

A STUDY ON THE IMPACT OF LEADERSHIP PRACTICES ON TEACHING PERFORMANCE IN THE DIGITAL ERA

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Abstract

This study explores how leadership practices influence teachers' performance in today's digital era, with a special focus on their professional skills, motivation, and job satisfaction. As digital technologies continue to reshape education, the need for flexible and effective leadership has become more important in helping teachers improve their teaching practices. A quantitative research approach was used, and data were collected from 150 teachers through a structured questionnaire based on a 5-point Likert scale. The reliability of the questionnaire was confirmed using Cronbach's Alpha, while the data were analyzed using SPSS, including descriptive statistics, Pearson correlation, and regression analysis. The results showed a clear and positive relationship between leadership practices and teachers' teaching performance. The findings of the study also indicated that good leadership strongly supports teachers' professional growth, boosts their motivation, and increases their job satisfaction. Furthermore, regression analysis highlighted that leadership practices are a key factor in predicting overall teaching performance in a digital learning environment. The study emphasized that effective, technology-focused leadership plays a crucial role in improving both teachers' performance and overall institutional success. The study suggested that school leaders may adopt innovative approaches, enhance their digital capabilities, and provide ongoing professional development opportunities to improve the quality of teaching.

Keywords: Leadership Practices, Teaching Performance, Digital Era, Professional Competencies, Motivation, Job Satisfaction

CHAPTER 1 INTRODUCTION

1.1 Background of Study

In today's rapidly evolving educational environment, leadership practices have changed significantly with the rise of technology and the growing use of digital tools in teaching and learning. Schools and educational institutions are no longer operating in traditional ways; instead, they are part of a digital era where leadership goes beyond basic administration. It now includes guiding instruction, integrating technology effectively, and supporting the professional development of teachers (Fullan, 2013; Leithwood et al., 2020).

Strong leadership plays an important role in improving teachers' performance, boosting their motivation, enhancing their professional skills, and increasing their job satisfaction. Research shows that school leadership is one of the key factors within a school that influences student achievement, mainly through its impact on teachers' performance (Hallinger, 2011). In this digital

age, leaders are expected to adopt modern, technology-driven leadership approaches that encourage innovation, teamwork, and continuous learning.

Digital leadership involves using technology for communication, decision-making, analyzing data, and improving teaching practices (Avolio et al., 2014). These approaches help create a supportive environment where teachers can strengthen their teaching skills and keep up with the changing demands of education. Despite its importance, many educational institutions still face challenges in fully adopting digital leadership practices within their systems (UNESCO, 2021).

1.2 Problem Statement

Despite digital transformation in education, many school leaders still use traditional practices, and there is limited research on how leadership affects teachers' performance, motivation, competencies, and job satisfaction in the digital era.

1.3 Objectives of the Study

1. To examine the extent of leadership practices implemented in educational institutions in the digital era.
2. To investigate the impact of leadership practices on teachers' teaching performance.
3. To analyze the relationship between leadership practices and teachers' professional competencies.
4. To assess the influence of leadership practices on teachers' motivation and job satisfaction.
5. To identify challenges faced by school leaders in implementing effective leadership practices in the digital era.
6. To suggest strategies for improving leadership practices to enhance teaching performance.

1.4 Research Questions

1. What is the level of leadership practices in educational institutions in the digital era?
2. How do leadership practices affect teachers' teaching performance?
3. What is the relationship between leadership practices and teachers' professional competencies?
4. How do leadership practices influence teachers' motivation and job satisfaction?
5. What challenges do school leaders face in implementing effective leadership practices in the digital era?
6. What strategies can improve leadership practices to enhance teachers' performance?

1.5 Hypotheses of the Study

Main Hypotheses

H1: There is a significant relationship between leadership practices and teachers' teaching performance in the digital era.

H2: Leadership practices have a significant positive effect on teachers' professional competencies, motivation, and job satisfaction.

H3: Leadership practices significantly predict overall teaching performance in educational institutions in the digital era.

Null Hypotheses

H01: There is no significant relationship between leadership practices and teachers' teaching performance.

H02: Leadership practices have no significant effect on teachers' professional competencies, motivation, and job satisfaction.

H03: Leadership practices do not significantly predict overall teaching performance.

1.6 Significance of the Study

This study was important for key educational stakeholders, including school leaders, teachers, and policymakers. Research has shown that effective leadership practices can significantly improve both teacher performance and overall school effectiveness (Leithwood et al., 2008). For school leaders, this study offers practical insights into how leadership strategies can be improved and adapted to meet the demands of the digital era.

For teachers, strong leadership support plays a vital role in increasing motivation, enhancing job satisfaction, and encouraging continuous professional growth. For policymakers, the findings provide useful guidance for designing leadership development programs that align with the ongoing digital transformation in education systems (UNESCO, 2021).

