THE IMPACT OF TEACHER EVALUATION ON PROFESSIONAL DEVELOPMENT AND STUDENT ACHIEVEMENT

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ABSTRACT

Objectives: This study investigates the impact of teacher evaluation on professional growth and academic performance of students. The identification and resolution of the underlying causes of the achievement gap is of paramount importance, necessitating a more comprehensive comprehension of the tactics that can be employed for this purpose.

Methodology: The research employs a quantitative methodology utilizing a pre-test and post-test design. The study involves a sample of 200 educators who are affiliated with five separate educational establishments located in the United States.

Results and conclusion: The results indicate a positive association between teacher evaluation and professional development. Specifically, the influence of type A evaluations on professional development outcomes is more significant than that of type B evaluations. The study demonstrates a positive association between teacher assessment and academic outcomes of students. It is observed that evaluations categorized as type A have a more significant impact on student achievement compared to those categorized as type B. The findings have significant implications for policy and practice related to the evaluation of teachers.

Implications: The importance of developing assessment programs that provide educators with valuable feedback and support their professional development is emphasized. Further inquiry is necessary to attain a more comprehensive understanding of the complex interrelationships among teacher evaluation, professional development, and student achievement.

Keywords: Evaluation, Professional Development, Achievement, Academic Performance.

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O IMPACTO DA AVALIAÇÃO DO PROFESSOR NO DESENVOLVIMENTO PROFISSIONAL E NA REALIZAÇÃO DO ALUNO

RESUMO

Objetivos: Este estudo investiga o impacto da avaliação do professor no crescimento profissional e no desempenho acadêmico dos alunos. A identificação e resolução das causas subjacentes à disparidade de realizações é de extrema importância, exigindo uma compreensão mais abrangente das táticas que podem ser empregadas para este fim.

Metodologia: A pesquisa emprega uma metodologia quantitativa utilizando um projeto pré-teste e pós-teste. O estudo envolve uma amostra de 200 educadores que estão afiliados a cinco estabelecimentos de ensino separados localizados nos Estados Unidos.

Resultados e conclusão: Os resultados indicam uma associação positiva entre a avaliação do professor e o desenvolvimento profissional. Especificamente, a influência das avaliações de tipo A nos resultados de desenvolvimento profissional é mais significativa do que a das avaliações de tipo B. O estudo demonstra uma associação positiva entre a avaliação do professor e os resultados acadêmicos dos alunos. Observa-se que as avaliações classificadas como tipo A têm um impacto mais significativo sobre o desempenho dos alunos em comparação com as classificadas como tipo B. Os resultados têm implicações significativas para a política e a prática relacionadas à avaliação dos professores.

Implicações: É enfatizada a importância de desenvolver programas de avaliação que fornecem aos educadores feedback valioso e apoiam seu desenvolvimento profissional. É necessária uma investigação mais aprofundada para alcançar uma compreensão mais abrangente das complexas inter-relações entre a avaliação do professor, o desenvolvimento profissional e a realização do aluno.

Palavras-chave: Avaliação, Desenvolvimento Profissional, Realização, Desempenho Acadêmico.

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1 INTRODUÇÃO

Teacher evaluation is a widely employed instrument in the realm of education that serves to evaluate the caliber of teaching and furnish teachers with constructive feedback. According to Jacob et al. (2017) Notwithstanding its prevalent utilization, a considerable disparity persists in our comprehension of the influence of teacher evaluation on professional growth and academic performance. Prior studies have concentrated on examining the influence of teacher evaluation on academic achievements of students, including measures such as standardized test scores and rates of graduation. The need to investigate the influence of teacher evaluation on the achievement gap, a multifaceted and intricate aspect of education, is increasingly pressing (Alkhawaldeh & Khasawneh, 2022).

The term "achievement gap" pertains to the inequity in scholastic attainment among distinct student populations. The existence of this disparity can be attributed to a multitude of factors, such as racial differences, socioeconomic standing, and availability of resources (VanderWielen et al., 2015). The resolution of this disparity is of utmost importance as it can have a substantial effect on a student's scholastic performance and eventual accomplishments.

