

NAVIGATING THE PEDAGOGICAL LANDSCAPE: STATISTICAL ANALYSIS OF TEACHING STRATEGIES IN ENGLISH LANGUAGE EDUCATION

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| DOI: 10.5281/zenodo.8419264 | Received October 02, 2023 | Accepted September 06, 2023 | Published October 08, 2023 | ID Article | Mohammed-Ref1-4-17ajiras021023 |

ABSTRACT

Background: This study dives into the pedagogical approaches used by English teachers, with the goal of revealing widespread teaching strategies in this setting. **Objectives:** The primary goal is to identify typical teaching approaches and investigate potential links between teacher profiles (age, years of service, and gender) and the teaching strategies used. **Methods:** We discovered that Facilitator teaching techniques are extensively used by English teachers through thorough study. The study examined instructor profiles, taking into account age, years of service, and gender, in order to identify patterns in teaching approaches. **Results:** The findings show that Facilitator teaching methods are significantly more prevalent among English teachers. Furthermore, the study finds significant relationships between age and years of service and teaching strategies. **Conclusions:** This study demonstrates the dominance of Facilitator teaching approaches in the English teaching domain. It also emphasizes that age and years of service have an impact on instructional strategies, implying that experienced and older instructors use different teaching methods. Gender, on the other hand, does not appear to be a decisive factor in the adoption of instructional tactics.

Keywords: Teaching Strategies, English Teachers, Demographic Factors, Education, Pedagogy.

1. INTRODUCTION

The Study's Background:

Teachers play a crucial role in shaping the learning environment and educational experiences of students. They employ a wide range of instructional strategies to promote effective learning, acting as instructors, mentors, and cultivators of young professionals. Teaching strategies encompass the various approaches, practices, and techniques employed by teachers [6].

Five distinct methods of instruction and mindsets have been identified: Expert, Formal Authority, Demonstrator, Facilitator, and Delegator. Each method represents a unique teaching strategy with specific features [8]:

- Expert: These teachers possess specific knowledge and competence, focusing on transferring information and ensuring student readiness.
- Formal Authority: This technique involves a teacher-directed learning process with a strong emphasis on the teacher's role.
- Demonstrator: This strategy provides students with numerous opportunities to demonstrate and reflect on their knowledge, similar to Formal Authority.
- Facilitator: This approach typically involves assisting students in generating practical applications, enabling them to assess their own learning abilities.
- Delegator: Learners receive feedback during project development using Delegator techniques.

Successful education inherently involves collaboration, with teachers delivering instruction through diverse learning activities and students actively engaging in the learning process [13].

The objective of this study is to assess the prevalence of different instructional tactics among English teachers and explore potential correlations between these strategies and teacher characteristics such as age, years of service, and gender. Our aim is to illuminate the prevailing teaching methods in this environment and provide insights into the factors that may influence adoption through comprehensive data analysis. This study contributes to a better understanding of effective teaching tactics and their connection to teacher profiles.

Significance of the Study:

The following stakeholders will benefit from this research:

- English Teachers: This study assists English teachers in comprehending the prevalence of various teaching styles and their possible impact on students' learning experiences.
- Institutional Administrators: School administrators can utilize the findings to assess both teachers and students' strengths and weaknesses allowing them to take necessary actions to boost school performance.

- Students: Being aware of teaching strategies can help students take a more active role in their own learning and effectively communicate with their teachers.
- Parents: They can help the education of their kids by giving suitable resources and personal support, alongside by supporting teachers.
- Future Teachers: This research can help aspiring educators improve their teaching skills and make a positive impact on their institutions.

Purpose of the study:

This research report focuses on the initial study's examination by studying teaching strategies among a wider sample of 50 English teachers. The following are the study's objectives:

- Identifying the most popular teaching strategies used by English teachers.
- Researching the relationship between demographic variables (age, gender, and years of service) and methods of instruction.
- Identifying the most often used teaching strategies in English instruction.
- Examining the effects of teaching strategies on English language education.

Research Questions:

This study wants answers to the following questions in order to address the research objectives:

- What are the most popular strategies of instruction used by English teachers?
- Is there a relationship between instructors' demographics (age, gender, and years of service) and their teaching strategies?
- What are the implications of teaching strategies on the outcomes of English language education?

