THE EFFECTS OF TEACHER EFFICACY, INSTRUCTIONAL LEADERSHIP AND PROFESSIONAL LEARNING COMMUNITIES ON STUDENT ACHIEVEMENT IN LITERACY AND NUMERACY IN PRIMARY SCHOOLS WITHIN SIBU DIVISION

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ABSTRACT

The purpose of this study was to investigate the effects of teacher efficacy (TE), instructional leadership (IL) and professional learning communities (PLC) on student achievement in literacy and numeracy in primary schools within Sibu division. The main objective of this study was to determine if TE, IL and PLC could predict student achievement in literacy and numeracy. This study utilised the Teacher Self-Efficacy model (Tschannen-Moran, Woolfolk Hoy & Hoy, 1998), the Instructional Leadership model (Hallinger & Murphy, 1985) and Professional Learning Communities model (Hord, 1997). Using the quantitative approach, the data was collected using questionnaires and was analysed with the Statistical Packages for Social Sciences. The sample was selected by using stratified random sampling technique involving 694 teachers who taught 105 primary schools. Using descriptive statistics, the study observed levels of practice for TE, IL and PLCs. The differences between gender, teaching experience and academic qualification were analysed using the t-test and one-way analysis of variance. The study reported no significant differences in respondent perceptions based on gender and academic qualification for TE, IL and PLC, except for teaching experience vis-à-vis teacher efficacy. Here, the post hoc Tukey test revealed that efficaciousness grows with experience with $F(3, 689) = 14.99$, $p = 0.00$. Binary logistic regression was applied to predict the independent variables' influence on student achievement. The findings revealed that a dimension of instructional leadership (supervising and evaluating instruction) emerged as the best predictor of student achievement for English literacy, with the model explaining between 17.8% (Cox & R squared) and 23.9% (Nagelkerke R squared) of the variance in IL. The result indicated that the students were more than 17 times more likely to achieve 100% literacy rate for English language literacy when the headmaster supervised and evaluated instruction, controlling for all the other factors. In conclusion, supervising and evaluating instruction had a positive influence on students' achievement for English language literacy. This study highly recommends active supervision and evaluation of instruction as a possible course of action for headmasters who desire an improved outcome with regard to English language literacy.

PENGARUH EFIKASI GURU, KEPIMPINAN INSTRUKSIONAL DAN KOMUNITI PEMBELAJARAN PROFESIONAL KE ATAS PENCAPAIAN MURID DALAM LITERASI DAN NUMERASISEKOLAH RENDAH DI BAHAGIAN SIBU

ABSTRAK

Kajian ini adalah bertujuan menyiasat pengaruh efikasi guru (EG), kepimpinan instruksional (KI) dan komuniti pembelajaran professional (KPP) ke atas pencapaian murid dalam literasi dan numerasi di sekolah-sekolah rendah di Bahagian Sibu. Objektif utama kajian ini adalah untuk menyelidik sama ada EG, KI dan KPP boleh meramal pencapaian murid dalam literasi dan numerasi. Kajian ini menggunakan model efikasi guru Tschannen-Moran, Woolfolk Hoy dan Hoy, Model Kepimpinan Instruksional Hallinger dan Murphy serta Model Komuniti Pembelajaran Profesional Hord. Kajian ini menggunakan pendekatan kuantitatif dengan reka bentuk tinjauan. Kaedah pensampelan yang digunakan adalah pensampelan rawak berstrata yang melibatkan 105 sekolah dan 694 guru. Data dianalisis menggunakan ujian-t, ujian analisis varian satu hala dan regresi logistik. Dapatan kajian menunjukkan tiada perbezaan yang signifikan antara EG, KI dan KPP berdasarkan jantina dan kelayakan akademik. Namun, terdapat perbezaan efikasi kendiri guru dari segi pengalaman mengajar Ujian *post-hoc* Tukey menunjukkan bahawa efikasi kendiri guru berbeza dengan berdasarkan pengalaman mengajar dengan nilai F (3, 689) =14.99, p = 0.00. Dapatan regresi logistik menunjukkan bahawa satu dimensi kepemimpinan instruksional, iaitu menyelia dan menilai pengajaran adalah peramal terbaik pencapaian murid untuk literasi Bahasa Inggeris (LBI) dengan model yang menjelaskan antara 17.8% (Cox & R squared) dan 23.9% (Nagelkerke R squared) daripada varians dalam KI. Ini menunjukkan bahawa kemungkinan murid untuk mencapai 100% kadar literasi meningkat lebih daripada 17 kali apabila guru besar menjalankan penyeliaan dan penilaian pengajaran. Kesimpulannya, penyeliaan dan penilaian pengajaran oleh guru besar memberikan pengaruh positif kepada pencapaian murid untuk LBI. Implikasi, kajian ini mencadangkan penyeliaan dan penilaian pengajaran yang aktif sebagai suatu langkah yang boleh diambil oleh guru besar yang bagi mengurangkan masalah literasi dalam Bahasa Inggeris.

