The Structural Relationship Between Principal's Instructional Leadership, Teacher Commitment and Teacher Self-Efficacy in Program Vokasional Menengah Atas (PVMA) in Malaysia

Ais Md Sulbidin¹*, Halizah Awang²

¹ Muar District Education Office,
  242 Jalan Arab, Muar, 84000, MALAYSIA

² Faculty of Technical and Vocational Education,
  Universiti Tun Hussein On Malaysia, Batu Pahat, 86400, MALAYSIA

*Corresponding Author: aismdsulbidin@gmail.com
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Article Info

Abstract

The academic achievement of students is influenced by the leadership capabilities of school administrators and the commitment and efficacy of teachers in their roles. However, within the Program Vokasional Menengah Atas (PVMA) context, there has been a concerning rise in students failing to meet minimum qualifications. This underscores the urgent need to assess the effectiveness of principals' instructional leadership as well as teachers' commitment and self-efficacy. This study aims to identify the interrelationships between instructional leadership, teacher commitment, and self-efficacy, as well as how instructional leadership and teacher commitment impact teacher self-efficacy. The research utilized three questionnaires adapted from previous studies that had been validated through face, content, and construct validation. The sample consisted of 318 PVMA teachers, and the data was analyzed using descriptive and inferential statistics. The findings of the study directly address the research problem by demonstrating the significant impact of principals' instructional leadership on teachers' commitment and self-efficacy. Significant correlations were found between instructional leadership and teacher self-efficacy, instructional leadership and teacher commitment, and teacher commitment and self-efficacy. The study highlights the positive influence of instructional leadership and teacher commitment on enhancing teacher self-efficacy, emphasizing the pivotal role of principals in fostering a supportive environment that prevents student underachievement. It provides actionable insights for principals, teachers, and education stakeholders to prioritize instructional leadership, improve teacher commitment, and enhance overall effectiveness in educational outcomes. Future research could expand by incorporating additional variables influencing instructional leadership and diversifying the sample population to enrich understanding and applicability across diverse educational contexts.

1. Introduction

School leadership is a critical factor influencing teachers' work and student performance, as it shapes the overall direction of the school (Shaked, 2024). However, effective leadership varies across educational institutions, depending on the leaders involved and their decision-making processes in diverse contexts (Liu et al., 2022). Each leader brings their unique personality, style, and methods to school administration. The principal, as the top leader of the school, significantly guides the school community to maintain a unified understanding and approach to work (Bada et al., 2024). Principals' primary role is to ensure that the ministry's goals and aspirations are realized throughout the school community (Dami et al., 2022). Principals act as ministry representatives within schools, linking higher management's directives with the teachers who implement policies and programs. While principals operate their schools according to their leadership style, all policies, aspirations, and objectives originate from higher authorities, including the ministry, state education departments, and district education offices (Kilag et al., 2024). Consequently, the effectiveness of a school heavily relies on the principal's leadership practices, which influence the direction and success of implemented programs.

With the rapid changes in the world, the role of principals as the first point of reference in schools has evolved to meet contemporary needs and human behaviour changes (Reid, 2021). Principals not only hold the power and status of "chief" but also bear the responsibility of ensuring that every individual in the school ecosystem understands and implements the set aspirations and directions. Therefore, principals need to perform several specific roles effectively. An ideal principal can determine and shape school goals, manage programs, foster a conducive climate, and create a supportive school environment (Hallinger et al., 2020). These aspects are emphasized in instructional leadership practices, a key determinant of school performance according to global literature and studies (Hallinger et al., 2018). Recent studies indicate that principals with strong instructional leadership significantly impact student outcomes and teacher work quality (Boyce & Bowers, 2018). Although all schools in the country operate centrally under the same ministry, each principal has unique short-term or long-term goals which makes goal-setting should consider the school's community's readiness, needs, and current state, which principals must understand well (F. Meyer et al., 2020). Program management, from planning to implementation, requires principals to have a broad vision of the school's and community's desired goals. Principals should not allow teachers to plan school programs independently without knowledge, agreement, and discussion, as this may impede achieving set goals.

Looking into specific context of technical and vocational education, school leadership gains attention for its distinct goals, directions, and work approaches. Principals in these schools bear greater responsibilities. Schools offering technical and vocational streams must ensure students successfully follow the curriculum, taught through skill-based experiential methods, differing from the regular curriculum (Pamungkas et al., 2020). To achieve this, principals must ensure that teachers are prepared in every aspect, including knowledge, skills, and teaching readiness. Moreover, principals should focus on fostering a positive atmosphere among the school community, especially teachers. Bouwmans et al. (2019) reported that school leadership influences teachers' spirit and work culture. This finding is relevant in technical and vocational schools, where an additional curriculum must be implemented alongside the mainstream curriculum. Poor instructional leadership from principals can negatively impact teachers' self-efficacy, commitment, and job satisfaction (Liu et al., 2020). Teachers, as the school's assets, are expected to implement programs and achieve the school's goals. Principals should prioritize teachers' needs and job satisfaction in their administration. Failure to do so disrupts teachers' motivation and commitment, leading to ineffective program implementation and hindering the achievement of school goals (Liu & Hallinger, 2018). Teachers need good levels of motivation and efficacy to be committed, which fosters a healthy school climate (Ma & Marion, 2021). Since teacher placement is decided by higher authorities, principals cannot arbitrarily transfer or remove teachers without valid reasons. Therefore, principals must use techniques to motivate teachers, maintaining high levels of efficacy, commitment, confidence, and job satisfaction.

