



Optimizing Teaching Efficacy: Role of Collaborative Routines in Public Elementary Education

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Abstract

This study investigates the relationship between teaching efficacy and collaborative routines among public elementary school teachers in Calumpang District, particularly in the context of the K-12 curriculum implementation. The research addresses the challenges faced by educators who are traditionally oriented and may struggle to adapt to innovative teaching methods, thereby affecting their efficacy. A quantitative methodology was employed, utilizing surveys to gather data on teachers' demographic profiles, levels of teaching efficacy—focusing on classroom management, instructional strategies, and student engagement—and their participation in collaborative routines such as co-planning lessons and sharing best practices. Results indicate a significant positive correlation between teachers' engagement in collaborative routines and their perceived teaching efficacy. Teachers who actively participate in collaborative activities demonstrate enhanced self-efficacy, which is essential for effective instruction. The findings reveal that factors such as limited professional development opportunities and resistance to new pedagogical approaches contribute to low teaching efficacy. This study underscores the critical role of structured collaborative routines in fostering an environment conducive to professional growth and improved instructional practices. The implications of this research extend to educational administrators and policymakers, emphasizing the need for initiatives that promote collaboration among teachers. By enhancing collaborative practices, schools can significantly improve teaching efficacy, ultimately benefiting student learning outcomes. This study contributes to existing literature by providing localized insights into the dynamics of teacher collaboration and efficacy within the Philippine educational context. Future research should explore longitudinal impacts of sustained collaboration on teaching practices and student performance, further validating the role of professional development in enhancing educational effectiveness.

Keywords: Collaborative Teaching, Curriculum, Elementary Education, Teaching Efficacy, Teaching Routine

Introduction

The transition to the new curriculum has proven challenging for traditional teachers, leading to reduced effectiveness in their teaching as they are more accustomed to conventional methods. Addressing the issue of low teaching efficacy, educational institutions are striving to enhance teacher effectiveness and adaptability to societal changes. 21st-century educators should adopt innovative approaches to improve their instructional practices. Participation in educational events that enhance teaching quality, such as job-embedded professional development and collaborative routines, is crucial. These activities, mandated by the

Department of Education (DepEd), divisions, districts, schools, or selected by teachers, help educators maintain and expand their knowledge, skills, and understanding to boost effectiveness. Several factors contribute to teacher ineffectiveness, including limited knowledge, lack of personal development motivation, inadequate job orientation, insufficient seminars and training, and delayed distribution of teaching guides. Moreover, the low adaptation to the new curriculum, with a preference for traditional methods, hinders teaching efficacy. Government initiatives, such as collaborative routines, aim to address these issues and improve teaching efficacy, ultimately enhancing instructional practices.

In the study of Cakiroglu *et al.* (2005) indicates that highly self-efficacious teachers offer more learning experiences to students, while those lacking self-efficacy may perpetuate poor teaching practices, as noted by Chang, Lin & Song (2011). Numerous studies have explored the relationship between professional development and self-efficacy among teachers. For instance, Hall (2008) found a moderate correlation between professional development and self-efficacy among public elementary school teachers. However, specific studies on the impact of job-embedded professional development, including collaborative routines, on teaching efficacy are limited, with most research conducted by foreign authors in different countries.

In the Calumpang District, public school teachers face low efficacy in implementing the new K-12 curriculum. This underscores the need to boost self-efficacy in teaching the new curriculum. Addressing this gap will validate teachers' perceptions and contribute to their professional growth.

Statement of Problem

This study aims to determine the relationship between teaching efficacy of teachers and collaborative routines. Specifically, this study attempted to provide answers to the following questions:

1. What is the demographic profile of teachers in terms of sex; age; and educational attainment?
2. What is the level of teaching efficacy of teachers in terms of classroom management; instructional strategies; and student engagement?
3. To what extent do teachers engage in collaborative routines in terms of co-planning lessons; sharing best practices; and participating in professional learning communities?
4. Is there a significant relationship between the teaching efficacy of teachers and their engagement in collaborative routines in terms of the identified indicators?

Significance of Study

This study is undertaken with the hope that the results of this study can provide useful information which can be used to determine the relationship between teaching efficacy and collaborative routines of public elementary school teachers in Calumpang District. As such, this study may present significance to the administrators, teachers, pupils, other researchers and also to the researcher.

The findings of the study may serve as a basis for the administrators for the improvement of the collaborative routines implemented in the school. One example of this is every Friday the teachers collaborate after class to share their thoughts or insights about employing the strategies inclined in the 21st century within the school premises that would support the teaching efficacy of teachers. This study may also help the teachers to improve their insight about themselves as

educators. It may assist the teachers who have weaknesses in their teaching abilities and their insufficiency in teaching. It may encourage them to reflect on themselves to gain confidence and become more effective in the field of teaching.

Moreover, in studying this paper, the pupils may be able to benefit from the improved instructional practices of the teachers which may be brought about by the engagement of teachers on collaborative routines of job-embedded professional development. In accordance with the improved teaching efficacy of teachers, there is a possibility that there is also an increase of performance by the pupils that can be traced to the engagement of teachers on collaborative routines.