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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Literacy and numeracy provide foundational skills that are vital to a student's future success (Baroody & Diamond, 2012). The mastery of literacy and numeracy skills must be done in a formal educational setting, hence making schools an essential factor as purveyors of conducive, supportive environments for learning (White Paul & Cranitch Maya, 2010).

The issue of students' failure to master literacy and numeracy is a global one (Cumming-Potvin, Renshaw, Van Kraayenoord & Christa, 2003; Guzel & Cigdem; Berberoglu, 2005; Dennis, Lindsay; Lynch, Sharon & Stockall, 2012). For instance, 16% of Australian children are not writing and reading at the appropriate level, while 45% of school-going children in Saudi Arabia are illiterate (Westwood, 2001; Rice, Care, Griffin & Patrick, 2012). Meanwhile, 8% to 12% of preschool children and 12% of Year One students have difficulties in mastering listening and reading skills in the

United States of America and Canada (Jamieson, 2007). Additionally, 40 million children in India have not mastered basic literacy skills (Kothari, Brij, Bandyopadhyay & Tathagata, 2010).

In Malaysia, the issue of students' failure to master basic literacy and numeracy have existed since the early 1960s (National Dropout Study, 1972). In 2008, findings from the Ministry of Education (MoE) revealed 54,000 Year 1 students had failed to master literacy (Government Transformation Program, 2010). The literacy and numeracy screening (LINUS) program was introduced in Malaysia in 2010 to ascertain whether students have strong foundations for learning, productivity and active classroom participation. Teachers, school heads and professional learning communities (PLCs) are crucial elements that support a student's learning in the initial primary schooling years (Mogren, Gericke & Scherp, 2018).

Malaysia's goal in educational and economic policy is predicated upon the improvement of student educational outcome. This could translate into an increased likelihood of future employment and participation in the community. Many studies have pointed to student achievement as one of the strongest predictors of future income (Ge, Isaac & Miller, 2019; Hanushek 2011; Hanushek & Woessman, 2009).

Evidence suggests that the bulk of the Malaysian workforce comprise of low-skilled labour. As of 2018, 55.6% of Malaysians in the workforce have only a secondary level education. 13.1% of these have a primary level education while 2.7% have never undergone formal education. This means that 71.4% or almost three-quarters of the Malaysian workforce is low-skilled (Department of Statistics Malaysia,

2019).

Teachers and the education system have a critical role to play in producing highly skilled, creative and innovative workforce towards the achievement of an inclusive and sustainable, high-income economy by 2020. At present, the talent base of the Malaysian workforce is lagging behind those of high-income nations. This is manifested in a shortage of skilled workers and an over-dependence on unskilled and cheap migrant worker. (National Economic Advisory Council, 2018).

Malaysia's quality of education is below the global average in terms of students' achievement. This implies the risk of the country falling behind other competing countries has increased on the education front, with potential economic ramifications. This is evident from Malaysian students' performance in OECD's Program for International Student Assessment (OECD, 2018).