The success of curriculum implementation in schools heavily relies on the leadership practices of principals and the behavior of teachers, who are crucial in delivering quality education to students (Khan et al., 2020). Principals' roles have evolved from administrative tasks to leading changes and implementing innovations (Hosseingholizadeh et al., 2023). Effective principals are expected to define the school's mission, manage instructional programs, and create a positive school climate (Alanoglu, 2022). Challenges persist, as principals need continuous training and support to make informed decisions (Bellibaş et al., 2021). Teachers' knowledge, confidence, and commitment significantly impact students' academic success, with empirical studies highlighting the importance of teachers' behaviours, such as their commitment to the school and profession, and their self-efficacy (Fauth et al., 2019). The combined effectiveness of principal leadership and teacher commitment is fundamental to successful curriculum implementation (Bellibaş et al., 2022).

In vocational education, programs like the Upper Secondary Vocational Program (PVMA) are designed to provide skill-based education to at-risk students (Magee et al., 2022). The principal's role includes ensuring program compliance and acting as a liaison with the Skills Development Department (Ministry of Human Resources, 2012). Despite these efforts, recent reports show a significant number of students failing to achieve

competency (Technical and Vocational Education Division, 2022). Reports highlight that some PVMA students fail the SKM2 exam post-Form 5, indicating a gap in teachers' behaviours, particularly their commitment and efficacy in curriculum implementation, crucial for student success, as well as principals' instructional leadership. This failure can be attributed to the effectiveness of teachers' teaching, with previous studies showing a considerable percentage of teaching not meeting high standards (PPPM 2013-2025). Teachers' self-efficacy and commitment, influenced by principals' leadership, are crucial for effective teaching and students' academic achievements (Salas-Rodríguez & Lara, 2023). However, the quality of instructional leadership among principals remains moderate, and many struggle to meet current educational challenges (Adams & Muthiah, 2020).

Teacher self-efficacy and commitment significantly influence academic outcomes, more so than students' personal factors. Thus, there is a pressing need to discuss teachers' commitment and self-efficacy together with principals' instructional leadership. Therefore, this study aims at identifying the structural relationship between principals' instructional leadership, teachers' commitment, and self-efficacy in the context of PVMA in Malaysia. The study is guided by four research questions:

1. Is there relationship between principals' instructional leadership and teachers' commitment?
2. Is there relationship between principals' instructional leadership and teachers' self-efficacy?
3. Is there relationship between teachers' commitment and teachers' self-efficacy?
4. Do instructional leadership and teachers' commitment contribute to teachers' self-efficacy?

2. Literature Review

2.1 Principal's Instructional Leadership

Instructional leadership, a central theme in educational research, highlights the active involvement of school principals in improving teaching quality and student learning outcomes (Shaked, 2024) Principals, as pivotal instructional leaders, shape school operations through their interactions with teachers, students, and the broader school community. Historically, instructional leadership emerged in the United States during the 1950s as a pragmatic approach rather than a purely theoretical model (Hallinger et al., 2020). Initially, school leaders focused primarily on administrative tasks with minimal emphasis on instructional responsibilities. However, by the 1970s, a shift occurred, prioritizing the teaching and learning processes, which underscored the critical role of principals in not only managing but also enhancing instructional practices to improve student outcomes (Bada et al., 2024).

Contemporary definitions of instructional leadership emphasize its impact on school culture and student learning outcomes, where leaders are deeply engaged in instructional processes, including the development of effective teaching practices, alignment of instructional systems, and the use of data to inform instructional improvements (Kilag & Sasan, 2023). This view reflects a shift from traditional administrative roles to a more hands-on approach where leaders actively participate in shaping the instructional environment. By focusing on the core of teaching and learning, leaders ensure that the curriculum is delivered effectively and that teaching methods are continuously refined to meet the needs of all students. This leadership approach also focuses on fostering a positive learning climate that supports continuous improvement and high-quality teaching (Veletić & Olsen, 2021). Creating such an environment involves cultivating a school culture where teachers feel supported and motivated to innovate and improve their practices. A positive learning climate is essential for sustaining momentum in educational improvement, as it encourages both students and staff to strive for excellence and adapt to changing educational demands. Additionally, collaborative professional development is crucial, promoting ongoing teacher collaboration to build collective capacity within the school (Shaked, 2023). Collaborative professional development goes beyond individual growth, focusing on building a shared knowledge base and a cohesive instructional approach among teachers.

