An Empirical Study on the Levels of Principals' Distributed Leadership, Virtual Professional Learning Communities, Teacher Motivation, and Teacher Leadership in Secondary Schools in Sabah, Malaysia

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ABSTRACT

This study was conducted with the aim of measuring the levels of principals' distributed leadership, virtual professional learning communities, teacher motivation, and teacher leadership in secondary schools in Sabah. Principals' distributed leadership, virtual professional learning communities, and teacher leadership represent relatively new aspects within the Malaysian educational landscape, and there remains a lack of large scale studies measuring these constructs. Teacher motivation, on the other hand, is a key driving force that compels teachers to effectively perform their roles as educators. The research design employed was non-experimental, utilizing a quantitative approach and survey method through the administration of a questionnaire. A total of 375 teachers from daily secondary schools participated as the study sample, selected through a combination of stratified, cluster, and simple random sampling techniques. Data collected from respondents were analyzed descriptively using the Statistical Package for the Social Sciences (SPSS). The descriptive analysis revealed that the levels of principals' distributed leadership (M=4.072, SD=0.591) and teacher motivation (M=4.230, SD=0.668) were high, whereas the levels of virtual professional learning communities (M=3.611, SD=0.852) and teacher leadership (M=3.524, SD= 0.805) were moderate. The findings of this study provide valuable insights particularly for the Ministry of Education Malaysia, Sabah State Education Departments, school administrators, and teachers in driving forward the national education system.

Keywords— Principal Distributed Leadership, Virtual Professional Learning Communities, Teacher Motivation, Teacher Leadership, Secondary Schools

INTRODUCTION

In 21st century education, leadership in schools increasingly emphasizes collaboration, shared responsibility, and active participation of all stakeholders. Distributed leadership by principals plays a key role in empowering teachers, fostering teamwork, and enhancing accountability. At the same time, virtual professional learning communities (VPLCs) provide new platforms for teachers to share best practices, exchange ideas, and develop professionally beyond physical boundaries. Teacher motivation serves as a crucial link between distributed leadership and teacher leadership. When principals recognize contributions, provide support, and create a collaborative culture, teachers are more motivated to take on leadership roles both in classrooms and within professional learning communities. Thus, exploring the interrelationship between distributed leadership, virtual professional learning communities, motivation, and teacher leadership is essential to strengthen school effectiveness.

RESEARCH BACKGROUND

The dynamics of school leadership have evolved significantly in the 21st century, shifting from traditional hierarchical models toward more collaborative and distributed approaches. Distributed leadership emphasizes the sharing of authority and responsibility among school stakeholders to enhance organizational effectiveness and collective teacher capacity. Principals, as instructional leaders, are expected not only to manage but also to

create conditions in which teachers are empowered to lead. A growing body of research highlights that distributed leadership can improve teacher trust, strengthen professional learning, and enhance motivation (Bektaş, Kılınç, & Gümüş, 2020). Despite these findings, the role of distributed leadership in emerging digital contexts, particularly virtual professional learning communities (VPLCs), remains underexplored.

VPLCs represent an important innovation in teacher professional development, providing teachers with platforms for collaboration, knowledge sharing, and reflective practice that transcend physical boundaries. These online spaces allow teachers to exercise agency and assume leadership roles by contributing ideas, mentoring peers, and co-constructing knowledge (Shal, Ghamrawi, Abu-Tenneh, Al-Shaboul, & Sellami, 2024). However, while the literature acknowledges the growing influence of VPLCs, little is known about how principals' distributed leadership practices shape teacher engagement in these digital spaces. This gap is particularly critical given that effective leadership in VPLCs may require principals to adapt their strategies in ways that differ from traditional school-based contexts.

Teacher motivation is another critical dimension linking distributed leadership and teacher leadership development. Studies show that when principals adopt distributed leadership practices, they indirectly influence organizational learning through the motivational processes of teachers (Berkovich & Hassan, 2023). Motivation, both intrinsic and extrinsic, drives teachers to actively participate in professional learning and to take on leadership responsibilities. Yet, while motivation has been identified as a mediating factor in distributed leadership and school improvement, the intersection of motivation with teacher leadership in VPLCs remains poorly understood. This lack of clarity raises important questions about the conditions under which teachers feel motivated to extend their leadership into virtual platforms.