In the assessment of knowledge recall, the application of knowledge in solving problems and the ability to reason in working through problems, Malaysian students are found to be wanting in terms of performance and lagging behind the performance of neighbouring countries within the greater Asian region.

On a broader scale, Malaysia places poorly in the United Nations Education Index Report - 98 out of 181 countries assessed. In the 2015 Organization for Economic Cooperation and Development (OECD) rankings, Malaysia places 52 out of 160 countries. As outlined in the Malaysian Education Blueprint (MEB), Malaysia ranked 52nd out of 65 countries in OECD's Program for International Student Assessment

(PISA) in 2012. This is attributed to a marked decline in reading ability and science. Compared to the average OECD score for the reading of 496, Malaysian students scored 414 in 2009, but this plunged to an average of 398 in 2012 (MEB, 2013).

Malaysia is ranked in the bottom third among the participating countries for reading, mathematics and science, scoring well below the OECD average on all three fronts. Performance-wise, Malaysia is 100 points below its regional counterparts such as China, Hong Kong, Japan, Korea and Singapore on all the three dimensions of cognitive skills assessed. Overall, 44% of Malaysian students do not meet the minimum proficiency levels in reading, while 60% and 43% of students do not meet the baseline proficiency benchmarks in science and mathematics (Ministry of Education, 2012).

Compared to other Malaysian states, Sarawak consistently places in the bottom 25th percentile of the national rankings in the annual public examinations (Examinations Board, 2015). Sarawak has consistently ranked low in the nation for Ministry of Education (MoE) programmes like Literacy and Numeracy Screening (LINUS2.0) and public examinations the likes of *Ujian Peperiksaan Sekolah Rendah* (UPSR) and *Sijil Pelajaran Menengah* (SPM).

Some of the lowest-ranked districts for literacy and numeracy screening results can be found in Sarawak. This includes Selangau's achievement for Year One English Language Literacy (139 out of 141). Compared to other Malaysian states, this is indicative of the failure of many Sarawakian schools in achieving the key performance indicator (KPI) targets set by the Ministry of Education (MoE) and the Education

Performance and Delivery Unit (PADU). Sarawak is bottom of the national table (16 out of 16 states) in terms of achievement for Malay literacy (LBM) – with 87.10% of pupils exhibiting mastery of all 12 constructs for reading and writing.

The national average is 91.99% for Year Two for 2015's second screening. In the same year, Sarawak is placed third from bottom (14 out of 16) of the national table for English literacy (LBI), with only 76.15% - below the national average of 83.49%. For numeracy (NUM), Sarawak is again ranked bottom of the table – with a score of 90.51% compared to the 95.27% of the national average (Public School Management Division, 2016).

Sarawak has been performing below the national average for LBM. This is data for the second screening in Year Three – the culmination of screenings that started from Year One. Compared to other states, Sarawak was ranked 14 out of 16 states – second from bottom - at the end of 2015 for all three areas (PADU, 2015). Data on Year Two pupils by the end of 2015 shows that 13.56% of school going children have yet to master the initial concepts of literacy and numeracy. This is in contrast to Sabah (10.91%) and Putrajaya (0.07%) (PADU, 2015).

Sarawak is a state that has a huge number of students in rural schools. Given the achievement gaps between urban and rural schools, students in Sarawak perform more poorly than states that have a lower proportion of students in rural schools. Within the context of the UPSR examinations, the gap between the scores of urban and rural schools is almost 4 per cent. At the SPM level, the gap is 8 percentage points in favour of urban schools (Malaysia Education Blueprint, 2013). Studies have shown that the socio-economic background of the students plays a significant role in widening the

urban-rural disparity. The fact that rural income levels are below those of urban areas may be the driving wedge contributing towards the disparity. Students hailing from middle and high-income families are more likely to perform better than those from poor families (OECD, 2013).