Furthermore, this study may provide other researchers an additional knowledge and learning to their preferred study. This could help them be motivated in pursuing their studies that are parallel to this research. It could serve as a future reference that is essential for their studies.

Lastly, the findings of this study can also help the researchers to develop the needed characteristics as a future educator and to improve their competence to their future profession. In order for the researchers to be proficient in the field of teaching in the near future.

Literature Review

Teaching Efficacy of Teachers

Effectiveness defined as the capacity to deliver the lessons well in the classroom to bring a positive influence to the instructional practices of teachers and how this positive influence employed in the field of teaching. Teaching efficacy is essential to teachers individually because it is their source to be able to come up with a better outcome. Every teacher is given to have the knowledge and skills in the field of teaching. But the knowledge alone doesn't ensure effective teaching as well as to skills alone doesn't ensure effective teaching. Furthermore, individuals should be guided and boost their abilities to use knowledge and skills together effectively in the educational field. Putting knowledge and skills together will put effectiveness into action and would result to a better outcome in the field of teaching. Therefore, a teacher must be highly efficacious in the educational field. Bandura (1997), self-efficacy is the personal belief that one is capable of performing tasks in suited and effective manner to achieve certain goals. In the educational context, the self-efficacy of a teacher is the teacher's personal belief or teacher's self-perceived belief. It is the effect of the teachers' conviction to teach pupils efficiently and effectively. Self-efficacy beliefs influence thought patterns, which in turn inhibit actions. Zulkosky (2009) added that self-efficacy beliefs had been considered to have great influence on how a person acts, feels, thinks and gets motivated. By the study of Guanzon (2016), found out that the teachers have a high level of efficacy in handling large class size. The said study was slightly parallel to the study of Ford (2012). The findings of the study revealed that the dimension of self-efficacy assures the position ratings between 3.50 to 4.61. However, the teaching efficacy of teachers in this study ranged from high to very high.

A teacher is expected to be proficient in the use of advanced educational technologies, classroom management techniques, curriculum materials and instructional technologies. Also, a teacher uses a repertoire of teaching models and assessment strategies depending on the goals or objectives to attain. Also, effective instruction includes methods that are developmentally appropriate, meet students' diverse learning needs and recognize the significance of

learning that occurs in social context. (Parkay & Stanford, 2004).

The study of Chang, Lin & Song (2011) revealed that teachers who do not have a strong sense of self-efficacy and who do not have a clear understanding of effective pedagogy might be perpetuating poor teaching practices. An effective teacher possesses the characteristics that we in teachers every generation like the teacher knows the subject well enough to teach it appropriately, concern to the pupils and treats them concerning getting respect in return. Also, the effectiveness of a teacher refers to the results a teacher gets or to the amount of the progress the pupils make toward some specific goal or objectives of education. (Brinko, 1991). By the study of Killen (2007), an effective teacher will continually seek to improve their knowledge, skill, and understanding on the subjects about to teach. A teacher would be passionate about the subject and about teaching the subject. The enthusiastic teacher would be more successful at engaging learners in learning. A teacher that would feel secure about the knowledge they have, skills, understanding, and ability to help students learn.

Moreover, Felomino (2006) stated that teaching is a profession that demands basic competencies in carrying out its mission. The quantity of learning achieved by the pupils is related to the quality of teaching done by the teacher. Also to make teaching and learning more productive in the elementary grades, the teacher must have a thorough knowledge of the learning process and broad knowledge of the psychological principles. Dagum (2005) noted that it is important that the teacher should understand the philosophical, psychological and social objectives of education and rate high in honesty, generosity, congeniality, tactfulness, friendliness, cooperativeness and high moral standard. Also to the characteristics that are desirable for a teacher such as a self-analysis, self-control, self-criticism, self-confidence, self-culture, self-rating, and self-sacrifice. Therefore, teachers' attitudes have a pervasive effect for they influence the psychological climate of the classroom. Bogler (2007) found out that subordinate's perceptions of supervisor's credibility and attractiveness in social and task are positively related to both employee job satisfaction and motivation. It is a hypothesized that the greater the involvement of a teacher in the decision-making process, the higher the level of job satisfaction. A principal who is perceived as democratic manager maintains open channels of communication with the staff; a teacher would be more satisfied with the job.

An effective teacher at various times has been called ideal, analytical, dutiful, competent, expert, reflective, satisfying, respected and responsive (Cruickshank & Haefele, 2001). Teaching Effectiveness can be experienced by studying the models of instruction that can nail and define what it is that effective professional teachers know and do. There could be a set of behaviors that effective teachers would incorporate into their daily professional practice. It involves a deep understanding to the subject matter, theories, students' differences, planning, classroom instructional strategies, knowing students' individually, assessment of students' understandings of learning, achievements, and proficiency with learning outcomes. It also includes a teacher ability to reflect, collaborate with colleagues and continue ongoing professional development (Barry, 2010).