The conceptual framework of instructional leadership has evolved significantly, driven by empirical studies across different countries (Bellibaş et al., 2021). This evolution reflects the increasing recognition of the importance of leadership in shaping the quality of education, with research showing that effective instructional leadership directly influences teaching practices and student outcomes in diverse educational contexts. This framework is characterized by three core dimensions: defining school missions, managing instructional programs, and cultivating a positive school climate (Gümüş et al., 2021). These dimensions serve as the foundation for instructional leadership, guiding principles and school leaders in their efforts to create a coherent vision, support instructional excellence, and maintain an environment that promotes learning and well-being. The dimensions encompass specific leadership functions, such as goal-setting, curriculum coordination, and professional development, which must be coherent and aligned with the school's educational goals (Thien et al., 2023). Each function plays a critical role in ensuring that all aspects of the school's operations are directed toward achieving its mission, requiring leaders to be strategic in their planning and execution to foster continuous improvement.

The latest instructional leadership model proposed by Thien (2020), underscores the principal's role in establishing clear goals, ensuring effective communication, and engaging the school community in the mission focused on advancing students academically. This model highlights the importance of leadership in setting a clear

direction for the school, where the principal not only articulates the goals but also actively involves teachers, students, and parents in the pursuit of academic excellence. Principals oversee instructional programs by supervising teaching, coordinating curriculum, and using data to monitor and improve student progress (Thien et al., 2021). Through these actions, principals play a pivotal role in enhancing instructional quality, ensuring that teaching practices are aligned with curricular goals, and that student progress is regularly assessed and supported through data-driven decisions. They also emphasize creating a positive school climate by safeguarding instructional time, promoting teacher development, and fostering an environment conducive to enhanced educational outcomes (Hosseingholizadeh et al., 2023). A positive school climate, characterized by respect, collaboration, and a focus on learning, is essential for both teacher and student success, and it is the principal's responsibility to protect this climate by prioritizing instructional time and investing in ongoing professional growth opportunities for teachers.

2.2 Teachers' Commitment

The term "commitment" encompasses various definitions, including its linkage to rewards whether material or moral for actions undertaken by an individual. Teacher commitment is a multifaceted concept that encompasses various dimensions of a teacher's dedication and connection to their profession (Mokhtar et al., 2023). This multidimensionality means that teacher commitment involves not just a single aspect of their work but a comprehensive engagement with all facets of their professional responsibilities, impacting how they approach teaching, interact with students, and contribute to the school community. It can be understood as a psychological bond between teachers and their profession, where they demonstrate dedication to teaching, devotion to students, and a strong identification with the educational goals they aim to achieve (Pan, 2023). This psychological bond fosters a deep sense of purpose and belonging, motivating teachers to go beyond their basic duties and strive for excellence in their teaching practices and student outcomes. This form of commitment is essential for achieving educational excellence and fulfilling professional responsibilities (Zhao, 2023). Without such commitment, the quality of education may suffer, as the passion and drive that come from a strong professional commitment are crucial for overcoming challenges, inspiring students, and continuously improving teaching methods.

Moreover, teacher commitment is a critical element within educational institutions, playing a vital role in the overall success of these institutions (Kalai et al., 2022). This importance stems from the fact that committed teachers are more likely to engage in continuous professional development, collaborate effectively with colleagues, and contribute positively to the school environment, thereby enhancing the institution's ability to meet its educational objectives. Commitment involves deep dedication not only to students but also to teaching, the school, and the broader profession (Nassir & Benoliel, 2023). This deep dedication means that teachers are not just focused on their immediate tasks but are also invested in the long-term success of their students, the advancement of their teaching practices, and the overall growth and reputation of their schools and the teaching profession. Such commitment is crucial for meeting organizational goals and significantly influences the academic achievements of students as well as the overall effectiveness of schools (Muhammad et al., 2023). When teachers are committed, they are more likely to implement innovative teaching strategies, support school initiatives, and work towards continuous improvement, all of which are key drivers of student success and school performance. Additionally, teachers' commitment is closely tied to their emotional investment in students, which is essential for fostering positive interactions in the classroom (Smith & Whitley, 2023). This emotional investment enables teachers to build strong, trusting relationships with their students, creating a supportive learning environment where students feel valued and motivated to achieve their best. By being emotionally invested, teachers are better equipped to understand and respond to the individual needs of their students, helping to nurture their social, emotional, and academic growth in a holistic manner.