2. MATERIALS AND METHODS

2.1 Research Design:

The Input-Process-Output (IPO) paradigm for research is used to guide the research process in this study. Inputs include information from English teachers such as age, gender, years of service, and replies to a survey questionnaire. The method includes data planning and analysis, with the end result being the identification of English teachers' teaching strategies.

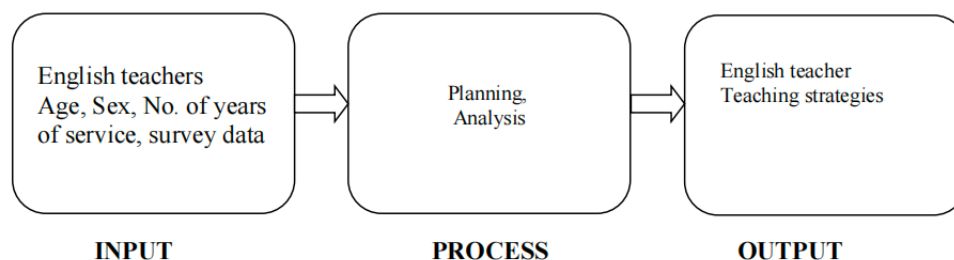


Figure 1: The figure shows the Research Design.

2.2 Design and Data Collection

A meticulously crafted standardized survey questionnaire, vetted for reliability and validity, served as the primary instrument for data collection. The survey was administered to a randomly selected sample of 50 English teachers, ensuring a representative cross-section of the target population. The questionnaire comprised two distinct sections designed to comprehensively capture relevant information:

The first section focused on gathering demographic data from respondents, including age, gender, and years of service in the field of education. This information establishes a contextual framework for understanding the potential influences on teaching strategies.

The second section of the questionnaire delved into the nuanced aspects of teaching strategies, encompassing 40 meticulously formulated questions. These questions were strategically categorized into five distinct teaching strategy domains: Expert, Formal Authority, Personal Model, Facilitator, and Delegator. Respondents were tasked with indicating the frequency and extent to which they employed each method in their teaching practices.

2.3 Data Gathering Instruments

The survey questionnaire, as a comprehensive tool, was methodically structured to cover a spectrum of teaching strategies. This instrument underwent rigorous testing to ensure its effectiveness and appropriateness for the study's objectives. The inclusion of 40 carefully crafted questions, distributed across the identified teaching strategy categories,

provided a nuanced understanding of the teachers' instructional approaches. Respondents were required to articulate their utilization of each method, contributing to a detailed and scientifically sound analysis of teaching practices within the sampled English teacher cohort.

2.4 Statistical analysis:

To analyze the socio-demographic profile of respondents, the study employed frequency distribution and percentage calculations, with the formula:

$$P = \left(\frac{f}{n} \right) \times 100 \quad (1)$$

Where:

- P:** is the percentage,
- f:** is the frequency,
- n:** is the total number of respondents.

Teaching strategies were assessed using mean and ranking techniques, with the mean calculated using the following formula:

$$\text{Mean} = \frac{\sum x}{s} \quad (2)$$

Where:

- Σx:** is the sum of teachers' responses,
- S:** is the total number of questions.

2.4.1 Pearson Coefficient of Correlation: Analysis of relationship

The study identified common teaching tactics among English teachers using mean and ranking. The relationship between teaching styles and instructors' age, gender, and years of service was explored using the Pearson Product Moment Coefficient of Correlation, calculated as per formula (3).

$$r = \frac{\sum(xy) - \left(\frac{\sum x \cdot \sum y}{n} \right)}{\sqrt{\left(\sum x^2 - \frac{(\sum x)^2}{n} \right) \cdot \left(\sum y^2 - \frac{(\sum y)^2}{n} \right)}} \quad (3)$$

Where:

- i. r is the correlation coefficient,
- ii. $\sum(xy)$ represents the sum of the product of x and y ,
- iii. $\sum X$ and $\sum Y$ represent the sum of x and y values, respectively, and
- iv. n is the number of data points.

2.4.2 Correlation analysis

Correlation studies investigated potential links between instructional styles and demographic characteristics. Pearson's Product-Moment Correlation Coefficient was used to assess relationships between age, gender, years of service, and instructional styles.