A perspective stated by Wankat (2007) with his definition of effective teaching as "teaching that fosters student learning." Efficiency without effectiveness such as efficiently teaching a class in which students do not learn is hollow. Also, Balam (2006) added that if relationships do exist between self-

efficacy and teaching effectiveness, then the sense of teacher efficacy could be used as one of the measures of teaching effectiveness. The study of Alsmadi (2009), uncovered that student ratings are considered as valid and reliable sources of data of teaching effectiveness and are argued to supplement with other evidence about teaching effectiveness by some researchers. Schunk and Meece (2006) emphasized that self-efficacy is grounded in the theoretical framework of the social cognitive theory. Also, efficacy beliefs determine how the environmental opportunities are perceived. Based on social cognitive theory teacher had self-efficacy may be conceptualized as individual in their own ability to plan, organize and carry out activities that required to achieved certain educational goals.

Airasan & Gullickson (1994), self-assessment involves teacher's evaluation of his teaching. There are numerous procedures to attain a measure of self-assessment which is self-controlled and referents such as personal reflection, analysis of lecture recordings, lesson plans, considering students' opinions and the outcome of teaching. Self-assessment can be beneficial as it can be gathered in all educational setting, provide insights about teacher's view about their way of teaching and can be employed during interventions for the improvement in teaching as teachers' evaluate themselves. Pajares (2005) as cited by Skaalvik & Skaalvik (2009), efficacy beliefs determine how environmental opportunities and impediments are perceived and affect the choice of activities, how much effort expended on the activities and how long people will persevere when confronting obstacles.

Teaching efficacy of a teacher is a relevant factor that determines a teacher success in carrying out a productive teaching-learning process. An optimistic and confident individual is efficient and capable of the profession. Therefore, the teachers' positive imprint to their abilities and an effective conviction that a teacher can bring change on the lives of the pupils and to the people around them is a clear manifestation of a highly-efficacious teacher that must sustained throughout their years in the field of teaching.

Collaborative Routines of Teachers

Teacher collaboration is a powerful engine for change. Collaboration routines, such as peer learning groups and team lesson planning, break this isolation and both support and challenge professionals' thinking, beliefs, and practices. These routines allow teachers to come out of the action, slow the work down and, with the support of peers, review data, reflect on the impacts of their practice, and design instructional innovations (Pachiano, Klein, and Hawley, 2016).

Teachers are creating a social environment that allows them to learn from other teachers when they collaborate. In Collaboration, the teacher can foster creativity and integration on specific topics (Goddard & Goddard, 2007). Sawyer & Rimm-Kaufman (2007)^[8] promulgated that the schools culture influences the teachers' attitudes and perceptions about collaboration. In this supportive context, data helps teachers and leaders uncover their practice strengths, better understand challenges, set goals to focus learning and improvement efforts, and track their progress. This process of collaborative, data-driven inquiry supports teachers to deepen their understanding of what the data means, increases individual ownership of improvement goals and plans, and shapes greater collective responsibility for improvement of teaching and the outcomes for children and families. With a collaborative, supportive group of peers, data that had previously been perceived as a punitive means of

highlighting weaknesses morphs into a useful tool for joint problem solving.

Over time, these routines strengthen professional dispositions for collaboration and excellence, and create a professional culture within which teachers' value reflecting, examining practice, and continuously improving teaching and learning together (Pachiano, Klein and Hawley, 2016). Indeed, collaboration is often advocated, yet its effects are less frequently investigated. Many studies have reported positive outcomes of collaboration for teachers, including improved efficacy (Shachar & Shmuelovitz, 1997), more positive attitudes toward teaching (Brownell *et al.*), and higher levels of trust (Tschannen-Moran, 2001) ^[40]. Little has been done, however, to test the prediction that teacher collaboration is associated with increased student achievement. Collaborative Learning is often linked to the term cooperative learning. Collaborative learning involves two or more individuals who are working together to accomplish a task or produce a product in a particular way (Akmad, 2024; Akmad & Abatayo, 2024; Gunter, Estes, and Schwad, 2007) ^[1]. Lev Vygotsky's (1962) social theories promoted collaborative learning. Vygotsky argued that learning is stemmed from the exchanging of ideas and interactions among peers.

However, other researchers have, argued the possibility that collaboration may improve teaching and learning (Goddard & Heron, 2001; Pounder, 1998). According to Hausman and Goldring (2001), "teachers must be central to any meaningful change in schools" (p. 44). When teachers collaborate, the more they will be able to converse knowledgeably about theories, methods, and processes of teaching and learning, and thus improve their instruction. When teachers have opportunities to engage in professional discourse, they can build upon their unique content, pedagogical, and experiential knowledge to improve instruction. Although many scholars suggest that the combined skills and knowledge possessed by a team of educators should be an asset to school processes and hence student achievement, this argument is mainly theoretical. However, to make effective policy recommendations, researchers must move beyond expositions on the rationale for teacher collaboration to studies of its relationship to student learning (Evans-Stout, 1996; Hughes, 1994; Smylie, Lazarus, & Brownlee-Conyers, 1996; Welch *et al.*, 1999) ^[38].