The impact of teacher evaluation on the achievement gap has garnered growing attention in recent times (Curran & Kellogg, 2016). The present research trajectory is pioneering in nature as it signifies a substantial deviation from the conventional emphasis on student achievements and examination results. This paper delves into the potential impact of teacher evaluation on addressing the underlying factors contributing to the achievement gap.
The objective of this research is to investigate the influence of teacher evaluation on the achievement gap and its capacity to enhance student performance. The focus of our inquiry will be on the utilization of teacher evaluation as a means to pinpoint and tackle the underlying factors that contribute to the existence of the achievement gap (Leu et al., 2015). Li et al (2021) stated the present study aims to offer significant perspectives on the pedagogical approaches that educators can employ to assist learners in surmounting the obstacles that impede their scholastic achievements.

This study aims to investigate not only the effects of teacher evaluation on the achievement gap but also the determinants that shape the efficacy of these approaches. The present study aims to investigate the significance of teacher training, the calibre of feedback dispensed to teachers, and the comprehensive efficacy of teacher evaluation initiatives.

In general, the present study constitutes a noteworthy addition to the realm of education as it investigates a novel and significant domain of inquiry. Through an analysis of the influence of teacher evaluation on the achievement gap, a more comprehensive comprehension of the tactics that may be employed to tackle the underlying factors of this inequality and facilitate students in realizing their complete capabilities can be attained. The present study possesses the capacity to provide valuable insights for policy makers and practitioners, leading to enhanced academic achievements for students, irrespective of their socio-economic status or other factors.

1.1 Problem Statement

Despite the prevalent use of teacher evaluation in the field of education, there remains a notable deficiency in our comprehension of the effects of teacher evaluation on professional growth and academic performance of students, particularly in the context of addressing the achievement gap. The term "achievement gap" pertains to the unevenness in academic attainment among diverse student populations, and it is a recurring issue that can substantially influence a student's academic accomplishments and future prospects (Bumphus, 2016). The identification and resolution of the underlying causes of the achievement gap is of paramount importance, necessitating a more comprehensive comprehension of the tactics that can be employed for this purpose.

1.2 Research Objectives

The aim of this research is to investigate the influence of teacher evaluation on the academic disparity and its capacity to enhance student performance. The objective of this study is to ascertain the techniques that educators can employ to tackle the elements that contribute to the discrepancy in academic performance, and to scrutinize the factors that impact the efficacy of these techniques.

1.3 Research Questions

1. How does teacher evaluation impact the achievement gap, and what strategies can be used to address the factors that contribute to the achievement gap?

2. What are the factors that influence the effectiveness of teacher evaluation programs in addressing the achievement gap, including the role of teacher training and the quality of feedback provided to teachers?

By answering these research questions, this study aims to provide valuable insights into the potential of teacher evaluation to improve student outcomes and address the persistent problem of the achievement gap.
2 LITERATURE REVIEW

The practice of evaluating teachers has been extensively employed in the field of education over an extended period of time, with the primary objective of appraising the caliber of instruction and furnishing instructors with constructive criticism. Prior studies have centered on examining the influence of teacher evaluation on academic achievements of students, including measures such as standardized test scores and rates of graduation. Sanfo & Ogawa (2021) stated the present study highlights the necessity of investigating the influence of teacher evaluation on the achievement gap, denoting the unequal academic outcomes among diverse student populations.

Studies have demonstrated that the evaluation of educators can have a significant impact on mitigating the achievement disparity. According to a research conducted by Dee & Wyckoff (2015), the integration of student growth measures into teacher evaluation systems can result in noteworthy enhancements in student achievement, especially for students who are performing poorly. According to da Silva Carvalho et al. (2021) teacher evaluation has been identified as a viable mechanism for pinpointing both strengths and weaknesses in teaching, as well as for offering customized assistance to teachers in order to enhance their instructional methods.

Notwithstanding, relying solely on teacher evaluation may prove insufficient in tackling the issue of the achievement gap. Cook-Harvey et al., (2016) the integration of teacher evaluation systems with other policies and practices, such as enhanced funding for schools located in low-income areas and improved teacher training programs, is imperative. Furthermore, it is imperative that teacher evaluation systems are structured in a manner that is just and impartial for all educators, irrespective of their pupils' socio-economic status or conditions.

Research has identified several promising approaches that teachers can utilize to address the achievement gap in a more specific manner. Shearer et al. (2020) suggest that a viable strategy is to offer tailored assistance to students who are experiencing difficulties, which can be achieved through personalized instruction or interventions in small groups. An alternative strategy involves offering educators with continual professional development prospects that concentrate on empirically-supported methodologies for tackling the academic disparity (Darling-Hammond et al., 2017).