Furthermore, the literature suggests that distributed leadership not only enhances teacher motivation but also builds trust and professional collaboration among educators (Bektaş et al., 2020). Trust is central to the willingness of teachers to engage in leadership activities, especially within the less formal and more autonomous settings of virtual communities. Nonetheless, research has yet to address how trust, motivation, and distributed leadership interact within the context of VPLCs. Without empirical studies in this area, our understanding of how principals' leadership approaches influence teacher-led collaboration and professional growth in virtual spaces remains fragmented.
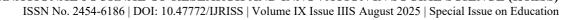
This research gap is particularly relevant in Malaysia, where digital transformation in education has accelerated following the COVID-19 pandemic. Conceptual studies have begun to suggest that distributed leadership, VPLCs, and motivation may collectively shape teacher leadership in Malaysian schools, but these insights remain largely theoretical and lack empirical validation (Antin & Dzulkifli, 2024). As Malaysian schools increasingly integrate digital professional learning practices, it is critical to investigate how leadership and motivational factors operate in these contexts. Such research will provide not only theoretical contributions but also practical implications for school leaders navigating the challenges of digital professional learning.

In sum, although previous studies have established clear links between distributed leadership, teacher motivation, and professional learning, their interaction within virtual professional learning communities remains insufficiently understood. Specifically, there is limited knowledge on how principals' distributed leadership fosters teacher motivation in digital contexts, and how these factors collectively enhance teacher leadership. Addressing this gap will help clarify the complex interplay of leadership, motivation, and digital professional learning, offering new insights into how schools can better support teacher leadership in the 21st century.

Research objectives

This study aims to:

1. Examine the level of principals' distributed leadership in secondary schools in Sabah.

2. Determine the level of virtual professional learning communities practiced among teachers in secondary schools in Sabah.

3. Identify the level of teacher motivation in carrying out their professional responsibilities.

4. Assess the level of teacher leadership in secondary schools in Sabah.

Research questions

This study aims to answer the following questions:

1. What is the level of principals' distributed leadership in secondary schools in Sabah?

2. What is the level of virtual professional learning communities practiced among teachers in secondary schools in Sabah?

3. What is the level of teacher motivation in carrying out their professional responsibilities?

4. What is the level of teacher leadership in secondary schools in Sabah?

LITERATURE REVIEW

The concept of distributed leadership has become increasingly prominent in educational research, emphasizing leadership as a collective practice rather than the responsibility of a single individual. Distributed leadership is understood as the shared enactment of leadership roles across various actors in a school, particularly principals and teachers, to improve school capacity and student learning outcomes. Research indicates that principals' distributed leadership fosters stronger professional collaboration, increases teachers' trust in leadership, and enhances teacher motivation (Bektaş, Kılınç, & Gümüş, 2020). These findings position distributed leadership as a key driver for school improvement, particularly in contexts that require teacher agency and collaboration.

Teacher motivation plays a crucial mediating role between distributed leadership and organizational learning. A study by Berkovich and Hassan (2023) demonstrated that both intrinsic and extrinsic motivation significantly shape how teachers respond to principals' distributed leadership. Motivated teachers are more likely to engage in professional learning, assume leadership roles, and contribute to school improvement initiatives. Similarly, Harris (2013) argued that distributed leadership provides teachers with ownership over change, leading to greater professional engagement and capacity building. This highlights the interdependence of leadership distribution and teacher motivation in advancing school development.

The emergence of virtual professional learning communities (VPLCs) has provided teachers with innovative platforms for professional growth. VPLCs facilitate collaboration, reflective practice, and peer to peer learning in online environments, thus overcoming geographical and time constraints. Shal et al. (2024) found that VPLCs foster teacher leadership by enabling teachers to exercise agency, share expertise, and co-construct knowledge. Likewise, Darling-Hammond et al. (2017) emphasized that sustained professional learning communities, whether face to face or virtual are strongly linked to improvements in teacher practice and student achievement.