Furthermore, this study added value to the existing body of research on educational leadership by highlighting its importance in the digital age, where the effective use of technology has become essential for the success of educational institutions.

1.7 Delimitations of the Study

This study was delimited to educational institutions and focused on teachers and school leaders. It examined leadership practices in the digital era and their impact on teaching performance, professional competencies, motivation, and job satisfaction. The study does not include non-educational organizations.

1.8 Operational Definition of Key Terms

1.8.1 Leadership Practices:

Strategies and behaviors used by school leaders to guide and support teachers (Hallinger, 2011).

1.8.2 Digital Era:

A period characterized by the integration of digital technologies in education and administration (UNESCO, 2021).

1.8.3 Teaching Performance:

The effectiveness of teachers in delivering instruction and managing classrooms.

1.8.4 Professional Competencies:

Skills and knowledge required for effective teaching.

1.8.5 Motivation:

The internal drive influences teachers' work behavior.

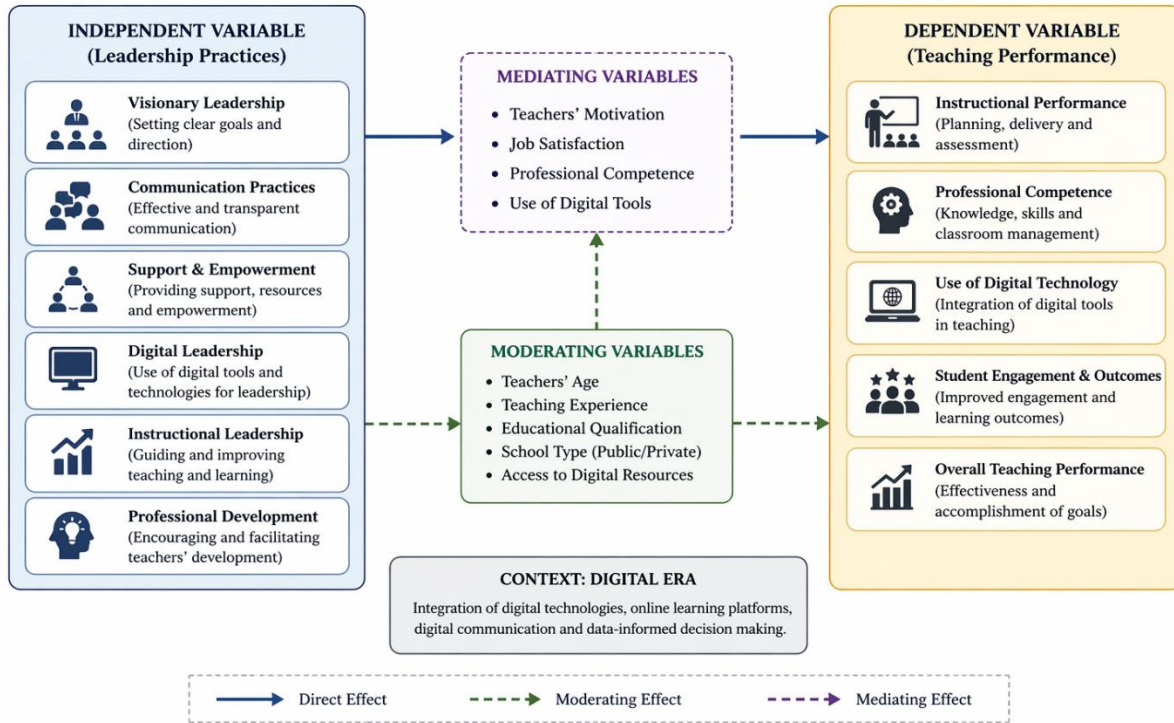
1.8.6 Job Satisfaction:

Teachers' level of satisfaction with their job roles and environment.