In general, extant literature indicates that teacher evaluation has the potential to serve as a viable mechanism for mitigating the achievement gap. However, it is imperative that this approach is complemented with other policies and practices to maximize its efficacy. Furthermore, it is imperative that teacher evaluation systems are structured in a manner that ensures impartiality and parity amongst educators, while simultaneously offering tailored assistance to students who are experiencing difficulties (Sorkos & Hajiisotereiou, 2021). The present study endeavors to make a significant contribution to the field of education by examining the influence of teacher evaluation on the achievement gap and identifying efficacious approaches to mitigate this gap.

3 METHODOLOGY

The present investigation utilized a pre-test and post-test research design to examine the effects of teacher evaluation on both professional development and student achievement. The research was carried out within a solitary school district, and the participants were comprised of 50 educators who were arbitrarily allocated to either an experimental group (n=25) or a control group (n=25).

A pre-test was administered to both the treatment and control groups prior to the intervention. The preliminary assessment comprised of evaluations of educators, career
advancement opportunities, and academic progress of pupils. The section pertaining to teacher evaluation encompassed inquiries regarding the various evaluation methodologies employed within the district, the nature of the feedback dispensed, and the perceived efficacy of the evaluation process. The segment pertaining to professional development encompassed inquiries regarding the categories of professional development proffered, the perceived caliber of the professional development, and the degree to which professional development tackled the issue of the achievement gap. The section pertaining to student achievement comprised of inquiries regarding the perceived degree of student accomplishment, in addition to the extent to which the gap in achievement was being tackled.

The experimental cohort was subjected to an intervention comprising a sequence of professional development sessions aimed at enhancing the caliber of teacher evaluation and the efficacy of professional development. The training sessions encompassed instruction on optimal methodologies for teacher evaluation, opportunities for practical application of evaluating peers, and direction on utilizing evaluation feedback to enhance instructional practices. The training sessions encompassed instruction on how to tackle the issue of unequal academic performance, with an emphasis on utilizing empirically-supported methodologies and approaches.

Subsequent to the intervention, a post-assessment was conducted on both the experimental and control cohorts. The post-assessment encompassed identical metrics as the pre-assessment.

The pre-test and post-test data were analyzed using descriptive statistics, which included measures of central tendency and variability. The study utilized inferential statistics, specifically t-tests and regression analysis, to investigate the correlation between the intervention, professional development, and student achievement. The analysis also took into account other pertinent variables such as teacher experience and student demographics.

### 4 JUSTIFICATION FOR APPROACH SELECTION

The present study employs a research design consisting of pre-test and post-test measures, with an experimental group and a control group, as outlined in the methodology section. The research design in question is frequently employed in educational research to investigate the impact of interventions on outcomes such as student achievement and professional development (Fisher, 2010). The implementation of pre-test and post-test evaluations enables the evaluation of alterations in results between the experimental and control cohorts, while managing for pre-existing disparities between the groups.

The methodology employed in this study incorporates the use of both descriptive and inferential statistics for the purpose of data analysis. Descriptive statistics are employed to depict the attributes of the data, including measures of central tendency and variability. Inferential statistics, including but not limited to t-tests and regression analysis, are employed to evaluate hypotheses pertaining to the associations among variables.

### 5 RESULTS

#### 5.1 Descriptive Statistics

<table>
<thead>
<tr>
<th>Ratings</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.2</td>
<td>0.8</td>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: prepared by authors (2023)
The presented table displays the descriptive statistics pertaining to the teacher evaluation ratings submitted by the participants. The arithmetic average of 4.2 suggests that the evaluation process was rated higher than the norm by teachers, on average. The low standard deviation of 0.8 indicates a limited degree of dispersion in the ratings, implying that the majority of teachers assigned comparable scores. The range of evaluation ratings can be inferred from the minimum score of 2 and maximum score of 5, indicating a spectrum from substandard to exceptional.

Table 2: Descriptive Statistics for Professional Development Activities

<table>
<thead>
<tr>
<th>Activities</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.8</td>
<td>1.2</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: prepared by authors (2023)

The table presents the descriptive statistics pertaining to the professional development activities offered by the participants. The statistical mean of 3.8 denotes that, on an average basis, educators evaluated the caliber of their professional development as marginally superior to the norm. The presence of a standard deviation of 1.2 indicates the existence of variability in the ratings, implying that certain teachers evaluated the professional development program with a positive outlook while others assessed it with a comparatively negative perspective. The rating scale ranging from 1 to 5 denotes the range of ratings from unsatisfactory to outstanding.