Moreover, collaboration can occur when teachers talk often about their professional work (e.g., during planning periods). These examples clearly demonstrate that schools can present many opportunities for teachers to collaborate for the improvement of instruction, yet not all schools do. Indeed, of the few empirical studies on collaboration conducted in the 1970s, Evans-Stout noted that most suffered from poor designs and that more recent studies have investigated the advantages of collaboration for teachers rather than students. Erb (1995) found that when teachers work together, they are not only less isolated, but they are also more focused on academic and behavioral outcomes for students than when they work alone. Pounder (1998) ^[32] examined teacher collaboration by studying teachers who participated formally as middle school team members to coordinate curriculum, interventions, management, and parental communications, as compared with non-teaming teachers. Pounder found that teachers who worked on teams reported more skill variety, knowledge of student performance, contact with parents, and knowledge of other teachers' work. Pounder asserted that when teachers work together on formal teams, there is a "tighter connection between teachers' work and student outcomes" (p. 66). This is because collaboration provides valuable opportunities for teachers to learn to improve their

instruction.

Teacher collaboration is a systematic process that allows teachers to analyze and improve instructional practices and student learning outcomes (Williams, 2010) ^[42]. Melnick and Witmer (1999) concluded from their study that teachers believed strongly in teacher collaboration and they often made time to collaborate after school hours. Professional learning opportunities for teachers encourage active involvement in the learning community. Increased professional learning is due to the understanding that when teachers work together, they express various perspectives, experiences, and reflect on their teaching practices in an effort to increase professional growth (Williams, 2010). Teachers that participate in collaborative professional learning realize benefits from a sharing of guidance and expertise; thus, establishing a positive interdependence among the individuals in a school (Williams, 2010). Teacher collaboration transforms teachers into resources for one another. Establishing a community of learners also fosters a positive learning community and, as a result, instructional practices are improved. Teacher learning is key to education reform efforts: Teacher collaboration has been linked to enhanced teacher learning and higher student achievement (Goddard & Goddard, 2007).

In a survey of practicing teachers, Melnick and Witmer (1999) found that teachers believed so strongly in the importance of sharing instructional strategies and ideas that they often made time during non-school hours to meet in teams to discuss these issues. Rosenholtz (1989b) supported these views and further stated that teachers should be involved collectively in instructional decision making. Melnick and Witmer (1999) contended that teachers must become actively involved in their own professional development. Such involvement provides opportunities for teachers to learn with colleagues. Further, Melnick and Witmer stated that encouraging active teacher involvement through professional development may allow teachers to bring about systemic reform. Professional development may be key to improving instruction and fostering a strong sense of professional community (Louis *et al.*, 1996). Therefore, there are many practices to enhance the skills of the teachers. Collaborative routines from job-embedded professional development JEPD can be one of the teaching practices given to teachers to improve their teaching. Although teacher collaboration can have challenges teachers must be able to be motivated in order for their professional growth to prosper and for them to better their performance.

Relationship between Teaching Self – Efficacy of Teachers and Collaborative Routines

The two variables indeed related because the more teachers engaged in the collaborative routines of job-embedded professional development, the higher the level of their self-efficacy or teaching effectiveness. The relationship between the two variables suggests by the existing foreign literature. This present study attempts to provide some implications for job-embedded professional development in schools today especially in enhancing teaching effectiveness as well as teachers' self-efficacy. Bandura (2006), stated that Teacher's efficacy had recognized as a strong predictor of whether the content of professional development of teachers will transfer to classroom practice. Corcoran (2007) as cited by Skoretz (2011) agreed that effective job-embedded professional development could produce changes in classroom practice, enhance the capacity for continued learning and growth, and ultimately lead to learners' achievement.

Hall (2008), studied the relationships among self-efficacy and professional development among teachers. He uncovered that there is a statistically moderate significance between professional development and self-efficacy among public elementary school teachers. However, the researchers in this study have not specifically stated if there is a significant relationship between teaching efficacy and job-embedded professional development including collaborative routines, also if there are any influences including collaborative routines to teaching efficacy. Furthermore, almost all of the studies related to this were made by foreign authors in different countries. Hence, the researcher found it important to determine the relationship between the collaborative routines and teaching efficacy of teachers so that the perceptions of the teachers will be validated.

Shachar and Shmuelewitz (1997) also reported that higher levels of self-efficacy associated with increases in teacher collaboration. Pounder (1998) found out those teachers who worked collaboratively with other teachers strong and report a greater skill variety and awareness of student performance. Pounder concluded that there is a strong and positive connection when teachers collaborate with formal teams and student outcomes. Moreover, teachers participating in job-embedded professional development represent a change from the typical or basic ways of teachers to learn. Instead of attending a workshop outside of contract time, collaborative learning embedded in the daily structure of teacher's work. Hall *et al.* (2005) teachers' movement through stages of concern and levels of use in the implementation of lesson design was measured as they relate to changes in teachers' efficacy. It expected that as teacher's are successfully facilitated through the challenges or stages of job-embedded professional learning and move into higher levels of concern and also to the teachers' sense of efficacy would increase.

