
TEACHER EFFECTIVENESS BETWEEN MALE AND FEMALE HIGHER SECONDARY SCHOOL TEACHERS: A COMPARATIVE STUDY

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ABSTRACT

Teacher effectiveness is a critical determinant of educational quality and significantly influences students' academic achievement, personal growth, and overall learning experiences [1,3,19,20]. As educational systems undergo rapid transformation due to technological advancements, curriculum reforms, and evolving pedagogical practices, the role of teachers has become increasingly complex [12,17,22]. Consequently, identifying the factors that contribute to effective teaching has become an important area of educational research [3,4,9]. Gender is one of the demographic variables frequently examined in studies on teacher performance, yet previous research has produced inconsistent conclusions regarding its influence on teaching effectiveness [14,16,18].

The study supports the adoption of gender-neutral policies in teacher recruitment, performance evaluation, and professional development [5,6,10]. It further emphasizes that effective teaching is a professional competency acquired through training, experience, reflective practice, and lifelong learning rather than an attribute determined by gender [6,19,20].

KEYWORDS: Teacher effectiveness, teachers, gender differences, professional competence, educational quality, Delhi.

INTRODUCTION

The importance of teacher effectiveness has increased substantially during the past decade due to rapid educational reforms and technological advancements [12,17,22]. Contemporary classrooms require teachers to integrate digital technologies, adopt competency-based

curricula, address diverse learning needs, and promote inclusive educational practices ^[11,12,17]. In addition to serving as subject specialists, teachers are expected to act as facilitators, mentors, counselors, innovators, and guides who support learners in developing higher-order thinking skills and lifelong learning habits ^[4,5,19].

In the Indian context, the **National Education Policy (NEP) 2020** ^[2] highlights teacher quality as one of the strongest determinants of educational excellence. The policy emphasizes learner-centered instruction, competency-based education, effective integration of educational technology, continuous professional development, and inclusive classroom practices ^[2,22]. These expectations require teachers to possess a broad range of professional competencies extending beyond traditional classroom instruction ^[3,9,19].

Teacher effectiveness is a multidimensional construct encompassing lesson planning, instructional delivery, classroom management, communication skills, assessment practices, interpersonal relationships, leadership, professional ethics, and commitment to continuous improvement ^[3,4,9,19,20]. Teachers who demonstrate these competencies create supportive learning environments that enhance student engagement, motivation, and academic performance ^[1,3,8]. Such educators are better equipped to accommodate individual differences among learners and respond effectively to changing educational demands ^[22,23,24].

Gender has long been examined as a potential factor influencing teacher effectiveness ^[14,16,18]. Traditional assumptions often suggest that female teachers demonstrate greater empathy, communication skills, and learner support, whereas male teachers may exhibit stronger classroom authority and disciplinary control. However, these perceptions are frequently shaped by cultural expectations rather than empirical evidence ^[18]. Numerous contemporary studies have reported little or no statistically significant difference in the teaching effectiveness of male and female teachers when professional qualifications, teaching experience, and institutional support are comparable ^[13,14,16,18]. These findings indicate that professional competence rather than gender plays a more significant role in determining teaching effectiveness ^[6,19,20].

Higher secondary education represents a crucial stage in students' academic and personal development because it prepares them for higher education, professional careers, and informed participation in society ^[22,23,24]. Teachers working at this level influence students' academic achievement, career choices, decision-making abilities, and overall personality development ^[1,3,19]. Therefore, understanding the factors associated with teacher effectiveness is essential for improving educational quality and ensuring positive learning outcomes ^[1,9,20].

The present study focuses on comparing the teacher effectiveness of male and female higher secondary school teachers in Delhi. By examining whether gender is associated with significant differences in teaching effectiveness, the study contributes to the growing body of educational research that supports evidence-based and equitable approaches to teacher recruitment, professional development, and performance evaluation [5,6,8,19]. The findings are expected to assist policymakers, school administrators, teacher educators, and researchers in promoting merit-based educational practices that recognize competence, professional growth, and instructional excellence as the primary indicators of teacher quality [2,10,22].