Despite the promising potential of VPLCs, the role of principals' distributed leadership in shaping teachers' participation in these digital spaces remains underexplored. While VPLCs provide a fertile ground for teacher leadership, their effectiveness may depend on how school leaders encourage, motivate, and support teachers' engagement. Antin and Dzulkifli (2024) proposed that in the Malaysian context, principals' distributed leadership, coupled with teacher motivation, can significantly influence the effectiveness of VPLCs in fostering teacher leadership (Antin & Dzulkifli, 2024). Similarly, Tian, Risku, and Collin (2016) observed that distributed leadership in collaborative contexts creates conditions that enhance teacher agency, a factor that could be highly relevant in virtual professional spaces.

Bektaş et al. (2020) emphasized that distributed leadership enhances teacher professional learning primarily through trust in principals and intrinsic motivation. Similarly, VPLCs thrive when teachers trust their peers, share knowledge openly, and feel motivated to engage in collective inquiry. Woods and Gronn (2009) further noted that distributed leadership requires shared trust and a culture of interdependence to function effectively. In this

way, trust serves as a critical bridge connecting distributed leadership practices to teacher collaboration in both physical and virtual environments.

In summary, the literature demonstrates strong evidence that distributed leadership positively influences teacher motivation, professional learning, and leadership capacity. VPLCs, as emerging digital platforms, offer new opportunities for teacher leadership to flourish. However, the intersection between distributed leadership, teacher motivation, and VPLCs remains underexplored. Current scholarship suggests potential linkages but lacks empirical studies that examine these dynamics in practice, particularly in non-Western contexts such as Malaysia. Addressing this gap could contribute valuable insights into how schools can leverage distributed leadership and VPLCs to strengthen teacher leadership in the digital era.

METHODOLOGY

Research Approach

This study employed a quantitative research approach to measure the level of principals' distributed leadership, virtual professional learning communities, teacher motivation, and teacher leadership. A quantitative approach was deemed appropriate as it allows for the collection of numerical data.

Research Method

The survey method was utilized to gather data from respondents. This method was selected due to its efficiency in collecting standardized information from a large sample within a relatively short period of time. Surveys are widely recognized in educational research for their ability to measure perceptions, attitudes, and practices in a structured and reliable manner.

Research Technique

Data collection was conducted using a questionnaire consisting of four constructs: distributed leadership, virtual professional learning communities, teacher motivation, and teacher leadership. Prior to the main study, the questionnaire was subjected to expert validation and pilot testing to ensure its clarity, relevance, and appropriateness.

Location and Population

The study was carried out in the state of Sabah, Malaysia, focusing on teachers in daily secondary schools. The target population included all secondary school teachers in the state, representing diverse geographical and demographic backgrounds.

Sample and Sampling Technique

A total of 375 teachers were selected as participants in the study. Sampling was conducted using a combined sampling strategy comprising stratified sampling, cluster sampling, and simple random sampling. Stratified sampling ensured representation across different school categories and zones, cluster sampling facilitated the selection of schools within specific districts, and simple random sampling allowed for unbiased selection of teachers within the chosen schools.

Validity and Reliability

To ensure the quality of the research instrument, both validity and reliability were rigorously tested. Construct validity was established through expert reviews and alignment with established literature. Reliability testing using Cronbach's Alpha demonstrated high internal consistency, with all four constructs achieving alpha values above 0.90, indicating excellent reliability of the instrument.

FINDINGS

Table 1 presents the results of the descriptive analysis for the four research constructs. The level of principals'

distributed leadership (M=4.072, SD=0.591) and teacher motivation (M=4.230, SD=0.668) were found to be high. Meanwhile, the levels of virtual professional learning communities (M=3.611, SD=0.852) and teacher leadership (M=3.524, SD=0.805) were at a moderate level.