Another study of Borman and Rachuba (2009), supports the idea above. Researchers investigated whether elementary teachers of varying socio-economic levels had access to equal opportunities for professional growth and the results of the effect on efficacy and quantity of reformed instructional practices in the classroom. The findings revealed that an unequal distribution of professional development opportunities exists between high and low poverty schools. Teachers who give better quality professional development opportunities increased or improved in efficacy levels. Also, these teachers demonstrated an increased number of reformed instructional practices into their teaching.

Theoretical Framework

Social cognitive theory by Bandura (1997), self-efficacy is the personal belief that one is capable of performing tasks in an appropriate and effective manner to achieved certain goals. In the educational context, the self-efficacy of a teacher is the teacher's personal belief or teacher's self-perceived belief. It is the effect of the teachers' conviction to teach pupils efficiently and effectively. Self-efficacy beliefs influence thought patterns, which in turn inhibit actions. In fact, people are self-organizing, proactive, self-regulating and self-reflecting (Bandura, 2006). Schunk and Meece (2006) emphasized that self-efficacy is grounded in the theoretical framework of the social cognitive theory. Also, efficacy beliefs determine how the environmental opportunities are perceived. Based on social cognitive theory teacher self-efficacy may be conceptualized as individual in their own

ability to plan, organize and carry out activities that are required to achieved certain educational goals. From this perspective, self-efficacy affects one's goals and behaviors and is influenced by one's actions and conditions in the environment.

Collaboration routines, such as peer learning groups and team lesson planning, break this isolation and both support and challenge professionals' thinking, beliefs, and practices. These routines allow teachers to come out of the action, slow the work down and, with the support of peers, review data, reflect on the impacts of their practice, and design instructional innovations (Pachiano, Klein, and Hawley, 2016). The perceived self-efficacy is concerned with people's beliefs in their capabilities to exercise control over their own that affect their lives. Beliefs in personal efficacy affect life choices, level of motivation, quality of functioning, resilience to adversity and vulnerability to stress and depression. People's beliefs in their efficacy are developed by four main sources of influence. They include mastery experiences, seeing people similar to oneself manage task demands successfully, the social persuasion that one has the capabilities to succeed in given activities, and inferences from somatic and emotional states indicative of personal strengths and vulnerabilities.

Ordinary realities are strewn with impediments, adversities, setbacks, frustrations, and inequities. People must, therefore, have a robust sense of efficacy to sustain the perseverant effort needed to succeed. The succeeding periods of life present new types of competency demands requiring further development of personal efficacy for successful functioning. The nature and scope of perceived self-efficacy undergo changes throughout the course of the lifespan (Bandura, 1994) ^[7].

Conceptual Framework

In this study's conceptual framework, collaborative routines serve as the independent variable, which encompasses various practices that teachers engage in to enhance their professional development and instructional effectiveness. These routines include co-planning lessons, sharing best practices, and participating in professional learning communities. The premise is that these collaborative activities can positively influence teachers' perceptions of their own capabilities and effectiveness in the classroom. The dependent variable is teaching efficacy, which reflects teachers' self-perceived competence in their roles. This is assessed through three key dimensions: classroom management, instructional strategies, and student engagement. The study aims to explore how engagement in collaborative routines affects these dimensions of teaching efficacy.

By establishing this relationship, the study seeks to determine whether increased participation in collaborative practices leads to higher levels of self-efficacy among teachers. The findings from this research can provide valuable insights into how collaborative routines can be leveraged to improve teaching effectiveness, ultimately benefiting both educators and their students. This framework allows for a structured analysis of the data collected, focusing on how independent variables (collaborative routines) impact dependent variables (teaching efficacy), thereby contributing to a deeper understanding of the dynamics within educational settings.

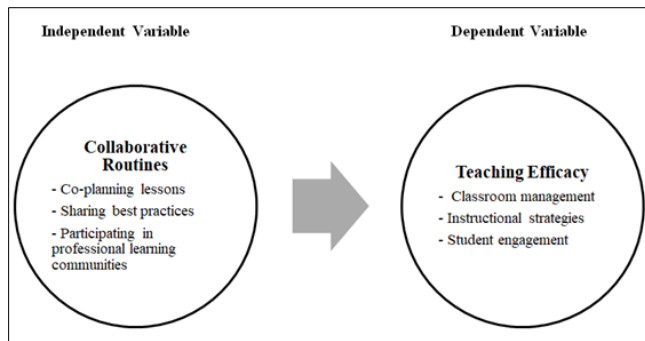


Fig 1: Conceptual framework of the study.

Research Methodology

Research Design

This study employed a quantitative correlational research design. The correlational design aims to determine the relationship between two variables (Williams, 2006). Therefore, this design was appropriate in this study and its method was fact-finding research that showed and described the significant relationship between job-embedded professional developments such as collaborative teaching.

Participants

The respondents of this study involved seventy-three (73) sampled teachers of the public elementary schools in Calumpang District.

Data Analysis

The data for this study were collected using two types of

survey questionnaires. The first survey was specifically designed with twenty items to measure job-embedded professional development, focusing on collaborative routines. Meanwhile, the second instrument assessed the self-efficacy of teachers through a survey questionnaire. This questionnaire was adapted from the modified version used in the study by Pacquiao (2017) ^[29], which itself was based on Bandura's (1997) Teacher Self-Efficacy Scale. To examine the significant relationship between job-embedded professional development, specifically collaborative routines, and the teaching efficacy of teachers, the Pearson Product-Moment Correlation Coefficient was employed at a 5% significance level.