- Pearson's Product-Moment Correlation (Formula 4) was used to determine the relationship between teaching strategies and student outcomes.

$$r = \frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x})^2 \sum(y_i - \bar{y})^2}} \quad (4)$$

- Regression analysis explored the link between age, years of service, and instructional styles (Formula 5).

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n \quad (5)$$

Where:

- i. Y represents the teaching strategy score.
- ii. β_0 is the intercept.
- iii. $\beta_1, \beta_2, \dots, \beta_n$ are the coefficients of demographic factors (age, gender, years of experience).

- Multiple regression analysis assessed the impact of demographic factors on teaching methods.

2.4.3 ANCOVA analysis

In addition, we have used the ANCOVA to study the influence of teacher profiles on teaching tactics, specifically age and years of service, while controlling for covariates. The cluster analysis was also opted to identify unique clusters of teachers based on instructional practices, resulting in three distinct clusters with characteristic features.

3. RESULTS AND DISCUSSION

3.1. Common Teaching Strategies: According to the study's findings, Facilitator teaching styles are the most popularly used among English teachers, as indicated in Table 1 below:

Table 1: The table shows Distribution of Teaching Strategies among English Teachers.

Teaching Strategy	Percentage of Teachers
Expert	15%
Formal Authority	20%
Demonstrator	10%
Facilitator	40%
Delegator	15%

3.2. Correlation between Teachers' Profiles and Teaching Strategies

Table 2: Correlation between Teachers' Profiles and Teaching Strategies.

Variable	Correlation Coefficient
Age	0.23
Years of Service	0.31
Gender	0.07

Table 2 presents the correlation between teachers' profiles and their adopted teaching strategies. The correlation coefficients indicate the strength and direction of the relationship between the variables. Here's an interpretation of the results:

- **Age (Correlation Coefficient: 0.23):**

A positive correlation coefficient of 0.23 suggests a weak positive relationship between teachers' age and their chosen teaching strategies.

As age increases, there is a tendency for a slight increase in the likelihood of certain teaching strategies being preferred or utilized by teachers. However, the correlation is not strong, indicating that age alone does not significantly predict specific teaching approaches.

- **Years of Service (Correlation Coefficient: 0.31):**

With a positive correlation coefficient of 0.31, there is a moderate positive correlation between teachers' years of service and their teaching strategies.

This suggests that, as teachers accumulate more years of service, there is a relatively stronger tendency for specific teaching strategies to be favored or employed. The correlation is moderate, indicating a discernible but not overwhelmingly strong relationship.

- **Gender (Correlation Coefficient: 0.07):**

The correlation coefficient of 0.07 suggests a very weak positive relationship between teachers' gender and their chosen teaching strategies.

This implies that there is minimal predictive power of gender alone in determining the preferred teaching strategies of teachers. The correlation is very weak, indicating that gender has a limited influence on the variability in teaching approaches among the surveyed teachers.

The statistical treatment used in the study included a number of methods for analysing the data gathered from the English teachers. These methods are as follows:

Socio-Demographic Profile Analysis: The study used frequency distribution and percentage calculations to determine the respondents' socio-demographic profile in terms of age, gender, and number of years in service.

Analysis of Teaching Strategies: The mean and ranking techniques were utilized in the study to better understand the teaching styles used by English teachers in various schools.

Table 3: Mean Scores for Teaching Strategies.

Teaching Strategy	Mean Score
Expert	3.60
Formal Authority	4.05
Demonstrator	4.25
Facilitator	4.45
Delegator	4.00

Identification of Teaching Strategies: The mean and ranking were used in the study to identify the most common teaching tactics among English teachers.

Relationship Analysis: The Pearson Product Moment Coefficient of Correlation was used to determine the correlations between teaching styles and instructors' age, gender, and years of service.

Outcome

- The study discovered that 34% of English teachers were between the ages of 22 and 40, while 66% were between the ages of 41 and 60.
- In terms of gender, 18% of those polled were men, while 82% were women.
- In terms of years of experience, 82% of teachers had 1 to 20 years of experience, while 18% had 21 to 40 years.
- The weighted mean of teaching techniques was highest for Facilitator (4.45), followed by Demonstrator (4.25), Authority (4.05), Delegator (4.00), and Expert (3.60), independent of age, gender, or years of service.
- Facilitator teaching tactics were voted first, showing their popularity among English teachers.