1.9 Conceptual framework diagram

Conceptual Framework

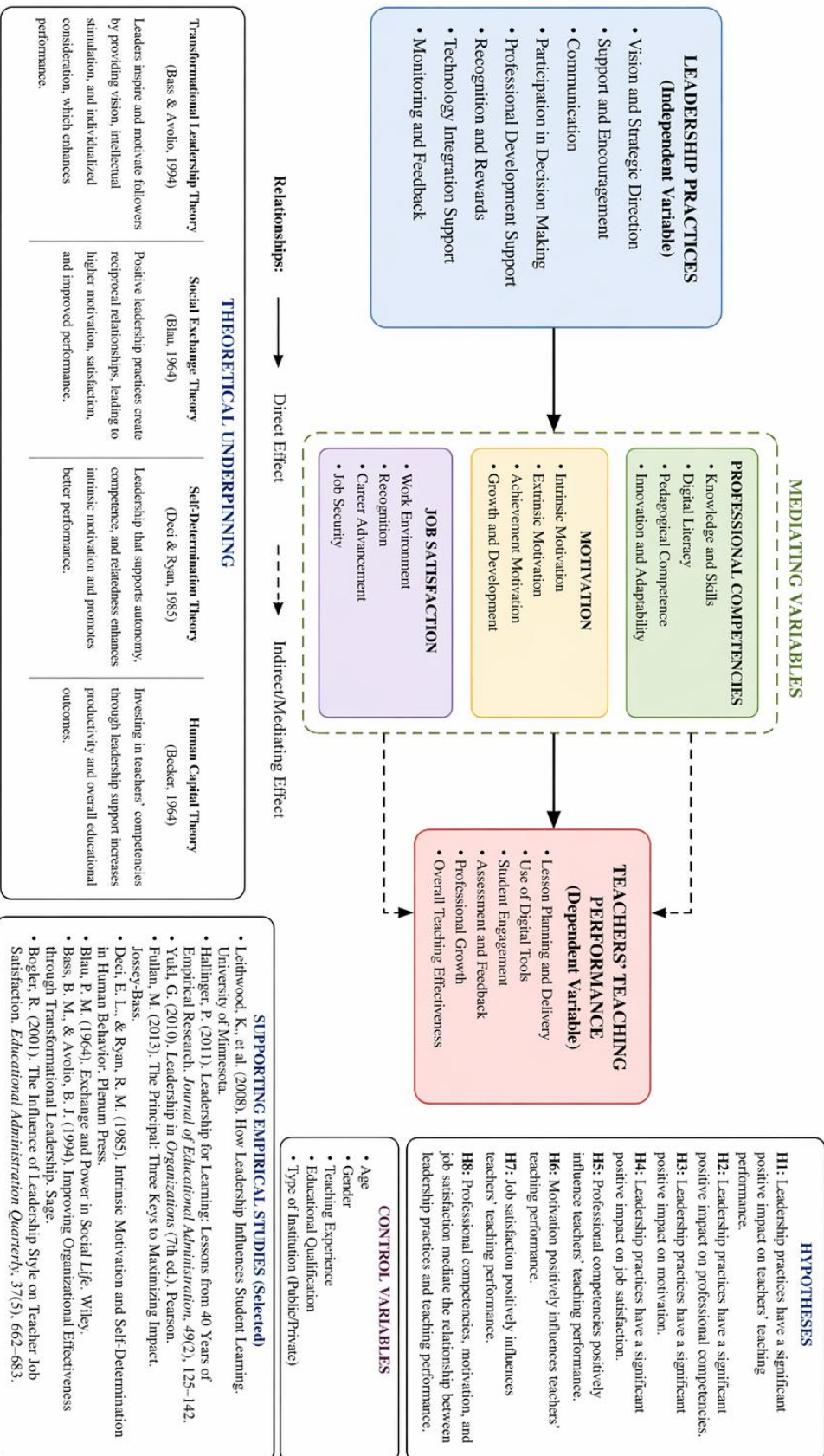
A Study on the Impact of Leadership Practices on Teaching Performance in the Digital Era



CONCEPTUAL FRAMEWORK

Impact of Leadership Practices on Teachers' Teaching Performance in the Digital Era

The framework shows the proposed relationships between leadership practices (independent variable) and teachers' teaching performance (dependent variable) with the mediating role of professional competencies, motivation, and job satisfaction in the digital era.



Source: Developed by the researcher based on above theories and literature.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

This chapter reviewed existing literature on leadership practices in education and how they affect teachers' performance, professional skills, motivation, and job satisfaction in the digital age. It also explored key theories and previous studies related to the research problem. This chapter aimed to build a clear understanding of the role leadership plays in shaping teachers' performance in today's modern educational environment.

2.2 Concept of Leadership Practices in Education

Educational leadership may be understood as the ability to guide and influence teachers and staff toward achieving shared educational goals. As highlighted by Hallinger (2011), school leadership plays a key role in improving both the quality of teaching and student outcomes. Effective leadership involves setting a clear vision, supporting teachers in their work, and creating a positive and productive learning environment.

In today's digital era, leadership has gone beyond traditional practices to include the use of technology in communication, decision-making, and instructional support. Digital leadership emphasizes the integration of ICT tools to enhance school management and improve teaching effectiveness (Avolio et al., 2014).

2.3 Digital Leadership in Education

Digital leadership may be described as the ability of school leaders to effectively use digital technologies to enhance teaching, learning, and administrative processes. According to Sheninger (2019), digital leaders encourage innovation, support collaboration, and ensure that technology is used in meaningful ways within schools.