The researcher further modified it to align with the needs of the study. The data collected for this study were analyzed using frequency counts and weighted means to describe the occurrence of Collaborative Routines. A 5-point scale was utilized with the following descriptions:

Table 1: Scoring Plan for the Occurrence of Collaborative Routine

Scale	Range	Description	Verbal Interpretation
5	4.50-5.00	Always	Very Great Extent
4	3.50-4.49	Often	Great Extent
3	2.50-3.49	Sometimes	Moderate Extent
2	1.50-2.49	Rarely	Low Extent
1	1.00-1.49	Never	Very Low Extent

Furthermore, a five-point scale was employed to assess the level of teaching efficacy among teachers, as described below:

Table 2: Scoring Plan for the level of Teaching Efficacy

Scale	Range	Description	Verbal Interpretation
5	4.50-5.00	Strongly Agree	Very High Level
4	3.50-4.49	Agree	High Level
3	2.50-3.49	Undecided	Moderate Level
2	1.50-2.49	Disagree	Low Level
1	1.00-1.49	Strongly Disagree	Very Low Level

Result and Discussion

This section presents the findings from the survey questionnaires completed by participants. The results are organized according to the research problem statements: demographic profile of the participants, level of teaching efficacy, teachers' engagement in collaborative routines, and the relationship between teaching efficacy and engagement in collaborative routines.

Demographic Profile of Teachers

Table 3: Frequency and Percentage in terms of Gender

Gender	Frequency	Percentage
Male	30	41.1
Female	43	58.9
Total	n=73	100

The data indicates a higher representation of female teachers (58.9%) compared to male teachers (41.1%). This gender imbalance can have implications for teaching efficacy, which is defined as a teacher's belief in their ability to positively impact studponderent learning. Research shows that teachers with high self-efficacy are more likely to employ effective instructional strategies and create supportive learning environments, which can enhance student engagement and achievement (Education Endowment Foundation, n.d.; National Education Association, 2021). In the context of

Calumpang District, the predominance of female teachers may contribute to a nurturing and collaborative classroom atmosphere, as studies suggest that female educators often emphasize relational teaching styles that foster student collaboration and emotional support (Jorgensen, 2023; Houghton Mifflin Harcourt, 2024) ^[22]. This aligns with findings that suggest a strong correlation between teacher efficacy and student outcomes, indicating that the majority female teaching staff may be well-positioned to positively influence student learning experiences (Chartered College of Teaching, n.d.; Akmad, 2024; TLC Onestoga, 2024) ^[1].

Table 4: Frequency and Percentage in terms of Age

Age	Frequency	Percentage
21-30	18	24.7
31-40	25	34.2
41-50	20	27.4
51 and above	10	13.7
Total	n=73	100

The age distribution of public elementary school teachers in Calumpang District reveals significant insights into the demographic characteristics of the teaching workforce. The data indicates that teachers aged 21-30 comprise 24.7% of the sample, representing a notable portion of the workforce. This younger demographic often brings fresh perspectives and innovative teaching methods, influenced by recent

educational trends and technologies (Cross River Therapy, 2024). The largest segment, teachers aged 31-40, accounts for 34.2% of the population. This group is likely to have gained substantial experience and confidence in their teaching efficacy, which can enhance their instructional strategies and positively impact student outcomes (OECD, 2016) ^[27].

Teachers aged 41-50 represent 27.4% of the workforce and are approaching the later stages of their careers, characterized by deep expertise and a wealth of knowledge in pedagogy. Their presence is vital for mentoring younger teachers and providing stability within the educational environment (Population Reference Bureau, 2002). Finally, those aged 51 and above make up 13.7% of the teaching staff. While this group may face challenges related to retirement considerations, they also bring invaluable experience that can greatly benefit both students and less experienced teachers (National Center for Education Statistics [NCES], 2024).

The age distribution highlights several implications for

teaching efficacy within Calumpang District. The blend of younger teachers with innovative ideas and older, more experienced educators can create a dynamic teaching environment that leverages diverse teaching styles and methodologies. Continuous professional development tailored to different age groups can enhance teaching practices across the board; younger teachers may benefit from mentorship programs with older colleagues, while seasoned educators might engage in training on new educational technologies. Furthermore, understanding these age demographics can help school administrators develop strategies to retain experienced teachers while attracting younger talent, ensuring a balanced workforce. This age distribution of table 4 among public elementary school teachers in Calumpang District reflects a diverse workforce with varying levels of experience and perspectives, which is crucial for fostering an effective learning environment that meets the needs of all students.