The links between teacher efficacy, instructional leadership and PLCs abound in literature. Troen and Boles (1994) suggested that headmasters rethink their roles as instructional leaders and encourage the development of a community of leaders. This focus on community is in line with the PLC variable in this study. Childs-Bowen, Moller and Scrivner (2000) agree with the suggestion, as seen by their contextualisation of the leadership concept within PLCs. Here, the connection between leadership and PLCs is aimed at empowering stakeholders towards school improvement, working towards desired student outcomes, focusing on results and inspiring excellence in teaching practices.

The influences of collaborative school culture and professional orthodoxy have given way to conditions that allow teachers to emerge from the traditionally egalitarian view of teaching (York-Barr & Duke, 2004). The importance of teacher efficacy can be found in an opening line from the 2013 report on the Malaysian education system by the Organization for Economic Cooperation and Development (OECD) reads thus: 'The quality of an education system is to a large extent dependent on the quality of its teachers' (OECD, 2013, pg. 5). It goes on to highlight that weaknesses in teacher competencies present a serious threat to the overall quality of education in Malaysia. Barber and Mourshed (2007) support the idea that a school system, no matter how good – can only be driven by excellent teachers. This is where teacher efficacy plays a role

(OECD, 2018). In addition, the present lifetime employment and tenure system have resulted in apathetic teachers who are not adequately encouraged to improve their teaching abilities (OECD, 2018).

Instructional leadership plays its part via active, consistent and formalized appraisal practices from their school heads. Findings by the OECD in 2014 as part of their TALIS 2013 Results: An International Perspective on Teaching and Learning report indicate that 95.2% teachers reported improved teaching practice as a direct result of the feedback received from school heads. In the same study, 99.1% of Malaysian principals reported some form of formalized appraisal, while in the schools where principals report formal practices, 100% of the teachers' classrooms have been observed by their superiors.

These scores are above the average of most countries participating in OECD's Teaching and Learning International Survey (TALIS). These statistics highlight the importance of investigating the three variables of teacher efficacy, instructional leadership and PLC more closely, as classroom observations and feedback from peers and colleagues are shared elements in all the variables.

The literature on PLC has painted a picture of a collaborative, community-based learning environment that is reflective of the 21st-century educational paradigm in developed countries. In relation to this, Aziah Ismail et al. (2014) recommends the active practice of PLC by teachers in schools in order to improve school performance and to achieve the desired student outcome. Yet, the practice of PLC is still in its infancy in developed countries such as Malaysia (Muhammad Faizal Abdul Ghani &

Crow, 2013). The practice and concept of a PLC and learning organization is still a novelty for the field of education in Malaysia (Rosnah Ishak & Muhammad Faizal Abdul Ghani, 2012).

Additionally, findings from focus groups of Malaysian teachers reveal that they glean direct insight into how to improve classroom practices when the principal, headmaster or subject head observe them (Malaysian Education Blueprint, 2013). Class observation and mentoring are among some of the characteristics that constitute common descriptions of PLCs.

In spite of a TALIS report that 90% Malaysian teachers have shown high commitment towards self-improvement by way of school-based coaching activities, the statistics show that the extent of the practice on the ground is lower than is desired. Presently, only 16% practice peer observations and lesson planning –the mainstays of school-based professional development activities and Malaysia Education Blueprint, 2013).

This is grounded in many international studies and a myriad of literature. Following this, a PLC can take cues from on-site training that is grounded in real-world classroom realities. Findings from a myriad of international studies have found that this kind of on-site training is more effective than training programs that are conducted off-site (MEB, 2013).

The role that leadership – specifically, instructional leadership – has on the establishment of PLCs in schools is a common talking point for any legitimate

discussion on PLCs. On the surface, instructional leadership theory appears to parallel to the dimensions contained within Hord's (1997) professional learning communities' framework.

Hord (1997) herself derides the concept of a hero principal that swoops in to execute a quick-fix, facetious and low-quality program in the mould of the "microwave oven" theory of school improvement. Instructional leadership, as posited by Hallinger and Murphy (1985) place a lot of emphasis on the school leader's capacity to inspire change.