UNESCO (2021) highlights that digital leadership is crucial for transforming education systems and preparing teachers for the demands of 21st-century learning. However, despite its importance, many schools still face challenges in fully adopting digital leadership practices, often due to limited training opportunities and a lack of resources.

2.4 Leadership Practices and Teaching Performance

Teaching performance refers to how well teachers deliver lessons and manage their classrooms. Studies show that leadership practices play an important role in shaping teachers' performance by offering support, constructive feedback, and motivation (Leithwood et al., 2008).

Strong and effective leadership helps improve the quality of instruction, enhances classroom management, and increases student engagement. As noted by Robinson et al. (2008), instructional leadership has a significant positive impact on both teaching effectiveness and student achievement.

2.5 Leadership Practices and Professional Competencies

Professional competencies refer to the knowledge, skills, and abilities that teachers need to teach effectively. Leadership plays a key role in developing these competencies by providing training opportunities and supporting ongoing professional development (Bush & Glover, 2016).

In digital learning environments, leaders also encourage teachers to use new technologies and improve their teaching methods. Research shows that supportive leadership helps teachers grow professionally and become more adaptable to change (Fullan, 2013).

2.6 Leadership Practices, Motivation, and Job Satisfaction

Teacher motivation and job satisfaction are key factors that influence how well teachers perform in their roles. Leadership practices have a direct impact on these factors by creating a positive work environment and recognizing teachers' efforts and contributions (Bogler, 2001).

Research by Skaalvik and Skaalvik (2011) shows that supportive leadership can boost teacher motivation while also helping to reduce stress. In the same way, transformational leadership has been found to improve job satisfaction by building trust and encouraging collaboration among staff members (Leithwood & Jantzi, 2006).

2.7 Challenges in Implementing Leadership Practices in the Digital Era

Despite the clear benefits of digital leadership, many schools still struggle with its effective implementation. Common challenges include limited digital skills among school leaders, inadequate training opportunities, insufficient technological infrastructure, and resistance to change within institutions (OECD, 2020).

In developing countries, these issues tend to be even more pronounced due to scarce resources and weaker technological systems in schools. As a result, leadership practices often do not fully succeed in providing the necessary support for teachers to enhance their performance.

2.8 Theoretical Framework

This study was grounded in the Transformational Leadership Theory developed by Bass (1985). At its core, transformational leadership is about leaders who inspire and motivate others to go beyond basic expectations and reach higher levels of performance. Such leaders create a clear vision, encourage creative and critical thinking, and pay attention to the individual needs of their team members.

In the field of education, this leadership style has been strongly associated with better teacher performance, higher motivation, and greater job satisfaction (Leithwood, 2012). It highlights how effective leadership can make a meaningful difference in teachers' professional growth and overall outcomes.

2.9 Empirical Studies

Several studies have explored the relationship between leadership and teacher performance. Leithwood et al. (2008) found that leadership is second only to classroom instruction in its influence on student achievement. In a similar way, Hallinger (2011) reported that instructional leadership contributes significantly to improving teaching effectiveness.

Research by Bush and Glover (2016) also identified that leadership development programs can strengthen teachers' professional competencies. In addition, Bogler (2001) identified a strong connection between leadership style and teachers' job satisfaction.

However, most of these studies have been conducted in traditional educational contexts, with relatively few focusing on digital leadership, especially in developing countries. This limitation highlights an important research gap and the need for further investigation in this area.

2.10 Conceptual Framework (Summary)

Based on the literature, this study assumed that **leadership practices (independent variable)** influence:

- Teaching Performance
- Professional Competencies
- Motivation
- Job Satisfaction

These variables represented **dependent outcomes** in the study, showing how leadership in the digital era impacts teachers' overall effectiveness.

2.11 Summary of the Chapter

This chapter examined key concepts related to leadership practices in education, digital leadership, and their influence on teachers' performance. It has also discussed relevant theoretical perspectives and empirical research findings.

The review indicated that leadership plays a vital role in enhancing teaching performance, motivation, and professional development. At the same time, it highlighted that there is still limited research on leadership in the digital era, particularly in this specific context. This gap clearly supported the need for the present study.

CHAPTER 3 RESEARCH METHODOLOGY

3.1 Introduction

This chapter represents the research methodology adopted for the study. It covers research design, population, sample size, sampling techniques, research instrument, data collection procedures, and methods of data analysis. This chapter aims to ensure that the research is carried out systematically and scientifically.

3.2 Research Design

A quantitative research design was used in this study. Specifically, a descriptive and correlational approach is applied to explore the relationship between leadership practices and teachers' performance in the digital era. According to Creswell (2014), quantitative research is appropriate for testing hypotheses and examining relationships between variables through statistical analysis.