Table 5: Frequency and Percentage in terms of Educational Attainment

Educational attainment	Frequency	Percentage
Bachelor's Degree	55	75.4
Master's Degree	15	20.5
Doctorate Degree	3	4.1
Total	n=73	100

Table 5 reveals that a significant majority of teachers hold a Bachelor's Degree (75.4%). This is followed by those with a Master's Degree at 20.5%, and only small percentages (4.1%) possess a Doctorate Degree. This distribution highlights the predominance of teachers with foundational qualifications, as a Bachelor's Degree is typically the minimum requirement for teaching positions in many educational systems (National Center for Education Statistics [NCES], 2023). The high percentage of teachers with Bachelor's Degrees suggests that the teaching workforce is largely composed of individuals who have completed the essential training necessary for effective instruction. Research indicates that teachers with at least a Bachelor's Degree contribute substantially to student learning compared to those with lesser qualifications, underscoring the importance of educational attainment in enhancing instructional effectiveness (PMC, 2021). Furthermore, the presence of 20.5% of teachers holding Master's Degrees points to a commitment to professional

development and advanced pedagogical knowledge, which can further improve teaching practices and student outcomes (Harris & Sass, 2011) ^[19].

However, the relatively small percentage of teachers with Doctorate Degrees (4.1%) may indicate limited access to advanced educational opportunities or a lack of incentives for pursuing higher degrees within the teaching profession. While doctoral-level education can contribute to deeper expertise and research capabilities, its direct impact on elementary education may vary based on factors such as subject matter and teaching context (OECD, 2021) ^[28]. Overall, this educational attainment distribution reflects a workforce that is primarily well-qualified, with implications for instructional quality and student achievement in Calumpang District.

Teaching Efficacy Levels of Teachers

Table 6: Mean score and SD in terms of levels of teaching efficacy

Dimensions	Mean score	Standard deviation	Interpretation
Classroom Management	3.6	0.8	High level
Instructional Strategies	4.1	0.5	High level
Student Engagement	3.9	0.6	High level

**Note: 1 (low efficacy); 5(high efficacy)*

Table 6 presents the mean scores and standard deviations for various dimensions of teaching efficacy among public elementary school teachers in Calumpang District. The dimensions assessed include Classroom Management, Instructional Strategies, and Student Engagement, with mean scores of 3.6, 4.1, and 3.9, respectively. These scores reflect a scale where 1 indicates low efficacy and 5 indicates high efficacy. The highest mean score is observed in Instructional Strategies (M = 4.1, SD = 0.5), suggesting that teachers feel most confident in their ability to implement effective instructional methods. This aligns with research indicating that teachers who perceive themselves as effective in instructional strategies are more likely to engage students and enhance learning outcomes (Tschannen-Moran & Woolfolk Hoy, 2001) ^[40]. In contrast, Classroom Management has the

lowest mean score (M = 3.6, SD = 0.8), indicating that while teachers generally feel competent in managing their classrooms, there is still room for improvement. Effective classroom management is crucial as it directly impacts student behavior and engagement; teachers who struggle in this area may find it challenging to maintain a conducive learning environment (Skaalvik & Skaalvik, 2007) ^[37].

The mean score for Student Engagement (M = 3.9, SD = 0.6) indicates a moderate level of confidence among teachers regarding their ability to engage students actively in the learning process. Student engagement is essential for fostering a positive educational experience and is closely linked to academic success (Shaukat *et al.*, 2011) ^[36]. The results from Table 6 suggest that while teachers in Calumpang District feel relatively efficacious in their instructional strategies and student engagement, there are

notable challenges in classroom management that could benefit from targeted professional development initiatives. Enhancing teachers' self-efficacy in classroom management may lead to improved student outcomes and a more effective

teaching environment.

Engagement in Collaborative Routines

Table 7: Mean score and SD in terms of collaborative routine engagement

Collaborative routine	Mean score	Standard deviation	Interpretation
Co-planning Lessons	3.8	0.7	Great Extent
Sharing Best Practices	4.0	0.6	Great Extent
Participating in PLCs	3.5	0.8	Great Extent

Table 7 presents the assessed dimensions which include Co-planning Lessons, Sharing Best Practices, and Participating in Professional Learning Communities (PLCs), the table indicates mean scores of 3.8, 4.0, and 3.5, respectively. These scores indicate a moderate to high level of engagement in collaborative routines, with the highest mean score recorded for Sharing Best Practices ($M = 4.0$, $SD = 0.6$). This suggests that teachers feel confident and committed to exchanging effective teaching strategies with their peers, which is crucial for fostering a collaborative culture that enhances instructional quality (Harris & Sass, 2021).

The mean score for Co-planning Lessons is also relatively high ($M = 3.8$, $SD = 0.7$), indicating that teachers actively engage in joint lesson planning. This collaborative effort is essential as it allows educators to integrate diverse perspectives and resources into their teaching, ultimately benefiting student learning outcomes (Spalding & Appling,

2024). However, the lowest mean score is observed in Participating in PLCs ($M = 3.5$, $SD = 0.8$), which may reflect challenges in scheduling or prioritizing time for professional development activities. Participation in PLCs is vital for continuous professional growth and fostering a sense of community among educators (Kilgo *et al.*, 2022). Hence, the table indicates that while teachers in Calumpang District are engaged in collaborative routines, there is potential for further enhancing participation in PLCs to maximize the benefits of collaborative learning environments. Strengthening these routines can lead to improved teaching practices and better student outcomes as teachers continue to share knowledge and support one another in their professional journeys.

