and adaptability).
- Both predictors were statistically significant.

Predictor	Unstandardized Coefficient (B)	Standard Error	p-value
Mental Health	-0.39	0.08	0.001
Adaptability	0.43	0.09	0.000

This implies:

- Teachers with better mental health showed higher teaching effectiveness.
- Teachers who adapted better to digital tools were significantly more effective in their teaching.

The findings indicate that female and private school teachers faced more mental health challenges, likely due to job insecurity and increased workload. Younger teachers showed higher adaptability, possibly due to their greater comfort with digital platforms. Teaching effectiveness was closely tied to both adaptability and mental health, emphasizing the need for institutional support.

Conclusion

This study provides valuable insights into the experiences of teachers in Nagpur district during the COVID-19 pandemic. While many adapted effectively to digital tools and maintained high teaching effectiveness, mental health challenges were evident—particularly among teachers in government schools and female educators. The data revealed that poor mental health significantly hindered teaching effectiveness, whereas strong digital adaptability enhanced it.

These findings underscore the dual need to support teachers' emotional well-being and provide continuous digital skill development. Investing in mental health programs and structured ICT training can empower teachers to manage stress and sustain instructional quality, even in times of crisis. This research highlights the critical role of institutional support in shaping teacher performance during unprecedented disruptions like a pandemic.

Recommendations

- **Strengthen Mental Health Support** through counselling and stress management programs.
- **Enhance Digital Training** with regular workshops on online teaching tools.
- **Develop Crisis-Ready Systems** including blended learning plans and tech-readiness.
- **Support Female Teachers** with flexible policies and peer networks.
- **Recognize Teacher Efforts** to boost motivation during challenging times.
- **Policy Integration** of mental health and digital skills in teacher training.

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