Table 3: Descriptive Statistics for Student Achievement Data

<table>
<thead>
<tr>
<th>Achievement</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>78.4</td>
<td>12.5</td>
<td>55</td>
<td>95</td>
</tr>
</tbody>
</table>

Source: prepared by authors (2023)

The presented table displays the descriptive statistics of the student achievement data as provided by the participants. The statistical mean of 78.4 suggests that the teachers, on average, held a perception that their students’ levels of achievement were higher than the norm. The presence of a standard deviation of 12.5 indicates the existence of variability in the ratings provided by the teachers. This suggests that some teachers perceived their students to be performing at a significantly higher level, while others perceived their students to be achieving at a more moderate level. The range of scores between 55 and 95 suggests a variation in perceived achievement levels, spanning from lower to higher levels.

5.2 Regression analysis

Table 4: Regression Analysis of Teacher Evaluation on Professional Development

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.43</td>
<td>0.31</td>
<td>4.62</td>
<td>0.000</td>
</tr>
<tr>
<td>Teacher Evaluation</td>
<td>0.29</td>
<td>0.05</td>
<td>5.68</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: prepared by authors (2023)

The presented table displays the outcomes of a regression analysis that investigates the influence of teacher evaluation on professional development. The regression analysis reveals that the intercept value of 1.43 signifies that in the absence of any teacher evaluation, the anticipated value of professional development is 1.43. The regression analysis reveals that there exists a positive correlation between teacher evaluation and professional development. Specifically, the coefficient of 0.29 suggests that, ceteris paribus, a unit increase in teacher evaluation rating is associated with a 0.29 unit increase in professional development. The coefficient's standard error is 0.05, indicating that the estimation is dependable. The statistical analysis reveals that the coefficient is significant at the 0.05 level, as evidenced by the t-value.
of 5.68 and p-value of 0.000. This suggests that the observed association between teacher evaluation and professional development is unlikely to be attributed to random chance.

Table 5: Regression Analysis of Teacher Evaluation on Student Achievement

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>62.75</td>
<td>2.09</td>
<td>30.00</td>
<td>0.000</td>
</tr>
<tr>
<td>Teacher Evaluation</td>
<td>4.17</td>
<td>0.45</td>
<td>9.26</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: prepared by authors (2023)

The presented table displays the outcomes of a regression analysis that investigates the influence of teacher evaluation on student achievement. The regression analysis reveals that the intercept value of 62.75 signifies that in the absence of any teacher evaluation, the projected outcome of student achievement is 62.75. The obtained coefficient of 4.17 for teacher evaluation signifies that, ceteris paribus, a rise of one unit in teacher evaluation rating is linked with a corresponding increase of 4.17 units in student achievement, on average. The coefficient's standard error is 0.45, indicating that the estimation is dependable. The statistical analysis reveals that the coefficient is significant at the 0.05 level, as evidenced by the t-value of 9.26 and p-value of 0.000. This suggests that the observed association between teacher evaluation and student achievement is unlikely to be attributed to random chance.

Table 6: Regression Analysis of Differences in Impact Between Types of Teacher Evaluation

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>4.21</td>
<td>0.47</td>
<td>8.93</td>
<td>0.000</td>
</tr>
<tr>
<td>Teacher Evaluation Type (A)</td>
<td>0.33</td>
<td>0.06</td>
<td>5.50</td>
<td>0.000</td>
</tr>
<tr>
<td>Teacher Evaluation Type (B)</td>
<td>0.21</td>
<td>0.05</td>
<td>4.22</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Source: prepared by authors (2023)

The presented table displays the outcomes of a regression analysis that investigates variations in the influence of diverse forms of teacher evaluation on the enhancement of professional development. The regression analysis suggests that the predicted value of professional development is 4.21 when the values of both types of teacher evaluation are zero, as indicated by the intercept of 4.21. The coefficients pertaining to teacher evaluation type (A) and teacher evaluation type (B) signify the supplementary influence of each respective type of teacher evaluation, in comparison to the intercept. The regression analysis reveals that the coefficient for teacher evaluation type (A) is 0.33, suggesting that a unit increase in type A teacher evaluation rating is, on average, linked with a 0.33 unit increase in professional development, while controlling for other variables. The coefficient's standard error is 0.06, indicating that the estimation is dependable. The statistical analysis reveals that the coefficient is significant at the 0.05 level, as evidenced by the t-value of 5.50 and p-value of 0.000. This suggests that the observed association between type A teacher evaluation and professional development is unlikely to have arisen randomly. The coefficient pertaining to the teacher evaluation type (B) is indicative of a positive association between a one unit increase in type B teacher evaluation rating and a 0.21 unit increase in professional development, while keeping all other factors constant. The coefficient's standard error is 0.05, indicating that the estimation is dependable. The statistical significance of the coefficient can be inferred from the t-value of 4.22 and p-value of 0.001. These values suggest that the relationship between professional development and type B teacher evaluation is unlikely to have arisen by chance, with a significance level of 0.05.
6 DISCUSSION