Consider the dimensions inherent in Hallinger and Murphy's (1985) Principal Instructional Management Rating Scale (PIMRS) - that is one of the models dominating the body of literature related to instructional leadership: efficacy for classroom management, efficacy for instructional strategies and efficacy for student engagement. Both these models place a heavy emphasis on the headmaster as an agent of change.

On the surface level, this might appear to run counter to professional learning communities', specifically Hord's (2004) bottom-up, people-first, shared leadership, democratic ideals. At the same time, Hord's (2004) model of PLCs adheres closely to Senge's (1990) theory of learning organization, and includes the dimensions of supportive and shared leadership and shared values and vision, among three other dimensions: collective learning and application of learning, supportive conditions and shared practice.

The differences lie in the way the PLC models view leadership. While instructional leadership models perceive it as binary and push the school head to the

forefront of school improvement efforts, PLC model reaches further by including ALL members of the organization into decision-making, facilitated by the headmaster. In other words, the dimensions of instructional leadership parallel closely with those of PLCs' in their descriptions of leadership roles in establishing a successful learning community in schools, regardless of setting.

The role of teacher efficacy, instructional leadership and PLC might spell the success or failure of literacy and numeracy enhancement. Teachers could conceivably see this program as an extra workload or embrace it as professional empowerment instead of a restriction. On the leadership front, school heads might perceive the initiative in a positive light and see it as an opportunity for teacher empowerment.

The study can see how school heads and teachers make sense of the literacy and numeracy achievement and how it defines their roles in relation to it. DuFour and Eaker (1998) point out that a major impediment to the effectiveness school improvement efforts stems from a lack of attention towards school leadership. A study by Rosnah Ishak, Muhammad Faizal Abdul Ghani and Saedah Siraj (2014) on high-performing schools in Malaysia supports this statement by highlighting the importance of leadership to the school.

The purpose of this research is to investigate schools through the wider lens of student achievement in basic literacy and numeracy by examining the variables of teacher efficacy, instructional leadership and PLC. A study of how these aspects of teacher efficacy, instructional leadership and PLCs influence student achievement have rarely been studied comprehensively in Malaysia. To that end, a study on teacher

efficacy, instructional leadership and PLCs vis-à-vis literacy and numeracy in Sibu Division might be instructive as a contribution towards the body of literature.

1.1.1 Teacher Efficacy

School improvement efforts invariably involve improving the skill of teachers and capacity-building. Teachers are placed in the unique position of capacity-building due to principals' and the headmaster's lack of skills, time or resources for instructional leadership (Danielson, 2011). In the context of this study, teachers' positions as the primary screeners for literacy and numeracy puts teacher efficacy on the forefront.

Teacher efficacy is as essential to organizational survival as the orthodox headmaster-led leadership. Although the bulk of focus on school leadership is on the roles headmasters school managers, Duke (1994) begged to differ. To that end, Duke (1994) decried the perception of school leadership as the special province of a select few, pointing instead to numerous studies of subordinates who exercise leadership roles. Simply put, such leadership is not confined to a singular role or to a single person. Both teachers and administrators have the potential capacity to fill this role.

Further moving away from the above-mentioned traditional leadership, Crowther, Kaagan, Ferguson and Hann (2002) conceived of parallel leadership, which links teacher and school administrators in order to operationalise schools as knowledge generator. Here, the teachers and the administrators work together towards school improvement and to build school capacity. Education researchers like Marzano,

Waters and McNulty (2005) conducted a meta-analysis on teaching and learning habits and practices in educational institutions and schools.

Unsurprisingly, the study suggests that student learning is strongly affected by the teacher's choices of instructional strategies. This same study further asserts that the individual teacher's powerful teaching style could hold a large sway over the instructional culture within the institution itself. This means that an institution or school might have control over the curriculum, but it is the student characteristics that would have a larger effect overall (Marzano, Pickering & Pollock, 2001).