Table 1: The Levels of Principals' Distributed Leadership, Virtual Professional Learning Communities, Teacher Motivation, and Teacher Leadership in Secondary Schools in Sabah

Construct	N	Mean	Standard Deviation
Principals' Distributed Leadership	375	4.072	0.591
Virtual Professional Learning Communities	375	3.611	0.852
Teacher Motivation	375	4.230	0.668
Teacher Leadership	375	3.524	0.805

DISCUSSION

The findings of this study revealed that the level of principals' distributed leadership was. This suggests that principals in Sabah have been effective in engaging teachers in collaborative practices, decision-making processes, and school-wide initiatives. Distributed leadership has been widely recognized for its capacity to build collective responsibility, improve school culture, and empower teachers as co-leaders (Bektaş, Kılınç, & Gümüş, 2020). Previous research also indicates that distributed leadership is strongly associated with teacher professional learning and organizational outcomes (Nguyen, Ng, & Yuen, 2021).

Teacher motivation was similarly found to be high, reflecting both intrinsic and extrinsic motivational factors driving teacher performance. Teachers who feel supported by their leaders are more likely to demonstrate strong professional commitment, innovate in their teaching practices, and sustain higher levels of engagement (Hassan, 2020). Moreover, teacher motivation has been identified as a crucial mediator between leadership practices and organizational learning capacity (Berkovich & Hassan, 2023). Studies also highlight that motivated teachers play a central role in sustaining professional learning communities by sharing expertise and mentoring peers (Chen, Lee, & Huang, 2022).

In contrast, participation in virtual professional learning communities (VPLCs) was found to be moderate. This suggests that while teachers are aware of the potential benefits of virtual collaboration, actual engagement remains limited. Issues such as inconsistent technological infrastructure, limited digital skills, and competing professional responsibilities may restrict participation. Research indicates that while VPLCs promote collaboration and knowledge sharing across contexts, their success largely depends on school support, training, and digital readiness (Shal et al., 2024). Similarly, studies emphasize that teachers require structured facilitation and institutional encouragement to maximize the benefits of VPLCs (Huang, Chou, & Yeh, 2022).

The results also showed that teacher leadership was moderate. This reflects an existing but not yet optimal involvement of teachers in leadership roles. Teacher leadership is influenced by factors such as principal support, professional culture, and opportunities for distributed leadership (Antin & Dzulkifli, 2024). Research further highlights that teachers often face challenges in asserting leadership roles due to hierarchical school structures and lack of formal recognition (Nguyen et al., 2021). Nonetheless, when teacher leadership is supported, it enhances school innovation, collective efficacy, and professional growth (Tian, Risku, & Collin, 2016).

Taken together, these findings suggest a dual dynamic, while principals' distributed leadership and teacher motivation are strong, teacher leadership and VPLCs participation remain underdeveloped. This reflects the need for schools to capitalize on teachers' high motivation and principals' supportive leadership by strengthening structures that promote teacher agency and professional collaboration in both physical and virtual spaces. Schools could invest in professional development for digital literacy, establish incentives for teacher leadership, and cultivate a culture that values teacher contributions beyond classroom instruction (Huang et al., 2022; Shal et al., 2024; Tian et al., 2016).

Ultimately, the integration of distributed leadership, teacher motivation, teacher leadership, and VPLCs is critical for achieving sustainable educational reform. By aligning these factors, schools can build collaborative professional cultures that support continuous improvement and innovation in teaching and learning.

CONCLUSION

This study contributes to the growing body of literature on distributed leadership, teacher motivation, professional learning communities, and teacher leadership by providing empirical evidence from secondary schools in Sabah. The findings indicate that principals' distributed leadership and teacher motivation are practiced at high levels, underscoring the significance of collaborative leadership structures and intrinsic as well as extrinsic motivational factors in sustaining teacher engagement. However, the moderate levels of virtual professional learning communities and teacher leadership highlight persistent challenges related to digital adoption, structural constraints, and cultural barriers within school organizations. These results affirm previous research suggesting that distributed leadership is most effective when it extends beyond formal structures to empower teachers as leaders and foster professional collaboration in both traditional and virtual contexts.

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