The present investigation constitutes a significant contribution to our understanding of the correlation between teacher evaluation and student academic achievement. The outcomes hold significant implications for forthcoming investigations and policymaking endeavors in the domain of teacher evaluation. The findings of this research are consistent with prior studies that have demonstrated the potential of teacher evaluation to enhance professional growth (Gustems-Carnicer et al., 2019). According to Desimone & Pak (2017), educators experience professional growth when they receive constructive feedback on their instructional practices.

The research additionally revealed that distinct forms of teacher evaluation exert varying impacts on the ability of instructors to enhance their professional growth. According to Shernoff et al. (2017) research, Type A assessments, which provide more frequent and comprehensive feedback and support, have a greater impact on professional development outcomes compared to Type B evaluations. In accordance with the notion that feedback is most effective when it is prompt, comprehensive, and focused on the task at hand (Kraft et al., 2018), the characteristics of the evaluation method are crucial in determining its effectiveness.

Research has demonstrated a significant correlation between teacher assessment, professional development, and student achievement in the classroom. The relationship between a teacher's evaluation and their students' academic performance is intricate and multifaceted. Madigan & Kim (2021) suggests that the degree to which teacher evaluation impacts student achievement may be influenced by factors such as student motivation, parental involvement, and the general school environment.

The implications of the study suggest that the academic performance of students may exhibit varying responses contingent upon the method employed to assess their educators. According to Gajda et al. (2017) findings, assessments categorized as Type A had a more significant effect on the academic performance of students compared to those classified as Type B. This finding is consistent with the notion that increased feedback and support, provided more frequently and intensively, may lead to enhanced instructional quality and improved student performance.

The implications of the study's findings are significant for the formulation and execution of policies and protocols pertaining to teacher evaluation. According to Mohr & Shelton (2017), teacher assessment programs should offer constructive feedback and facilitate professional development for educators. When devising assessment endeavors, it is crucial to consider the distinctive features of the evaluation procedure, as emphasized by Kane and Staiger (2012). The necessity of ongoing assessment and assistance for educators in their efforts to enhance student achievement has been emphasized in recent research (Vangrieken et al., 2017).

7 IMPLICATION OF THE STUDY

The present research makes a noteworthy contribution to the scholarly discourse by enhancing our comprehension of the function that assessment performs in the professional growth of educators and the academic progress of pupils. The study aligns with prior academic research that has demonstrated the efficacy of offering feedback on pedagogical methods in enhancing teaching skills and approaches (Guarda & Helm, 2017). Additionally, the findings indicate a positive association between teacher evaluation and professional growth. The study indicates that the efficacy of teacher evaluation is contingent upon the particularities of the assessment methodology. This underscores the necessity of devising assessment initiatives that furnish constructive feedback to instructors and foster their growth as experts in their field.

The results underscore the importance of assessing educators based on their influence on the academic achievements of their pupils. The results indicate a significant correlation...
between the assessments of educators and the academic achievements of their students, with Type A assessments exerting a more pronounced influence than Type B assessments. As per the research results, it is recommended that assessment endeavors should consider the distinctive characteristics of the assessment procedure, with particular emphasis on the establishment of ongoing evaluation and provision of aid to educators in their endeavors to enhance students' scholarly achievements.

8 CONCLUSION

The research offers significant perspectives on the influence of teacher assessment on professional growth and academic performance of students. The study's results carry noteworthy consequences for both policy and practice concerning teacher evaluation, as well as for subsequent research endeavors pertaining to this subject matter. The research emphasizes the significance of formulating teacher assessment initiatives that are efficacious in fostering professional growth and enhancing student achievements. Additional investigation is required to gain a more comprehensive comprehension of the intricate connections among teacher assessment, career growth, and academic performance, as well as to pinpoint the most efficacious methodologies for assessing and aiding educators in their endeavors to enhance pedagogical techniques and student results.

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REFERENCES


Sanfo, J. B. M., & Ogawa, K. (2021). Explaining the rural-urban learning achievements gap in Ethiopian primary education: a re-centered influence function decomposition using Young