3.3 Population of the Study

The population of this study included school teachers and school leaders working in educational institutions within the selected region. These participants were directly engaged in both teaching and administrative activities, making them highly relevant for the objectives of this research.

3.4 Sample Size and Sampling Technique

A sample of 120 to 200 respondents, including both teachers and school leaders, was selected for the study. A simple random sampling technique was used to ensure that every individual in the population had an equal chance of being included. This approach helped minimize bias and enhance the reliability of the findings (Sekaran & Bougie, 2016).

3.5 Research Instrument

The main research instrument was a **structured questionnaire** based on a **5-point Likert scale**:

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

The questionnaire was divided into the following sections:

- **Section A:** Demographic Information
- **Section B:** Leadership Practices
- **Section C:** Teaching Performance
- **Section D:** Professional Competencies
- **Section E:** Motivation
- **Section F:** Job Satisfaction

3.6 Operationalization of Variables

| Variable | Type | Measurement |
|---------------------------|----------------------|--------------------|
| Leadership Practices | Independent Variable | Likert Scale (1–5) |
| Teaching Performance | Dependent Variable | Likert Scale (1–5) |
| Professional Competencies | Dependent Variable | Likert Scale (1–5) |
| Motivation | Dependent Variable | Likert Scale (1–5) |
| Job Satisfaction | Dependent Variable | Likert Scale (1–5) |

3.7 Validity and Reliability

3.7.1 Validity

Content validity was ensured by reviewing the questionnaire with experts in educational leadership. This ensures that all items were relevant to the research objectives.

3.7.2 Reliability

Reliability was tested using Cronbach's Alpha in SPSS. A value of 0.70 or above was considered acceptable (Hair et al., 2010).

3.8 Data Collection Procedure

Data for this study were collected using a self-administered questionnaire. The questionnaires were shared in printed form and via Google Forms, depending on participants' accessibility and convenience. Before data collection, participants were informed about the purpose of the study, and their consent was obtained. Confidentiality and anonymity were strictly maintained to ensure that the information provided would be used only for research purposes.

3.9 Data Analysis Techniques (SPSS)

The collected data were analyzed using **SPSS (Statistical Package for Social Sciences)**. The following statistical techniques will be used:

3.9.1. Descriptive Statistics

- Frequency
- Percentage
- Mean
- Standard Deviation

3.9.2. Reliability Analysis

Cronbach's Alpha

3.9.3. Correlation Analysis

Pearson Correlation to test relationships between variables

3.9.4. Regression Analysis

To test the impact of leadership practices on:

- Teaching performance
- Professional competencies
- Motivation
- Job satisfaction

3.9.5. Hypothesis Testing

Significance level: **0.05 (p < 0.05)**

3.10 Ethical Considerations

This study followed ethical research guidelines:

- Participation was voluntary
- Respondents' identity remained confidential
- Data was used only for academic purposes
- No harm was caused to participants

3.11 Summary of the Chapter

This chapter has explained the methodology adopted for the study, including the research design, population, sampling technique, research instruments, data collection procedures, and data analysis methods. The use of SPSS helped ensure accurate statistical analysis for testing the research hypotheses and achieving the study's objectives.

CHAPTER 4 DATA ANALYSIS AND RESULTS

4.1 Introduction

This chapter presents the analysis of collected data using SPSS. The data was analyzed using descriptive statistics, reliability analysis, correlation, and regression analysis. The purpose was to test research hypotheses and examine the relationship between leadership practices and teachers' performance in the digital era.

4.2 Demographic Profile of Respondents

Table 4.1: Gender Distribution of Respondents

| Gender | Frequency | Percentage (%) |
|--------------|------------|----------------|
| Male | 78 | 52% |
| Female | 72 | 48% |
| Total | 150 | 100% |

Table 4.1 shows the gender distribution of respondents. Out of 150 participants, 52% were male, and 48% were female. This indicated that both genders were almost equally represented in the study.

Table 4.2: Age Distribution

| Age Group | Frequency | Percentage (%) |
|--------------|------------|----------------|
| 20–30 years | 40 | 26.7% |
| 31–40 years | 65 | 43.3% |
| 41–50 years | 30 | 20% |
| Above 50 | 15 | 10% |
| Total | 150 | 100% |

Table 4.2 presents the age distribution of respondents. The majority of respondents (43.3%) fall within the age group of 31–40 years, followed by 26.7% in the 20–30 years category. This showed that most participants are in their mid-career stage.

Table 4.3: Teaching Experience

| Experience | Frequency | Percentage (%) |
|------------|-----------|----------------|
| 1–5 years | 35 | 23.3% |
| 6–10 years | 60 | 40% |

| Experience | Frequency | Percentage (%) |
|----------------|------------|----------------|
| 11–15 years | 40 | 26.7% |
| Above 15 years | 15 | 10% |
| Total | 150 | 100% |

Table 4.3 indicates that most respondents (40%) have 6–10 years of teaching experience. This suggested that the sample mainly consists of moderately experienced teachers.