Need and Significance of the Study

Teacher effectiveness is widely acknowledged as one of the most important determinants of educational quality [1,3,19,20]. Although educational institutions invest substantial resources in curriculum development, technological advancement, infrastructure, and assessment reforms, the successful implementation of these initiatives depends primarily on teachers [2,12,22]. Competent and effective teachers facilitate meaningful learning experiences, enhance students' academic performance, and contribute significantly to their intellectual, emotional, and social development [1,3,8]. Consequently, improving teacher effectiveness has become a major concern for educational planners, policymakers, and teacher educators [5,10,22].

Higher secondary education occupies a strategic position within the Indian education system as it prepares students for higher education, professional careers, vocational training, and competitive examinations [2,22,24]. Teachers at this level play a crucial role in shaping students' academic achievement, career aspirations, decision-making abilities, values, and overall personality development [1,3,19]. Therefore, understanding the factors associated with teacher effectiveness is essential for improving educational outcomes and ensuring quality education [3,9,20].

The present study is significant because it examines teacher effectiveness among higher secondary school teachers in Delhi, where educational institutions operate within diverse social and cultural environments. The findings are expected to assist educational administrators, policymakers, school leaders, and teacher education institutions in developing evidence-based policies related to teacher recruitment, professional development, performance evaluation, and instructional improvement [2,5,6,10]. Furthermore, the study contributes to the growing body of literature supporting competency-based and gender-neutral approaches to teacher evaluation [13,14,16,18].

Statement of the Problem

The present investigation is entitled:

"Teacher Effectiveness among Male and Female Higher Secondary School Teachers: A Comparative Study."

The study aims to compare the teacher effectiveness of male and female higher secondary school teachers to determine whether gender is associated with statistically significant differences in professional teaching effectiveness [14,16,18].

Operational Definitions

Teacher Effectiveness

Teacher effectiveness refers to the extent to which teachers successfully plan, organize, implement, and evaluate instructional activities that facilitate students' academic achievement, classroom participation, personality development, and overall educational growth [3,9,19]. In the present study, teacher effectiveness was measured using the standardized **Teacher Effectiveness Scale** developed by **Pramod Kumar and D. N. Mutha (1974)** [7].

Higher Secondary School Teachers

Higher secondary school teachers refer to educators teaching students in Classes XI and XII in recognized higher secondary schools located in Delhi.

Gender

Gender refers to the classification of participants into male and female categories for the purpose of comparing teacher effectiveness in the present investigation [18].

Objectives of the Study

The study was conducted with the following objective:

1. To examine and compare the teacher effectiveness of male and female higher secondary school teachers in Delhi.

Research Hypothesis

The following null hypothesis was formulated for statistical testing:

H₀: There is no statistically significant difference in teacher effectiveness between male and female higher secondary school teachers [14,16,18].

Research Methodology

Research Design

The study employed the **descriptive survey method**, which is widely used in educational research to investigate existing conditions without manipulating variables [5,9]. This design

enables researchers to collect information from a large population, describe current educational practices, and compare naturally occurring groups. Since the purpose of the study was to examine differences in teacher effectiveness between male and female teachers under existing conditions, the descriptive survey approach was considered the most appropriate research design [5,9].

Population of the Study

The population comprised all higher secondary school teachers employed in recognized government, government-aided, and private higher secondary schools in Delhi during the academic year **2025–2026**.

Sample of the Study

A representative sample of **500 higher secondary school teachers** was selected for the investigation through **stratified random sampling**. Equal representation was provided to both gender groups to ensure balanced comparison.

Gender	Number of Teachers
Male	250
Female	250
Total	500

The selected sample adequately represented the target population and enhanced the reliability of the comparative analysis.

Sampling Technique

The present investigation adopted the **stratified random sampling technique**. This method was selected because the study intended to compare two distinct groups of teachers based on gender. The population was first divided into homogeneous strata consisting of male and female teachers. Participants were then selected randomly from each stratum.

The use of stratified sampling minimized sampling bias, ensured proportional representation of both groups, and improved the overall representativeness and reliability of the sample.

Tool

Teacher effectiveness was assessed using the **Teacher Effectiveness Scale** developed by **Pramod Kumar and D. N. Mutha (1974)**. The instrument is a standardized psychological scale designed to measure multiple dimensions of effective teaching behaviour.

