

The Influence of Teacher Merit Pay on Student Performance

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Abstract:

Teacher merit pay refers to any system in which compensation is partly based on an evaluation of the employee's job performance. This paper explores the efficacy and implications of teacher merit pay systems. Teacher merit pay has been implemented with varying degrees of success. The study examines cases where these systems increase teacher stress due to a heavy emphasis on performance metrics, potentially leading to higher turnover rates. Such turnover could improve student outcomes by removing poorly performing teachers. However, other implementations of merit pay that preserve baseline salaries and offer bonuses based on performance have shown no significant impact on student achievements, attendance, or graduation rates. This analysis emphasizes the complexities and mixed results concerning with merit pay systems and underscores the need for extended research duration, ideally over three years, to capture their comprehensive effects. The paper calls for future studies to address disruptive factors, such as socioeconomic influences and the pressures of teaching to standardized tests, to refine merit pay systems for genuinely enhancing educational quality.

Keywords: Teacher merit pay, pay-for-performance, student academic performance

1. Introduction

Teacher merit pay, also called teacher pay for performance refers to any system in which compensation is partly based on an evaluation of the employee's job performance. In most education systems among the world, there is always a scientific method to evaluate the job performance. For instance, students' academic performance is a significant factor in determining the teachers' performance. Other factors like peer evaluations of teaching standards, Marks for Teaching Quality Assessment (TQA) are also included in teachers' job performance. However, since the main remit of teachers is to teach students knowledge and skills, and students' academically performance is a good reflection of students' knowledge acquisition and proficiency, students' scores can be the main part of teachers' job performance. Therefore, when teacher merit pay is mentioned below, it is mostly related to students' academically performance.

Although sounds unfair to some teachers, teacher merit pay is popular in some states and has the potential to become a trend in the future due to the eager to revolutionize education system as well as the positive outcome from several research confirm this policy. For example, since 2006, the U.S. government has awarded over \$2.5 billion in approximately 130 grants to recipients in more than 30

states and the District of Columbia to design and implement performance pay systems. In Florida, Texas, Colorado, and Minnesota alone, more than \$550 million have been allotted to merit pay programs. In 2015, the Dallas Independent School District utilized a teacher merit pay system which result in the increase of students' average scores. It is obvious that once merit pay was initiated in the education field, government has paid attention to this policy and keep trying it in different schools.

However, teachers' attitudes towards merit pay are mixed, with new teachers more open to merit pay than their more experienced colleagues. Teachers are particularly hostile to merit-pay schemes only based on test scores, raising a particular challenge for the political sustainability of such plans [1].

This controversial phenomenon raises a lot of questions: why government always try merit pay which most teachers dislike in different schools? And do the benefits of merit pay outweigh the draws or do the drawbacks outweigh the benefits? Discussions on teacher merit pay can help the government and school evaluate political and financial support, and foster the development of education system.

Therefore, this article focuses on research papers discussing teacher merit pay's impact on students' academical performance. Research articles from different school and

different areas are included to ensure regional disparities are dismissed. The different interpretations of the results of the individual experiments will also be synthesized and discussed at the end.

2. Influence of Teacher Merit Pay on Students' Academic Performance

The application of teacher merit pay is worldwide. Although the level and style of education varies from country to country due to factors such as socio-cultural, historical traditions and level of economic development. For instance, in the US, an incentive program named 'Cobra Pride' is applied to teachers in order to increase the performance of teachers and students [2], this program provide extra salary to teachers performance well. In some areas of China, part of teacher's salary is linked to his or her performance [3]. Due to the inner complexity of teacher merit pay, simply collecting and summarizing research and analyzing the pros and cons of performance pay for teachers is not sufficiently informative. Therefore, a meta analysis synthesis effect sizes across 37 primary researches was conducted and the results suggest that the effect of teacher merit pay on student test scores is positive and statistically significant. However, the impact is limited [4]. The following part will discuss the reason why the influence is trivial although the result is statistically significant.

2.1 Reasons for Statistically Significant Result

The impact of teacher merit pay on students' academical performance varies depending on whether this policy is a selective mechanism. In a longitudinal analysis about teacher merit pay, teacher turnover is significantly influenced by such incentive mechanism [5]. In this study, a U-shaped relationship between teacher salary and turnover was found. However, the effects of group-based merit pay on turnover depend on salary level. Most importantly, schools tend to lose both overqualified and underqualified teachers due to turnover, which could result in a more appropriately skilled teaching staff. Consequently, this adjustment in staff may increase the overall teacher turnover rate. Another evidence from the IMPACT Program which implemented uniquely high-powered incentives linked to multiple measures of teacher performance suggested that salary related to teacher merit caused dismissal threats, and such threats increased the voluntary attrition of low-performing teachers by 11 percentage points [6]. Since teacher turnover rate is a significant intermediary variable affecting students' performance and retaining high-quality teachers can lead to improved student performance, we can conclude that teacher merit pay increase student performance through exacerbating the loss of low-

er performing teachers.

When talking about teachers' teaching quality, the motivation of them is an important factor. Hence teacher merit pay as an incentive program may affect teachers' motivation thus affect students' academical performance. However, teacher merit pay does not affect teacher motivation or reported practices [7]. In a research conducting three randomized experiments exploring 3 different pay-for-performance programs to summarize teachers' motivation under each of the given programs. The results showed that most teachers did not report their program as motivating. In more detail, teacher merit pay won't change teachers' number of hours work or job stress. This research provided a new view that teacher merit pay as an incentive program in fact has no help on teachers' motivation.