Thien et al., (2014) define teachers' commitment into four dimensions, which are commitment towards students, teaching, school and profession. Firstly, teachers' commitment to students is rooted in their high self-efficacy, beliefs, and expectations (Hariri & Sumintono, 2020). This commitment extends beyond individual students to encompass the broader mission of teaching and the academic achievements of students within the school. Committed teachers actively support students through personal crises, demonstrate sensitivity to their development, and strive to enhance classroom activities with innovative teaching approaches. Second, commitment to work is defined as the level of dedication and willingness to engage in tasks, reflecting how individuals prioritize their job in their life (Ostad et al., 2019). In the context of teaching, this commitment specifically refers to dedication to the profession of teaching, characterized by a psychological attachment to teaching (Sahito & Vaisanen, 2020). Teachers' commitment to teaching is evident in their efforts to deliver effective teaching, maintain enthusiasm, and sustain motivation, while also investing time and attention in the teaching process (Bhatia & Jain, 2024). This commitment is bolstered by values such as active involvement in teaching-related activities, a strong professional identity as educators, and their levels of self-efficacy (Wang et al., 2021). Third, commitment to the school refers to teachers' belief in and adherence to the school's goals and values, their efforts to implement these values, their desire for active involvement, and their willingness to remain part

of the school community (Manla, 2021). This commitment necessitates teachers' dedication to the school's sustainability and achievement of its objectives, thereby enhancing its reputation as an exemplary institution (Gökyer, 2018). Key indicators of high commitment include collaborative efforts with fellow teachers, fostering positive teacher-student relationships, maintaining high task quality, and fostering a supportive working environment with the administration (Zhu et al., 2022). Finally, commitment to the profession denotes an individual's dedication and emotional attachment to their work or career path (Pan, 2023). It reflects how teachers identify with their profession and find satisfaction in it, crucial for developing skills and building relationships necessary for career success across various organizational contexts (Ma, 2022). Individuals with high professional commitment invest their full energy and emotions into their work, potentially enhancing their skills and knowledge, though this commitment may sometimes conflict with organizational loyalty (Singh & Gupta, 2015).

2.3 Teachers' Self-Efficacy

Teacher self-efficacy has emerged as a crucial construct in educational research due to its significant influence on both teaching practices and student outcomes. This concept, deeply rooted in the broader theory of self-efficacy, reflects a teacher's belief in their ability to effectively instruct students, manage classroom dynamics, and foster a positive learning environment (Wulandari et al., 2023). Understanding teacher self-efficacy is essential for improving educational practices, as it directly impacts a teacher's motivation, instructional strategies, and persistence in challenging situations. The concept of teacher self-efficacy is grounded in social cognitive theory, which posits that human functioning is a result of interactions between personal factors, behaviors, and environmental influences (Bandura, 1997). Self-efficacy, according to Bandura (1997), is a central mechanism in this interplay, influencing how people think, feel, and act. In the context of teaching, self-efficacy shapes how teachers approach goals, tasks, and challenges. High self-efficacy can lead to greater effort, persistence, and resilience, while low self-efficacy can result in avoidance of difficult tasks and reduced instructional effectiveness (Çoban et al., 2020).

Teacher self-efficacy is defined as a teacher's belief in their capacity to bring about desired educational outcomes, even when faced with challenges such as unmotivated students or a lack of resources (Fackler et al., 2021). It is a task-specific form of self-efficacy, where the focus is on the teacher's ability to influence student engagement and learning. This belief system is not only about a teacher's skills but also about their confidence in applying those skills effectively in the classroom setting (Demir, 2020). Teacher self-efficacy encompasses three key dimensions: efficacy in instructional strategies, classroom management, and student engagement (Liu et al., 2020). These dimensions reflect a teacher's confidence in their ability to effectively implement teaching methods, maintain a well-organized and productive classroom environment, and actively involve students in the learning process. Each of these components plays a crucial role in shaping a teacher's overall sense of efficacy and their ability to achieve positive educational outcomes.

Teacher self-efficacy in instructional strategies refers to a teacher's confidence in their ability to design and implement effective teaching methods that promote student learning (Shu, 2022). Teachers with high self-efficacy in instructional strategies believe they can adapt their teaching methods to meet the diverse needs of their students, differentiate instruction, and use various teaching techniques to address different learning styles and levels. They also have confidence in their ability to use assessments to inform their teaching practices, ensuring that their instructional approaches are aligned with students' needs (Ramli & Nurahimah, 2020). Moreover, teachers with strong self-efficacy in this area are more likely to incorporate innovative teaching practices, such as project-based learning or the integration of digital tools, believing that these approaches can enhance student engagement and learning outcomes. Another crucial aspect of teacher self-efficacy is efficacy in classroom management. This component involves a teacher's belief in their ability to maintain a well-organized, respectful, and productive classroom environment (Holzberger & Prestele, 2021). Teachers with high self-efficacy in classroom management are confident that they can manage student behavior effectively, prevent disruptions, and enforce classroom rules in a way that supports learning. They also believe in their capacity to create a positive learning environment where students feel safe, supported, and motivated to participate. Furthermore, these teachers are skilled at handling the complex social dynamics of the classroom, including resolving conflicts and fostering cooperative learning among students (Zee & Koomen, 2016). Effective classroom management is fundamental because it provides the foundation for all other teaching activities, ensuring that students can focus on learning without unnecessary distractions.