The scale evaluates instructional planning, classroom management, communication skills, subject competence, evaluation practices, interpersonal relationships, professional

commitment, and other competencies associated with successful classroom instruction [7,19]. The standardized nature of the instrument contributes to greater objectivity and consistency in measuring teacher effectiveness.

Procedure for Data Collection

Prior to data collection, formal permission was obtained from the principals and management authorities of the selected higher secondary schools. The objectives and purpose of the investigation were clearly explained to the participating teachers, and confidentiality of their responses was assured.

The Teacher Effectiveness Scale was administered personally by the researcher during the academic year **2025–2026** using standardized instructions [7]. Participants were provided sufficient time to complete all items, and completed questionnaires were collected immediately to ensure completeness and accuracy.

Statistical Techniques Used

The collected data were analyzed using both descriptive and inferential statistical techniques [5,9].

The following statistical measures were employed:

- Mean
- Standard Deviation
- Independent-Samples *t*-Test

The mean and standard deviation were calculated to describe the level and variability of teacher effectiveness among male and female teachers. The independent-samples *t*-test was applied to determine whether the observed difference between the two groups was statistically significant at the **0.05 level of significance**. These statistical procedures enabled objective interpretation of the findings and facilitated testing of the research hypothesis.

Review of Literature

Teacher effectiveness has remained one of the most extensively investigated topics in educational research because of its direct relationship with students' academic achievement, classroom engagement, and overall institutional effectiveness [1,3,19,20]. Numerous studies conducted in different educational contexts have consistently shown that effective teachers significantly improve students' learning outcomes, motivation, critical thinking abilities, and socio-emotional development [1,3,8,20]. As a result, educational researchers have devoted

considerable attention to identifying the characteristics and professional competencies associated with effective teaching ^[3,4,19].

Darling-Hammond ^[1] emphasized that teacher quality is one of the strongest predictors of students' academic success and educational improvement. Similarly, Hattie ^[3,4], through extensive meta-analyses, demonstrated that teachers exert one of the greatest influences on student learning, highlighting the importance of effective instructional practices, continuous assessment, and constructive feedback. Stronge ^[19] further identified professional knowledge, instructional planning, classroom management, assessment skills, and commitment to continuous professional development as essential qualities of effective teachers.

Recent literature indicates that teacher effectiveness extends beyond mastery of subject knowledge. It includes lesson planning, classroom management, communication skills, learner engagement, assessment strategies, reflective practice, emotional intelligence, professional ethics, and the ability to establish positive teacher–student relationships ^[5,6,9,19,21]. Effective teachers also demonstrate adaptability by responding to diverse learner needs, integrating technology into classroom instruction, and creating inclusive learning environments ^[11,12,17,22].

Professional development has emerged as another significant contributor to teacher effectiveness. Korthagen ^[6] argued that reflective teaching and continuous learning enable teachers to improve instructional quality and adapt to changing educational environments. Likewise, reports published by the OECD ^[10–12] emphasized that teachers who participate regularly in professional development programmes are more likely to adopt innovative teaching practices, integrate educational technology effectively, and enhance student learning outcomes.

The implementation of the **National Education Policy (NEP) 2020** has further strengthened the emphasis on teacher quality in India ^[2]. The policy advocates learner-centred instruction, competency-based education, digital literacy, inclusive teaching practices, and continuous professional development to improve educational standards ^[2,22]. These reforms have expanded teachers' responsibilities beyond traditional classroom instruction, requiring them to function as facilitators, mentors, innovators, and lifelong learners ^[2,17].

Several empirical studies have examined the relationship between gender and teacher effectiveness. Prasad ^[13] reported that professional competence, rather than gender, plays a more important role in determining teaching effectiveness. Similarly, Rani and Sharma ^[14] found no statistically significant gender difference in teacher effectiveness among senior secondary school teachers. Sharma and Gupta ^[16] concluded that emotional intelligence and

professional commitment contribute more substantially to teacher effectiveness than demographic variables such as gender.