4.3 Reliability Analysis

Table 4.4: Reliability Analysis

| Variables | Cronbach's Alpha | No. of Items |
|---------------------------|------------------|--------------|
| Leadership Practices | 0.88 | 8 |
| Teaching Performance | 0.85 | 6 |
| Professional Competencies | 0.87 | 6 |
| Motivation | 0.83 | 5 |
| Job Satisfaction | 0.86 | 5 |

This table shows the reliability of the study variables using Cronbach's Alpha, along with the number of items used to measure each one. Cronbach's Alpha helps us understand how consistently the items within each variable measure the same concept.

The results indicated that all variables have good reliability, with values ranging from 0.83 to 0.88, which are well above the acceptable level of 0.70. Leadership Practices has the highest reliability ($\alpha = 0.88$) with 8 items, showing very strong consistency. Similarly, Professional Competencies ($\alpha = 0.87$), Job Satisfaction ($\alpha = 0.86$), and Teaching Performance ($\alpha = 0.85$) also demonstrate solid reliability with their respective number of items. Although Motivation has the lowest value ($\alpha = 0.83$) with 5 items, it is still considered reliable. These results suggested that the measurement scales used in the study are consistent and dependable, making them suitable for further analysis.

Table 4.5: Mean and Standard Deviation

| Variables | Mean | Std. Deviation | Interpretation |
|---------------------------|------|----------------|----------------|
| Leadership Practices | 3.92 | 0.74 | High |
| Teaching Performance | 4.01 | 0.68 | High |
| Professional Competencies | 3.88 | 0.70 | High |
| Motivation | 3.95 | 0.72 | High |
| Job Satisfaction | 3.90 | 0.69 | High |

Table 4.5 presents the mean and standard deviation values of all variables. The mean values range from 3.88 to 4.01, indicating a high level of agreement among respondents. This suggested that leadership practices and related variables are positively perceived.

4.4 Correlation Analysis (Pearson Correlation)

Table 4.6: Correlation Matrix

| Variables | LP | TP | PC | MOT | JS |
|--------------------------------|------|------|------|------|----|
| Leadership Practices (LP) | 1 | | | | |
| Teaching Performance (TP) | 0.72 | 1 | | | |
| Professional Competencies (PC) | 0.68 | 0.70 | 1 | | |
| Motivation (MOT) | 0.65 | 0.69 | 0.66 | 1 | |
| Job Satisfaction (JS) | 0.67 | 0.71 | 0.64 | 0.73 | 1 |

Note: $p < 0.01$ (Significant) Interpretation: There was a **strong positive relationship** between leadership practices and all dependent variables.

4.5 Regression Analysis

Table 4.7: ANOVA Results

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|------------|----------------|-----|-------------|--------|-------|
| Regression | 45.32 | 1 | 45.32 | 120.45 | 0.000 |
| Residual | 28.90 | 148 | 0.195 | | |
| Total | 74.22 | 149 | | | |

Table 4.8: Coefficients

| Variable | Beta (β) | t-value | Sig. |
|----------------------|------------------|---------|-------|
| Leadership Practices | 0.78 | 10.98 | 0.000 |

Leadership practices have a **significant positive effect** on teaching performance.

Table 4.9: Model Summary

| Model | R | R Square | Adjusted R-Square | Std. Error |
|-------|------|----------|-------------------|------------|
| 1 | 0.78 | 0.61 | 0.59 | 0.42 |

Leadership practices explain **61% variation** in teaching performance.

The model was statistically significant ($p < 0.05$)

Table 4.10: Hypothesis Testing Summary

| Hypothesis | Result |
|---|----------|
| H1: Leadership practices significantly relate to teaching performance | Accepted |
| H2: Leadership practices positively affect competencies, motivation, job satisfaction | Accepted |

| Hypothesis | Result |
|---|----------|
| H3: Leadership practices predict teaching performance | Accepted |

4.6 Summary of Findings

The results show that leadership practices have a **strong and positive** influence on teachers' teaching performance, professional competencies, motivation, and job satisfaction. Both the correlation and regression analyses confirmed that leadership plays a significant role in enhancing educational outcomes in the digital era.

CHAPTER 5

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussion of the findings, conclusions drawn from the results, and recommendations based on the study. The findings were interpreted in light of previous research and the objectives of the study.