The third significant component of teacher self-efficacy is efficacy in student engagement. This refers to a teacher's belief in their ability to actively involve students in the learning process (Hoy & Spero, 2005). Teachers with high self-efficacy in student engagement are confident that they can motivate and inspire all students, regardless of their initial interest in the subject matter. They believe they can make lessons interesting and relevant, thereby increasing students' intrinsic motivation to learn. Additionally, these teachers are skilled at encouraging active student participation in discussions, group work, and other interactive learning activities that

promote deeper understanding (Skaalvik, 2020; Skaalvik & Skaalvik, 2007). They also see themselves as capable of supporting students in overcoming learning challenges and persisting in their efforts to succeed, which is crucial for maintaining student engagement over time. The components of teacher self-efficacy—efficacy in instructional strategies, classroom management, and student engagement—are all interrelated and contribute to a teacher's overall effectiveness. Teachers who possess high self-efficacy in these areas are more likely to implement effective teaching practices, create a positive classroom environment, and engage students in meaningful learning experiences, leading to better educational outcomes for their students.

3. Methodology

This current study employs a quantitative research design to investigate the relationships and characteristics within a population of PVMA teachers across Malaysia. The choice of a survey approach allows for simultaneous data collection using standardized questionnaires, ensuring consistency in measuring variables related to instructional leadership, teacher self-efficacy, and commitment. By collecting empirical, numerical data, the study seeks to generalize findings across the entire population by identifying key factors influencing instructional practices and their impact on teacher commitment and efficacy.

3.1 Respondents

The population of the current study comprises 1135 PVMA teachers across Malaysia. According to Krejcie and Morgan's (1970) sample size table, a minimum sample size of 291 was required. Employing a multi-stage cluster sampling technique based on geographic zones (Southern, Central, Northern, Eastern, and Borneo), data collection yielded responses from 324 respondents. This sample size not only meets the minimum requirement but also exceeds it, ensuring sufficient data for thorough analysis.

3.2 Instrumentation

The study employs three modified questionnaires to assess principals' instructional leadership, teacher commitment, and teacher self-efficacy. First, the principals' instructional leadership questionnaire was adapted from Thien (2020) and comprises three dimensions: defining the school's mission, managing instructional programs, and developing a positive school climate, totaling 50 items. Responses are recorded on a 5-point Likert scale measuring frequency. Second, the teacher self-efficacy questionnaire was adapted from Maulod (2017), comprising three dimensions: teachers' efficacy towards teaching strategies, teachers' efficacy towards classroom management, and teachers' efficacy towards students' engagement, with each dimension containing 8 items, totaling 24 items overall. Responses are recorded on a 5-point Likert scale measuring frequency. The third questionnaire, adapted from Thien et al. (2014) assesses teachers' commitment across four dimensions: commitment to students, commitment to teaching, commitment to school, and commitment to the profession, totaling 13 items. Responses are recorded on a 5-point Likert scale to measure agreement. An expert review was conducted to validate the questionnaires, involving four panels selected based on their academic qualifications in educational leadership and over ten years of experience. They assessed face validity and content validity, confirming that all items are valid. Additionally, a pilot study evaluated the reliability of the questionnaires using Cronbach's alpha. The principals' instructional leadership questionnaire demonstrated high internal consistency with a score of 0.97. The teacher commitment questionnaire showed strong internal consistency with a score of 0.95. However, the teachers' self-efficacy questionnaire achieved a Cronbach's alpha of 0.81.

3.3 Data Analyses

To address the research questions, three analyses were conducted: descriptive analysis to evaluate the level of each variable, Pearson correlation to examine the relationships between the study variables, and multiple regression to assess how instructional leadership and teachers' commitment contribute to teachers' self-efficacy.

3.4 Scope of Study

This study is limited to the following scope. Firstly, the sampling method utilized a multi-stage approach starting with cluster sampling across five zones followed by simple random sampling for unit selection, which restricts the generalizability of findings to the sampled population only. Secondly, the study exclusively employed a quantitative methodology through survey administration to teachers, chosen to address research questions effectively but potentially limiting deeper qualitative insights into the reasons behind quantitative results. Thirdly, the respondents were solely teachers involved in teaching skill stream subjects under the PVMA curriculum, excluding other teacher categories and non-PVMA schools from the generalizability of findings. Lastly, the study focused solely on assessing instructional leadership by principals within PVMA schools and did not include

principals as respondents, which narrows the perspective on leadership practices within different educational contexts.