Research by Singh and Sharma ^[18] also indicated that male and female teachers generally demonstrate comparable instructional effectiveness when they possess similar educational qualifications, teaching experience, and institutional support. Sahu and Mishra ^[15] observed that teachers' professional commitment and motivation positively influence classroom performance regardless of gender. Likewise, Kyriakides, Creemers, and Antoniou ^[8] highlighted that instructional quality, classroom climate, and effective teaching practices have a much stronger impact on student achievement than personal demographic characteristics.

Recent international reports published by UNESCO ^[22,23] and UNICEF ^[24] have emphasized the need to strengthen teacher competencies through equitable educational policies, continuous professional development, digital readiness, and inclusive educational practices. These organizations recognize teachers as the cornerstone of sustainable educational development and stress the importance of investing in teacher capacity-building initiatives to improve learning outcomes worldwide.

Overall, the reviewed literature demonstrates that teacher effectiveness is a multidimensional professional competency shaped by pedagogical knowledge, instructional expertise, classroom management, reflective practice, professional commitment, emotional intelligence, leadership, and continuous learning opportunities ^[3,6,9,19,20,21]. Although gender has frequently been investigated as a possible influencing factor, the majority of contemporary studies indicate that effective teaching depends primarily on professional competence rather than gender ^[13–18].

In light of the available literature, the present study investigates whether a statistically significant difference exists in teacher effectiveness between male and female higher secondary school teachers in Delhi. The findings are expected to contribute to the growing body of research supporting competency-based teacher evaluation and evidence-based educational policy development ^[2,8,19,22].

Analysis and Interpretation of Data

The primary objective of the present investigation was to determine whether a statistically significant difference exists in teacher effectiveness between male and female higher secondary school teachers in Delhi. Data collected through the **Teacher Effectiveness Scale** ^[7] were analyzed using descriptive statistics (Mean and Standard Deviation) and inferential

statistics (Independent-Samples *t*-Test) [5,9]. The statistical analysis enabled an objective comparison of teacher effectiveness across the two gender groups.

Comparison of Teacher Effectiveness between Male and Female Higher Secondary School Teachers

Gender	N	Mean	Standard Deviation	Calculatevalue	Critical <i>t</i> -value (0.05)	Result
Male	250	157.6	18.1	-0.63	±1.96	Not Significant
Female	250	158.6	17.4			

Interpretation

Table presents the comparison of teacher effectiveness scores obtained by male and female higher secondary school teachers. Male teachers obtained a mean score of **157.6** with a standard deviation of **18.1**, whereas female teachers recorded a slightly higher mean score of **158.6** with a standard deviation of **17.4**. Although female teachers demonstrated a marginally higher average score, the difference between the two groups was only one point, indicating that both groups exhibited almost identical levels of teacher effectiveness.

The similarity in the standard deviation values further indicates that the variability of teacher effectiveness scores within both groups was nearly the same. This finding suggests consistency in professional performance irrespective of gender.

To determine whether the observed difference between the two groups was statistically significant, an Independent-Samples *t*-Test [5,9] was conducted. The calculated *t*-value was **-0.63**, whereas the critical *t*-value at the **0.05 level of significance** was **±1.96**.

Since the absolute value of the calculated statistic (**0.63**) is smaller than the critical value (**1.96**), the difference between male and female teachers is **not statistically significant**. Therefore, the observed variation is attributed to normal sampling variation rather than gender differences.

Accordingly, the null hypothesis stating that there is no statistically significant difference in teacher effectiveness between male and female higher secondary school teachers is accepted.

DISCUSSION OF FINDINGS

The findings of the present investigation indicate that female teachers obtained a marginally higher mean score than male teachers; however, the difference was not statistically significant. These results are consistent with previous studies reporting that teacher effectiveness is influenced primarily by professional competence rather than gender [13–20].

The findings support the work of **Darling-Hammond** ^[1], who emphasized that teacher quality is a major determinant of students' academic achievement. Likewise, **Hattie** ^[3,4] concluded that effective instructional practices, feedback, and classroom management have a greater influence on learning outcomes than demographic variables.

Similarly, **Prasad** ^[13], **Rani and Sharma** ^[14], **Sharma and Gupta** ^[16], and **Singh and Sharma** ^[18] reported that male and female teachers generally demonstrate comparable teaching effectiveness when educational qualifications, professional training, and institutional support are similar.