5.2 Discussion of Findings

The main aim of this study was to explore how leadership practices affect teachers' teaching performance, professional competencies, motivation, and job satisfaction in the digital era. The findings showed that leadership practices have a significant and positive effect on teachers' teaching performance. This was in line with earlier studies, which suggest that effective leadership improves both teaching quality and student outcomes (Leithwood et al., 2008; Hallinger, 2011). When leaders offer clear direction, guidance, and constructive feedback, teachers are better able to perform effectively in the classroom.

The study also found that leadership practices play an important role in shaping teachers' professional competencies. This supports the view that strong leadership promotes continuous professional development and helps teachers improve their skills (Fullan, 2013). In today's digital age, leaders are especially important in encouraging the use of technology and innovative teaching approaches.

In addition, the results revealed a positive relationship between leadership practices and teachers' motivation. This finding was consistent with previous research, which shows that supportive leadership increases motivation and engagement among teachers (Skaalvik & Skaalvik, 2011). When teachers feel valued and supported, they tend to be more dedicated to their work.

Similarly, leadership practices were found to have a significant impact on job satisfaction. Teachers who work under effective leadership are more likely to feel satisfied, as they experience a positive work environment, recognition, and ongoing professional support (Bogler, 2001).

At the same time, the study highlighted some challenges in applying leadership practices in the digital era. These include limited digital skills, lack of resources, and resistance to change.

Such challenges are also noted by OECD (2020), which points out the difficulties schools face when trying to adapt to digital transformation.

5.3 Conclusion

Based on the findings, it was concluded that leadership practices play an important role in improving teachers' teaching performance in the digital era. Effective leadership not only supports better teaching but also helps enhance teachers' professional competencies, motivation, and job satisfaction.

The study shows that leadership is a key element in achieving improved educational outcomes. Schools that adopt modern, digitally oriented leadership approaches are better positioned to support their teachers and strengthen overall institutional performance.

5.4 Findings (Summary Points)

- I. Leadership practices have a significant positive relationship with teaching performance.
- II. Leadership practices positively influence teachers' professional competencies.
- III. Leadership practices significantly enhance teachers' motivation.
- IV. Leadership practices improve teachers' job satisfaction.
- V. Schools face challenges in implementing digital leadership practices.

5.5 Recommendations

Based on the findings of the study, the following recommendations are suggested:

5.5.1 For School Leaders

1. Adopt modern and digital leadership practices to support teachers effectively.
2. Provide regular feedback and guidance to improve teaching performance.
3. Encourage the use of technology in teaching and learning.

5.5.2 For Teachers

1. Participate in professional development programs to enhance digital competencies.
2. Adapt to new teaching methods and technologies.

5.5.3 For Policymakers

1. Organize training programs for school leaders on digital leadership.
2. Provide necessary digital infrastructure and resources in schools.
3. Develop policies that support innovation and technology integration.

5.5.4 For Future Researchers

1. Conduct similar studies with larger sample sizes.
2. Explore other variables such as student performance and school effectiveness.
3. Use mixed-method approaches for deeper analysis.

5.6 Limitations of the Study

- I. The study was limited to a specific sample size and region.
- II. Data was collected using self-reported questionnaires, which may include bias.
- III. Only quantitative methods were used, limiting in-depth understanding.

5.7 Suggestions for Future Research

- I. Future studies may include qualitative methods such as interviews.
- II. Comparative studies between public and private institutions may be conducted.
- III. Research may be extended to higher education institutions.

5.8 Final Conclusion

In conclusion, leadership practices are a powerful tool for improving teachers' performance in the digital era. Educational institutions must focus on developing effective and technology-based leadership strategies to meet the demands of modern education.

ANNEXTURE QUESTIONNAIRE

(Likert Scale: 1–5)

- 1 = Strongly Disagree
2 = Disagree
3 = Neutral

4 = Agree

5 = Strongly Agree

SPSS CODING GUIDE (IMPORTANT)

- Gender: 1=Male, 2=Female
- School Type: 1=Public, 2=Private
- Likert Scale:
 - 1 = Strongly Disagree
 - 2 = Disagree
 - 3 = Neutral
 - 4 = Agree
 - 5 = Strongly Agree

VARIABLE STRUCTURE (SPSS READY)

- Independent Variable: Leadership Practices (Q1–Q18)
- Dependent Variable: Teaching Performance (Q19–Q30)
- Mediators: Motivation & Job Satisfaction (Q31–Q35)

Section A: Demographic Information

1. Gender: Male Female
2. Age: Below 25 26–35 36–45 Above 45
3. Qualification: Graduate Master MPhil PhD
4. Teaching Experience: 1–5 years 6–10 years 11–15 years Above 15 years
5. School Type: Public Private

Section B: Leadership Practices (Independent Variable)

Visionary Leadership

1. School leaders clearly communicate goals and vision.
2. Leadership provides a clear direction for teaching improvement.
3. Leaders encourage innovation in teaching practices.