4. Results

4.1 Relationship Between Principals' Instructional Leadership and Teachers' Commitment

In terms of the relationship between principals' instructional leadership and teachers' commitment in schools implementing PVMA, the findings as shown on Table 1 indicate that the relationship is statistically significant and positive (r = 0.41, p < 0.01). However, the relationship is weak based on Chua (2006). This result supports the hypothesis, showing a significant relationship between principals' instructional leadership practices and teacher commitment. Furthermore, the analysis of the relationship between the dimensions of principals' instructional leadership practices and commitment also shows significant relationships. All dimensions representing instructional leadership practices exhibit a weak relationship with teacher commitment: defining the school's mission (r = 0.38, p < 0.01), managing instructional programs (r = 0.38, p < 0.01), and developing a positive school climate (r = 0.39, p < 0.01).

Table 1 *Correlation between principals' instructional leadership and teachers' commitment*

Principals' instructional leadership dimensions	Teachers' commitment		Magnitude
	r	Sig.	
Defining the school's mission	0.38	0.00	Weak
Managing instructional programs	0.38	0.00	Weak
Developing a positive school climate	0.39	0.00	Weak
Principals' instructional leadership	0.41	0.00	Weak

4.2 Relationship Between Principals' Instructional Leadership and Teachers' Self-Efficacy

With respect to the relationship between principals' instructional leadership and teachers' self-efficacy in schools implementing PVMA, the findings as appeared on Table 2 indicate that the relationship is statistically significant and positive (r = 0.51, p < 0.01). However, the relationship is at a moderate level. This means that the hypothesis is supported, as there is a significant relationship between principals' instructional leadership practices and teachers' self-efficacy. Meanwhile, the analysis of the relationship between the dimensions of principals' instructional leadership practices and self-efficacy also shows significant relationships. However, all dimensions representing instructional leadership practices show a weak relationship with teacher commitment: defining the school's mission (r = 0.44, p < 0.01), managing instructional programs (r = 0.48, p < 0.01), and developing a positive school climate (r = 0.49, p < 0.01).

Table 2 *Correlation between principals' instructional leadership and teachers' self-efficacy*

Principals' instructional leadership dimensions	Teachers' self-efficacy		Magnitude
	r	Sig.	
Defining the school's mission	0.44	0.00	Weak
Managing instructional programs	0.48	0.00	Weak
Developing a positive school climate	0.49	0.00	Weak
Principals' instructional leadership	0.51	0.00	Moderate

4.3 Relationship Between Commitment and Teachers' Self-Efficacy

As for the relationship between teachers' commitment and teachers' self-efficacy in schools implementing PVMA, the findings as illustrated on Table 3 indicate that the relationship between the two variables is statistically significant and positive (r = 0.55, p < 0.01). However, the relationship is at a moderate level. This means that the hypothesis is supported, as there is a significant relationship between teacher commitment and teacher self-efficacy. Meanwhile, the analysis of the relationship between the dimensions of teacher commitment and self-

efficacy also shows significant and positive relationships. However, the strength of these relationships varies. The strength of the relationship between three dimensions of commitment and self-efficacy is weak: commitment to the school ($r = 0.33$, $p < 0.01$), commitment to teaching ($r = 0.37$, $p < 0.01$), and commitment to the profession ($r = 0.22$, $p < 0.01$). One dimension, however, shows a moderate relationship: commitment to students ($r = 0.61$, $p < 0.01$).

Table 3 *Correlation between teachers' commitment and teachers' self-efficacy*

Teachers' commitment dimensions	Teachers' self-efficacy		Magnitude
	r	Sig.	
Commitment to school	0.33	0.00	Weak
Commitment to teaching	0.61	0.00	Weak
Commitment to school	0.37	0.00	Weak
Commitment to profession	0.22	0.00	Very weak
Teachers' commitment	0.55	0.00	Moderate

4.4 Contribution of Instructional Leadership and Teachers' Commitment Contribute to Teachers' Self-Efficacy

The findings indicate that both variables, namely principals' instructional leadership practices and teacher commitment, significantly influence teacher self-efficacy with an F value of $F_{(2,315)} = 104.621$, $p < 0.01$, $R^2 = 0.399$ as shown on Table 4. These results show that both independent variables have a significant impact on the dependent variable, which is teacher self-efficacy. This means that the hypothesis is supported, as there is a significant influence of principals' instructional leadership practices and teacher commitment on self-efficacy in schools implementing PVMA. The effect size of the influence of these variables on teacher self-efficacy is determined based on Cohen's (1988) effect size range. According to this range, the R^2 value in this test, which is 0.399, is greater than 0.26 (indicating a strong influence), showing a strong effect size between instructional leadership and teacher commitment on teacher self-efficacy.