Experiment of the Project on Incentives in Teaching (POINT) set schools not participating the Governor's Educator Excellence Grants(GEEG) program as control group and require each participating school to develop its own incentive pay plan within a set of guidelines defined by the Texas Education Agency (TEA). This study focuses on student performance gains in mathematics and reading to measure their academic performance. The results pointed out that the lack of incentives of merit pay almost make no sense to any significant changes in teacher productivity, but they are correlated with teacher turnover, which could theoretically improve student outcomes in a long term [8]. Thus, teacher merit pay's effect on student's performance is not attributed to personal growth of teachers, but teacher turnover.

2.2 Reasons for Limited Impact on Students' Performance

According to the meta-analysis, although in some research teacher merit pay has positive impact on students' scores, the increase is limited. The reason is that Teachers are doing their best to teach even without merit pay [9]. When teachers have devoted themselves to their teaching career, any increase in their salary won't let them go beyond their limits.

Aside from teacher's limited, an investigation of teacher and public attitudes towards teacher merit pay indicate that most estimates of the teacher merit pay are of short-run effects, and overlook teacher's profession selection [1]. There may be a failure to consider one's true interests and professional inclinations due to external pressures, market trends, or other factors that are not of personal interest. This article points out the shared shortcomings of previous study: the operation time those experiment selected is too short to help the teachers to develop their professional skills. In this situation, the increase of students'

scores doesn't match the classic model: teacher's professional skills increased thus their teaching level enhanced. Numerous studies have shown that teacher professional development positively affects student achievement, and subject-matter knowledge and instructional practices are essential for teachers [10].

Moreover, in response to those who believe that teacher performance pay motivates teachers, an empirical study proves that merit pay does not enhance motivation [11]. In details, teacher merit overlook teacher's internal motivation. [12] Internal motivation is important to teachers because it fosters a genuine passion for teaching, drives continuous improvement and innovation in their practice, which will ultimately enhance student learning outcomes and overall educational experience. However, since the form of merit pay is always money incentives, it can be considered as an external motivation. Therefore, the limit of motivation can partly explain the limit impact of teacher merit pay.

Evidence from New York City public schools showcase that teacher incentives poorly increase student performance, attendance, or graduation. The research explores the impact of financial incentives for teachers on student performance in over two hundred public schools in New York City. According to the author, the reasons for the lack of impacts can be categorized to the complexity of the incentive schemes, the lack of clarity on how teachers can improve student achievement, and the potential for unintended consequences like teaching to the test may contribute to the lack of positive impact [13].

Above all, due to the limitation of teachers' ability, time to development and internal motivation, teacher merit pay has trivial impact on students' scores.

3. Discussion

A confusing phenomena occurs when previous studies support controversial opinions concerning teacher merit pay. The reason can be categorized to the confusion over the definition of teacher merit pay, various dimensions of teacher merit pay impact and length of intervention.

Firstly, teacher merit pay is operated differently in different education system. For example, in the IMPACT program mentioned above, teacher merit pay was presented in a form of teacher-evaluation system, in which student performance was an essential factor. This system requires teachers to focus too much on the evaluation indexes which increase their anxiety about the dismissal threats. This system increases teacher turnover rate, hence promoting the departure of poorly performing teachers, which increase student performance by improving the average

level of the teaching staff. In IMPACT example, teacher merit pay can be defined as part of teachers' pay, not an extra incentives. In the New York City example, teacher merit pay is an incentive policy in which although no significant improvement in student achievement occurred, teacher can still get their original pay. In this case, teachers will design their own teaching strategy to fit the policy. However, the results showed no evidence that teacher incentives increase student performance, attendance, or graduation. Future study should choose appropriate system of teacher merit pay and avoid other disruptive factors such as the socioeconomic factors on student performance or the pressure on teachers to teach to the test rather than focusing on holistic education.

Secondly, the impact of teacher merit pay on student academic performance is multifaceted. The intermediary variables vary in different researches. In most studies suggesting positive results, teacher turnover rate is the intermediary variable. Such policy modifies teacher merit pay and affect student academic performance in a broader level, which is the teacher quality. However, for the studies not showing significant results, they limited the teacher turnover and focus on teachers' personal growth aiming at increasing students' grades. It can be substantiated that teacher merit pay is more appropriate for school or government to set policy to select outstanding teachers compared to the progress in teachers' professional skills.

Thirdly, the duration of different teacher merit pay program affects the results. A convincing explanation of the negative results is that the span of teacher merit pay program is too short for teacher to develop their professional skills as well as design and imply proper teaching style. A recommended teaching duration is at least 3 years. Future study should ensure the duration of the experiment long enough for teacher to change and thus have impact on students' academic performance.

4. Conclusion

The impact of teacher merit pay on student performance is a complicated issue, with evidence suggesting a positive but limited effect. The effectiveness of merit pay programs is influenced by factors such as teacher motivation, the design of the incentive system, and the duration of the program. While merit pay has the potential to improve students' academic performance by facilitating high-quality teaching. However, the success of teacher merit pay depends on careful implementation and consideration of the unique context of each educational setting. Future research should continue to explore the conditions under which teacher merit pay can be most effective, ensuring

that such programs contribute meaningfully to the enhancement of student performance.

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