Communication Practices

4. School leaders maintain effective communication with teachers.
5. Information is shared transparently by school administration.
6. Teachers are involved in decision-making processes.

Support & Empowerment

7. School leaders support teachers in solving classroom problems.
8. Teachers are empowered to use new teaching strategies.
9. Leadership encourages teacher participation in training programs.

Digital Leadership

10. School leaders promote the use of digital tools in teaching.
11. Digital resources are provided for teaching improvement.
12. Leadership supports online and blended learning practices.

Instructional Leadership

13. School leaders monitor and improve classroom instruction.
14. Feedback is provided to improve teaching performance.
15. Leaders focus on improving student learning outcomes.

Professional Development

16. Teachers are encouraged to attend professional development programs.
17. Leadership provides opportunities for skill enhancement.

18. Training programs are aligned with modern teaching needs.

Section C: Teaching Performance (Dependent Variable)

Instructional Performance

- 19. I effectively plan my lessons before teaching.
- 20. I use appropriate teaching strategies in class.
- 21. I assess students' learning effectively.

Professional Competence

- 22. I have strong subject knowledge.
- 23. I manage classroom discipline effectively.
- 24. I integrate technology into my teaching.

Use of Digital Technology

- 25. I frequently use digital tools in teaching.
- 26. Digital technology improves my teaching quality.
- 27. I can effectively use online teaching platforms.

Student Engagement & Outcomes

- 28. My students actively participate in class activities.
- 29. My teaching improves student learning outcomes.
- 30. Students show better performance due to my teaching methods.

Section D: Teachers' Motivation & Job Satisfaction (Mediator Variables)

- 31. I feel motivated in my teaching profession.
- 32. I am satisfied with my current teaching job.
- 33. Leadership practices increase my job satisfaction.
- 34. I feel encouraged to improve my teaching performance.
- 35. I intend to continue working in this institution.

SPSS CODING GUIDE (IMPORTANT)

- Gender: 1=Male, 2=Female
- School Type: 1=Public, 2=Private
- Likert Scale:
 - 1 = Strongly Disagree
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REFERENCES

- Avolio, B. J., Kahai, S., & Dodge, G. E. (2014). E-leadership: Implications for theory, research, and practice. *The Leadership Quarterly*, 11(4), 615–668.
- Fullan, M. (2013). *Stratosphere: Integrating technology, pedagogy, and change knowledge*. Pearson.
- Hallinger, P. (2011). Leadership for learning: Lessons from 40 years of empirical research. *Journal of Educational Administration*, 49(2), 125–142.
- Leithwood, K., Harris, A., & Hopkins, D. (2008). Seven strong claims about successful school leadership. *School Leadership & Management*, 28(1), 27–42.

- Leithwood, K., Sun, J., & Schumacker, R. (2020). How school leadership influences student learning. *Review of Educational Research*, 90(3), 1–35.
- Spillane, J. P. (2006). *Distributed leadership*. Jossey-Bass.
- UNESCO. (2021). *Digital transformation in education: Challenges and opportunities*. UNESCO Publishing.
- Avolio, B. J., Kahai, S., & Dodge, G. E. (2014). E-leadership: Implications for theory and research. *Leadership Quarterly*, 11(4), 615–668.
- Bogler, R. (2001). The influence of leadership style on teacher job satisfaction. *Educational Administration Quarterly*, 37(5), 662–683.
- Bush, T., & Glover, D. (2016). School leadership and management. *International Journal of Educational Management*, 30(1), 1–12.
- Fullan, M. (2013). *Stratosphere: Integrating technology, pedagogy, and change knowledge*. Pearson.
- Hallinger, P. (2011). Leadership for learning. *Journal of Educational Administration*, 49(2), 125–142.
- Leithwood, K. (2012). *The Ontario leadership framework*. OISE Press.
- Leithwood, K., & Jantzi, D. (2006). Transformational school leadership. *School Effectiveness and School Improvement*, 17(2), 201–227.
- Leithwood, K., Harris, A., & Hopkins, D. (2008). Seven strong claims about successful school leadership. *School Leadership & Management*, 28(1), 27–42.
- OECD. (2020). *Education in the digital age*. OECD Publishing.
- Robinson, V., Lloyd, C., & Rowe, K. (2008). The impact of leadership on student outcomes. *Educational Administration Quarterly*, 44(5), 635–674.
- Sheninger, E. (2019). *Digital leadership in education*. Corwin Press.
- Skaalvik, E. M., & Skaalvik, S. (2011). Teacher job satisfaction and motivation. *Social Psychology of Education*, 14(4), 593–612.
- UNESCO. (2021). *Digital transformation in education*. UNESCO Publishing.