Table 4 *Multiple regression analysis*

Model	Unstandardized B	Standardized Coefficients Beta (β)	t	Sig.	R^2	Contribution
(Constant)	1.041		4.511	.000		
Teachers' commitment	.470	.409	8.540	.000	0.302	30.2%
Principals' instructional leadership	.315	.342	7.140	.000	0.399	9.7%

The results of the stepwise multiple regression analysis also show that both independent variables contribute significantly (39.9%) statistically ($p < 0.01$) to teacher self-efficacy in schools implementing PVMA. The main and highest predictor of teacher self-efficacy in these schools is teacher commitment ($β = 0.47$, $t = 8.540$, $p = 0.000$). The significant t-test result at $p < 0.01$ and the R-squared value ($R^2 = 0.302$) indicate that teacher commitment contributes 30.2% to teacher self-efficacy. This condition shows that when the teacher commitment score increases by one unit, the level of teacher self-efficacy increases by 0.47 units. These findings clearly show that teacher commitment is the main predictor, contributing 30.2% to teacher self-efficacy in schools implementing PVMA. Meanwhile, the second predictor, which also contributes 9.7% to teacher self-efficacy, is principals' instructional leadership practices ($β = 0.315$, $t = 7.140$, $p = 0.000$). The t-test result is also significant at $p < 0.01$, with an R-squared value ($R^2 = 0.399$). This means that when the score of principals' instructional leadership practices increases by one unit, teacher self-efficacy also increases by 0.315 units.

5. Discussion

The relationship between instructional leadership practices of principals and teacher commitment in PVMA schools is significant even characterized as weak. This research underscores that despite the modest correlation, principals' instructional leadership effectively enhances teacher commitment. This finding aligns with broader

international studies across diverse educational settings. Studies conducted in other parts of the globe like in Turkey, Pakistan, and Iran illustrate that when school administrators exhibit strong instructional leadership, they can elevate teacher commitment to school missions, teaching responsibilities, and professional roles, consequently improving student academic achievements (Cansoy & Parlar, 2018; Hosseingholizadeh et al., 2023; Khan et al., 2020). These leadership practices involve defining school missions, fostering collaborative decision-making, and empowering teachers, thereby cultivating a sense of ownership and dedication among educators. Furthermore, instructional leadership not only influences teacher commitment but also positively impacts teacher self-efficacy and organizational commitment (Zhan et al., 2023). Through methods such as systematic supervision, ongoing evaluation, and professional development initiatives, principals support teachers in enhancing their teaching skills and confidence. This approach not only strengthens teacher morale but also contributes to a more conducive learning environment. Studies in Iran and Indonesia emphasize that effective instructional leadership predicts higher levels of teacher commitment and correlates with improved academic outcomes for students (Hosseingholizadeh et al., 2023; Sukarmin & Sin, 2021). Overall, these findings underscore the critical role of instructional leadership in nurturing a committed teaching workforce essential for achieving educational excellence in PVMA schools.

Meanwhile, the relationship between principal's instructional leadership practices and teacher self-efficacy in PVMA schools shows a significant, moderately strong, and positive correlation. This indicates that when principals emphasize instructional leadership, they effectively boost teachers' confidence in their abilities within PVMA school contexts. Research findings from other studies consistently support this correlation, highlighting how focused leadership in enhancing teaching practices and providing support directly impacts teachers' belief in their capability to engage students effectively and manage instructional challenges (Cansoy & Parlar, 2018; Sumiati & Niemted, 2020; Xie et al., 2022). These studies underscore the pivotal role of instructional leadership in creating an environment where teachers feel empowered and confident in their professional capacities. Moreover, the dimensions of instructional leadership—such as defining school missions, fostering positive school climates, and managing instructional programs—each contribute positively to teacher self-efficacy in PVMA schools. Despite some variations in findings across studies, particularly regarding the specific impact of different leadership dimensions, the consensus supports the notion that principled instructional leadership enhances teacher confidence and commitment to their roles (Shengnan & Hallinger, 2021). This alignment between effective instructional leadership and heightened teacher self-efficacy underscores the importance of leadership practices in shaping a conducive teaching and learning environment, ultimately benefiting both teachers and students in PVMA schools.

Whereas, the relationship between teacher commitment and teacher self-efficacy in PVMA schools shows a significant, moderately positive correlation, indicating that as teachers' commitment to their roles and institutions increases, so does their belief in their ability to perform effectively. This aligns with findings from previous studies in Turkey, Iran, Malaysia, China, Kenya, Indonesia, and Pakistan, all pointing to similar conclusions (Huang et al., 2020; Mokhtar et al., 2023; Shafiq, 2023; Waweru et al., 2021). These studies collectively affirm that higher levels of teacher self-efficacy are associated with greater organizational commitment and affective ties to their schools or educational institutions. Specifically, teachers who feel efficacious in their instructional roles, relationships with students, and decision-making processes within schools tend to exhibit stronger commitments across various dimensions—towards the school's mission, student development, teaching quality, and professional advancement. This interconnectedness underscores the importance of fostering both self-efficacy and commitment among educators to enhance overall school effectiveness and teacher satisfaction.