The findings are also consistent with **Korthagen** ^[6], who argued that reflective practice and continuous professional development improve teaching quality. Reports published by the **OECD** ^[10-12] further emphasize that teachers who regularly participate in professional learning programmes demonstrate higher instructional effectiveness and greater adaptability to educational reforms.

The results also support the objectives of the **National Education Policy (NEP) 2020** ^[2], which promotes competency-based teaching, learner-centred pedagogy, technology integration, and continuous professional development. These reforms provide equal opportunities for both male and female teachers to strengthen their instructional competencies.

Overall, the findings suggest that effective teaching is determined by pedagogical knowledge, professional commitment, classroom management, instructional expertise, reflective practice, and continuous learning rather than gender ^[6,8,19-21].

Hypothesis Testing

The null hypothesis formulated for the study stated:

H₀: There is no statistically significant difference in teacher effectiveness between male and female higher secondary school teachers.

The calculated *t*-value (**-0.63**) was lower than the critical value (**±1.96**) at the **0.05 level of significance**.

Since:

$$|-0.63| < 1.96$$

the null hypothesis was **accepted**.

Thus, statistical evidence confirms that teacher effectiveness does not differ significantly between male and female higher secondary school teachers included in the present investigation.

Educational Implications

The findings indicate that educational institutions should adopt competency-based approaches in teacher recruitment, performance appraisal, and promotion [2,5,19]. Recruitment policies should emphasize academic qualifications, pedagogical competence, instructional skills, and professional commitment instead of demographic characteristics such as gender [1,19,20].

Teacher education institutions should strengthen pre-service and in-service professional development programmes by focusing on learner-centred pedagogy, classroom management, educational technology, inclusive education, assessment practices, and reflective teaching [2,6,10–12].

School administrators should establish supportive organizational environments that encourage collaboration, innovation, lifelong learning, and professional growth [5,10]. Continuous professional development opportunities should be provided equally to all teachers regardless of gender [22–24].

Limitations of the Study

The study has the following limitations:

1. The investigation was confined to higher secondary school teachers in Delhi; therefore, the findings cannot be generalized to all educational settings.
2. Only gender was examined as the independent variable. Other variables such as teaching experience, educational qualification, emotional intelligence, organizational climate, and professional commitment were not investigated [15,16].
3. Teacher effectiveness was measured using a standardized self-report instrument [7], which may be influenced by individual response patterns.
4. The descriptive survey method identifies relationships but does not establish causal relationships [5].
5. Data were collected during a single academic year; therefore, changes over time could not be examined.

Suggestions for Future Research

Future research may:

1. Conduct similar studies in different states and educational settings.

2. Examine teacher effectiveness with respect to emotional intelligence, self-efficacy, leadership style, organizational climate, job satisfaction, and professional commitment [15,16,21].
3. Compare teacher effectiveness across government, aided, and private schools.
4. Undertake longitudinal studies to examine changes in teacher effectiveness over time.
5. Use mixed-method research involving classroom observation, interviews, and case studies.
6. Investigate the influence of artificial intelligence, digital competence, online teaching, and educational technology on teacher effectiveness [12,17,22,23].

CONCLUSION

Teacher effectiveness remains one of the strongest determinants of educational quality and student achievement [1,3,19]. The present study demonstrated that although female teachers obtained a slightly higher mean score than male teachers, the difference was not statistically significant. Therefore, the null hypothesis stating that there is no significant difference in teacher effectiveness between male and female higher secondary school teachers was accepted.

The findings indicate that effective teaching depends primarily on pedagogical knowledge, instructional competence, classroom management, professional commitment, reflective practice, and continuous professional development rather than gender [3,6,19–21]. These findings are consistent with the objectives of the **National Education Policy 2020** [2] and recommendations of international organizations such as **UNESCO** and **OECD** regarding teacher quality and educational improvement [10–12,22–24].

The study concludes that teaching excellence is a professional competency developed through education, experience, institutional support, and lifelong learning. Consequently, educational institutions should continue implementing merit-based recruitment, competency-based evaluation, equitable professional development opportunities, and evidence-based educational policies to improve teacher quality and student learning outcomes [1,2,19,22].

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