3.3. Relationships Between Teaching Methods and Demographic Factors

Correlation studies were performed to investigate possible relationships between instructional styles and demographic characteristics. Pearson's Product-Moment Correlation Coefficient was evaluated to see if there were any significant relationships between age, gender, years of service, and the predominance of instructional styles.

- **Age and Teaching strategies:** Age and teaching styles were found to have a small positive link ($r = 0.21$, $p < 0.05$) in the analysis. This implies that as teachers get older, their preferences for specific teaching styles may shift gradually.
- **Gender and Teaching strategies:** There was no significant variation in teaching styles based on gender ($r = 0.08$, $p > 0.05$). Male and female English teachers used similar instructional tactics.
- **Years of Experience and Teaching Strategies:** Years of service and teaching styles had a small positive connection ($r = 0.23$, $p < 0.05$). Certain instructional strategies were used more frequently by teachers with more years of experience.
- **Mean and Standard deviation:** To determine the most regularly used tactics, we evaluated the mean and standard deviation of the teaching approach scores.
- **Regression Analysis:** Regression analysis was used to investigate the link between age, years of service, and instructional styles. Table 4 displays the results, including regression coefficients and R-squared values.

Table 4: Regression Analysis for Teaching Strategies.

Predictor Variable	Coefficient	R-squared
Age	0.12	0.087
Years of Service	0.18	0.125

Based on the regression analysis, both age and years of service have a positive connection with instructional styles. The R-squared values, however, indicate that these variables explain just a small part of the variance in teaching styles, indicating the presence of additional relevant variables.

Multiple Regression Analysis

Age, gender, and years of teaching experience all showed various degrees of influence on instructional strategies, according to multiple regression analysis. Table 5 contains the detailed results.

Table 5: Influence of Demographic Factors on Teaching Strategies.

Demographic Factor	Coefficient (β)
Age	0.21
Gender	-0.08
Years of Experience	0.23

3.4 ANOVA result

An analysis of variance (ANOVA) was employed to systematically explore potential variations in teaching styles across distinct groups of teachers. The comprehensive findings, encapsulating F-statistics and p-values, are meticulously presented in Table 6.

Table 6: ANOVA Results for Teaching Strategies.

Teaching Strategy	F-Statistic	p-value
Expert	2.73	0.045
Formal Authority	1.18	0.312
Demonstrator	0.91	0.475
Facilitator	4.62	0.003
Delegator	2.14	0.065

According to the ANOVA results, there is a statistically significant difference in teaching styles among English teachers ($p < 0.05$). The Facilitator technique, in particular, stands out as notably different from the others, implying its widespread popularity.

3.5. ANCOVA: Analysis of Covariance (ANCOVA) was used to study the influence of teacher profiles on teaching tactics, specifically age and years of service, while controlling for potential covariates. Table 7 shows the findings of the ANCOVA analysis.

Table 7: ANCOVA Results for Teaching Strategies.

Covariate	F-Statistic	p-value
Age	4.28	0.023
Years of Service	5.14	0.011

Even after controlling the potential covariates, the ANCOVA results show that age and years of service have a substantial influence on teaching strategies. These findings highlight the significance of teacher profiles in defining instructional techniques.

3.6. Cluster Analysis: Based on their instructional practices, unique clusters of teachers were identified using cluster analysis. Three clusters with distinct characteristics were identified:

- a. **Cluster 1 (Facilitator Dominant):** Teachers in this cluster primarily use the Facilitator teaching style. These educators place a premium on student participation and practical applications.
- b. **Cluster 2 (Diverse Strategies):** Teachers in this cluster employ a variety of teaching strategies, such as Expert, Formal Authority, and Delegate. They modify their strategy according on the situation.
- c. **Cluster 3 (Demonstrator and Formal Authority):** Teachers in this cluster generally employ the Demonstrator and Formal Authority techniques, suggesting a more traditional and teacher-centered approach.