Moreover, the dimensions of commitment school, student, teaching, and profession each contribute uniquely to teachers' sense of purpose and engagement (Zhang, 2022). Commitment to the school reflects teachers' dedication to supporting institutional values and actively participating in school initiatives, fostering a positive work environment. Commitment to students involves personalized support and holistic engagement in student development, beyond classroom instruction, thereby enhancing educational outcomes and teacher satisfaction (Dami et al., 2022). Commitment to teaching drives continuous improvement in pedagogical practices and professional growth, empowering teachers to create impactful learning environments. Lastly, commitment to the profession promotes collaborative learning among educators and advocacy for educational advancement, reinforcing the significance of ongoing professional development in sustaining effective teaching practices (Singh & Gupta, 2015).

The study also explored the significant influence of instructional leadership practices by principals and teacher commitment on teacher self-efficacy within PVMA schools. It was found that both factors play pivotal roles in shaping teachers' beliefs in their abilities, highlighting their interdependent contributions to fostering a positive teaching environment. This aligns with previous research indicating that integrated leadership styles, emphasizing collaboration and continuous improvement, are particularly effective in enhancing teacher self-efficacy (Bellibaş et al., 2022). Moreover, the study resonates with findings from other contexts, such as Indonesia and Taiwan, where instructional leadership was shown to directly impact teachers' professional competencies and collaborative engagement, underscoring the universal relevance of effective leadership in educational settings

(Herawati et al., 2022; Hsieh et al., 2023). Furthermore, the study underscores the multifaceted nature of teacher commitment, encompassing dedication to students, teaching practices, school missions, and professional growth. It demonstrates how these facets collectively influence teachers' efficacy in various aspects of their roles, from classroom management to student engagement (Liu & Hallinger, 2018). The findings suggest that teachers' commitment to holistic student development and continuous professional learning significantly contributes to their self-efficacy by fostering a supportive learning environment and enhancing their confidence in implementing effective teaching strategies. Overall, the study provides insights into the critical roles of instructional leadership and teacher commitment in shaping teacher efficacy, emphasizing their importance in promoting educational effectiveness and fostering a positive school culture.

6. Conclusion

This study contributes significant insights into the relationship between instructional leadership practices, teacher commitment, and teacher self-efficacy in educational settings. It emphasizes the critical role of effective instructional leadership in enhancing teachers' belief in their abilities and commitment to their professional roles. The findings underscore the importance of principals fostering a supportive school climate and providing adequate support for teachers to improve their self-efficacy. Moreover, the study highlights practical implications for educational stakeholders, suggesting that policies should prioritize enhancing instructional leadership and supporting teachers' professional development to elevate overall educational quality. These insights serve as a foundational basis for further research and policy development aimed at strengthening educational outcomes through effective leadership and teacher empowerment.

The study explores the interplay of principal leadership, teacher commitment, and teacher self-efficacy in schools implementing the PVMA curriculum through a quantitative survey approach involving PVMA teaching staff. The findings of the study offer solution to the problems identified earlier, especially in ensuring students' achievement and the success of PVMA curriculum. Principals need to execute instructional leadership so that teachers' commitment and self-efficacy can be enhanced. In return, it will contribute to improve student outcomes and the overall success of the PVMA curriculum. By fostering a strong sense of commitment and self-efficacy among teachers, principals can create an environment where educators are motivated and equipped to deliver the curriculum effectively, address students' learning needs, and ultimately drive academic success. This leadership approach not only supports the implementation of the PVMA curriculum but also ensures that students are engaged, supported, and positioned to achieve their full potential.

This study suggests avenues for future research to delve deeper into contextual factors like teacher collaboration, innovative behaviour, and job satisfaction influencing instructional leadership, teacher commitment, and teacher self-efficacy relationships. Additionally, it proposes examining regional and course-specific variations within PVMA implementations, conducting longitudinal studies to track changes over time, and undertaking comparative analyses between PVMA and non-PVMA schools to assess program impacts comprehensively. Qualitative investigations into teacher perceptions and experiences are recommended to provide nuanced insights, alongside program evaluations using established models to guide educational enhancements. Overall, these directions aim to advance understanding and refine educational practices within the national framework.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of the paper.

Author Contribution

The author confirms sole responsibility for the following: study conception and design Ais Md Sulbidin and Halizah Awang; data collection: Ais Md Sulbidin; analysis and interpretation of results: Ais Md Sulbidin and Halizah Awang; manuscript preparation: Ais Md Sulbidin. All authors reviewed the results and approved the final version of the manuscript.

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