Relationship between Teaching Efficacy and Engagement in Collaborative Routines

Table 8: Pearson correlation coefficients

Variables	Classroom Management	Instructional Strategies	Student Engagement	Co-planning Lessons	Sharing Best Practices	Participating in PLCs
Classroom Management	1.00	0.65**	0.60**	0.55*	0.58*	0.52*
Instructional Strategies	0.65**	1.00	0.70**	0.67**	0.72**	0.65**
Student Engagement	0.60**	0.70**	1.00	0.62**	0.68**	0.61**
Co-planning Lessons	0.55*	0.67**	0.62**	1.00	0.75**	0.68**
Sharing Best Practices	0.58*	0.72**	0.68**	0.75**	1.00	0.74**
Participating in PLCs	0.52*	0.65**	0.61**	0.68**	0.74**	1.00

*Note: Correlation significance levels are indicated as follows: * $p < .05$, ** $p < .01$.

The Pearson correlation analysis conducted on the data from the study reveals significant relationships between various dimensions of teaching efficacy and engagement in collaborative routines among public elementary school teachers in Calumpang District. Specifically, there is a strong positive correlation between classroom management efficacy and co-planning lessons, with a correlation coefficient of $r=0.55$ ($p < 0.05$). This indicates that teachers who feel more competent in managing their classrooms are likely to engage more in collaborative planning activities. Similarly, the correlation between instructional strategies and sharing best practices is particularly noteworthy, showing a coefficient of $r=0.72$ ($p < 0.01$). This suggests that teachers who are effective in their instructional approaches are more inclined to share their successful practices with colleagues.

Furthermore, a robust correlation of $r=0.70$ ($p < 0.01$) exists between instructional strategies and student engagement, highlighting that effective instructional methods significantly enhance teachers' ability to actively engage their students. The highest correlation observed was between sharing best practices and participating in professional learning communities, with a coefficient of $r=0.74$ ($p < 0.01$). This indicates that those who actively share their teaching experiences are also more likely to participate in broader professional development activities. The result underscores the importance of collaborative routines as a means to

enhance teaching efficacy among educators. Engagement in these practices not only fosters individual teacher growth but also contributes to improved student learning outcomes through enhanced instructional strategies and effective classroom management techniques through which the data suggests that fostering a collaborative environment can be pivotal in increasing teachers' self-efficacy and effectiveness in the classroom.

Conclusion

The study confirms that there is a significant positive relationship between teaching efficacy and engagement in collaborative routines. This finding suggests that as teachers participate more in collaborative practices—such as co-planning lessons, sharing best practices, and engaging in professional learning communities—their self-efficacy in teaching increases. This aligns with existing literature that emphasizes the importance of collaboration in enhancing teachers' confidence and effectiveness in their instructional roles. The analysis of demographic factors revealed that while there were no significant differences in teaching efficacy based on sex, there were notable differences when grouped by age and educational attainment. Teachers aged 31-40 exhibited higher levels of teaching efficacy compared to older age groups, indicating that younger educators may be more adaptable to new teaching methods or more engaged in professional development. Additionally, educational attainment significantly influenced teaching efficacy levels;

teachers with advanced degrees (Master's or Doctorate) demonstrated greater self-efficacy than those with only a Bachelor's degree. This underscores the role of continuous professional development and higher education in fostering effective teaching practices. The findings highlight the necessity for educational institutions to promote collaborative routines as a means to improve teaching efficacy. By fostering an environment where teachers can share insights and strategies, schools can enhance instructional quality and ultimately improve student outcomes. The study advocates for ongoing professional development initiatives that encourage collaboration among teachers, thereby addressing the challenges posed by new curricula and evolving educational demands. This approach not only supports teacher growth but also contributes positively to student learning experiences within the classroom.

Recommendations

1. Educational institutions should prioritize job-embedded professional development programs that focus on collaborative routines. Regular workshops and training sessions should be organized to facilitate co-planning, sharing best practices, and participation in professional learning communities. This will provide teachers with opportunities to learn from one another, thereby enhancing their teaching efficacy.
2. There is a need to establish mentorship initiatives where experienced teachers guide those with less experience can foster a supportive environment for professional growth. Mentorship can help less experienced teachers gain confidence and improve their instructional practices through direct feedback and shared insights.
3. Teachers should be encouraged to engage in reflective practices that allow them to assess their teaching methods and identify areas for improvement. This could include peer observations, self-assessments, and discussions about teaching strategies that promote student engagement.
4. Schools should ensure that teachers have access to up-to-date instructional materials and resources that align with the new curriculum. This includes timely distribution of teaching guides, references, and orientation sessions on new instructional materials to help teachers adapt more effectively to changes in curriculum.
5. Schools should cultivate a culture that values continuous learning and professional growth among teachers. Encouraging participation in seminars, conferences, and educational events can help teachers stay informed about current trends and best practices in education.
6. Regular assessments of teaching efficacy should be conducted to identify trends and areas needing support. Feedback from these evaluations can inform targeted interventions aimed at improving teaching practices.

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