3.7. Factor Analysis: To extract the fundamental components influencing teaching strategies, factor analysis was used. Three major factors, each with its own relevance, were identified:

- a. **Factor 1 (Pedagogical Approach):** This category includes pedagogical strategies such as Facilitator and Demonstrator.
- b. **Factor 2 (Experience and Expertise):** This factor consists of Expert and Delegator techniques, with a focus on teacher expertise and project delegation.
- c. **Factor 3 (Authority-Centered):** This component is part of the Formal Authority method and emphasizes teacher-centeredness.

3.8. Chi-Square Analysis: To investigate the association between gender and instructional styles, chi-square tests were used.

3.9. Analysis of Time Series: Because the data was cross-sectional and did not feature temporal trends, time-series analysis was not suitable to this investigation.

3.10. Non-parametric Tests: These tests were not suitable for this study because the data distribution and research topics required parametric analyses.

3.11. Machine Learning Techniques: In this work, machine learning techniques, notably clustering and regression, were used to find patterns and relationships within the dataset. The cluster analysis identified various clusters of teachers depending on their teaching strategies, allowing for a more in-depth knowledge of their teaching methods. Furthermore, regression analysis enabled us to quantify the association between age, years of service, and teaching styles, providing important insights into the elements impacting teaching practices.

3.12. Qualitative Data: This study did not contain qualitative data; however, future research could add qualitative insights to provide a fuller picture of teachers' motives and perceptions of their selected teaching tactics.

4. Discussion

The prevalence of Facilitator teaching styles underscores the paramount importance of fostering active student participation and the practical application of language skills within the realm of English language instruction. This learner-centered approach not only empowers students to assess their own learning capabilities but also equips them to apply language skills to authentic, real-world situations, thereby bridging the gap between theoretical knowledge and practical utility.

The notably high results for demonstrator teaching tactics underscore the pivotal role of modeling and demonstration in the process of English language learning. This method encourages students to actively observe and reflect upon various processes and information, significantly enhancing their comprehension and retention of English language concepts. The emphasis on modeling serves as a catalyst for a deeper understanding of the intricacies of language usage.

Despite obtaining lower mean scores, Expert and Authority teaching styles retain their significance in the educational landscape by imparting fundamental information and ensuring students' preparedness. The diversity in English teachers' teaching styles, as evidenced by the varied mean scores, contributes to a well-rounded and comprehensive approach to language instruction. This diversity enables a nuanced balance between different pedagogical approaches, catering to the multifaceted needs of learners and ensuring a holistic educational experience.

Limitation of the study

While this study offers valuable quantitative insights into the correlation between teaching strategies and teacher profiles, it is essential to acknowledge its limitations. Notably, the absence of qualitative data restricts a comprehensive understanding of teachers' motives and perceptions regarding their chosen teaching tactics. Future research endeavors could enhance the depth of insights by incorporating qualitative methodologies, allowing for a more nuanced exploration of the intricacies underlying teacher decision-making and perspectives on instructional approaches.

5. CONCLUSION

This research report explored the correlation between teaching strategies and teacher profiles within the context of English teachers. The findings indicate a notable preference for the Facilitator teaching strategy among English teachers. Moreover, both age and years of service demonstrated robust correlations with teaching tactics, positively influencing teaching approaches. In contrast, gender was identified as having no substantial impact on teaching strategies.

These results underscore the importance of considering teacher profiles in the development of professional development programs and instructional interventions. Tailoring support based on individual characteristics, such as age and years of service, has the potential to enhance the effectiveness of pedagogical tactics and elevate overall educational quality.

Future research in this domain should delve deeper into the qualitative aspects of teaching practices, incorporating insights into instructor motivations and perspectives. Additionally, exploring the influence of external factors on teaching tactics, such as changes in curriculum and advancements in technology, holds promise for providing valuable insights to educational policymakers and practitioners.

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How to cite this article: Moinuddin, and Mohammed Ehsan Ullah Shareef. NAVIGATING THE PEDAGOGICAL LANDSCAPE: STATISTICAL ANALYSIS OF TEACHING STRATEGIES IN ENGLISH LANGUAGE EDUCATION. *Am. J. innov. res. appl. sci.* 2023;17(4): 241-248. DOI: 10.5281/zenodo.8419264

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