1.1.2 Instructional Leadership

Towards the end of the 20th century, there was a raft of amendments in educational policies at the time to upgrade the qualifications of teachers from teaching certificates to a diploma, for example – as well as a panorama of initiatives designed to lift the level of professionalism amongst teachers. The upgrades did not stop there. (Malaysian Education Blueprint, 2013).

The three dimensions of the instructional leadership model describe the aspects of school context that may influence the successful implementation of instructional leadership. These characteristics are categorized into ten sub-dimensions: framing the school goals, communicating the school goals, coordinating the curriculum, supervising and evaluating instruction, monitoring student progress, protecting instructional time, providing incentives for teachers, providing incentives for learning

(Hallinger & Murphy, 1985).

Compared to other leadership styles like transformational leadership, instructional leadership is easier to understand and implement by school heads. Simply by reviewing the dimensions of the instructional leadership model, the school head can already know how instructional leadership looks like. Results from past studies suggested that the school head may influence the progress of the students, rather influencing the students' scores directly. Additionally, instructional leadership is slightly more impactful on student achievement when compared to transformational leadership (Shatzer, Hallam & Brown, 2014).

Where most leadership theories focus on the leader's behaviour and its subsequent implications on the organizational and individual level, instructional leadership researchers seek to look beyond observable of leaders (Day, Gu & Sammons, 2016). Instead, it is the leader's inherent and dispositional characteristics and qualities which are of interest. The vacuum of information on instructional leadership amongst Malaysian school heads at both the primary level catalyzes this particular study.

1.1.3 Professional Learning Communities

Studies on school effectiveness have found that students' performance is influenced by the system inherent within a high-performance school which is further supported by quality leadership and quality teachers (BPG, 2010). Teachers and school

leaders are sent for professional enhancement training by specific departments within the Malaysian Ministry of Education, like Teacher Training Division (BPG) and Aminuddin Baki Institute (IAB).

One of the initiatives of BPG to ensure the sustainability of teacher quality is Professional Learning Communities. The choice of PLCs as one of the initiatives to enhance the quality of teachers is based on the trend and development within the education field of developed countries. In these countries, the notion of PLCs is nurtured and strengthened among educators as part of the effort to enhance teacher professionalism. The concept of PLCs in said countries includes collaborative activities within and beyond the school community. The school can introduce stakeholders from outside the school into the classroom to interpret and deliver the curriculum. In addition, there can be collaborative activities between stakeholders and the school to strengthen the delivery of lessons to improve student performance.

The PLCs in developed countries engage in an assortment of collaborative activities, namely: team teaching, lesson demonstration, buddy support system and lesson study. The concept itself is based on three main ideas. These include: ensuring that students learn, a culture of collaboration and a focus on results.

The Malaysian Ministry of Education (MoE) has advanced the implementation of PLCs as the conduit for pedagogical and curricular reform in line with the reform thrusts outlined within the Malaysian Educational Blueprint (2013-2025). This focus on the achievement of desired student learning outcomes is in agreement with the current interest towards PLCs around the world (DuFour & Eaker, 2008). A broad spectrum of researches

within the Anglo-American contexts have credited PLCs with the improvement of instructional practice and student learning outcomes by way of the teachers own professional learning.

In addition, positive teacher performance, holistic school improvement and ~~h~~ealthy school culture are among the advantages and benefits resulting from PLCs (Hord, 1997; Senge, 2006; Fullan 2006; McLaughlin and Talbert, 2001). Developments in the field of teacher professional development like reflective practice and inquiry-based and evidence-driven practice, continuous and community learning, as well as job-embedded learning, have contributed to the current popularity of PLCs (Hairon, 2008).

Hord (1997) is in agreement with that definition, reporting PLCs as a committed group of school staff and administrators whose goals of a more engaging student learning experience and efforts to improve the students' academic performance form the core of this ideal. This results in a shared vision, collaborative working and learning experience, reviewing and visiting other classrooms and an involved decision-making process.

Oftentimes, the term PLCs is mentioned in reference to committed educators who work continuously in a collaborative fashion to help their wards and students achieve their best academically. Activities based upon inquiry and action research are some of the ways whereby this can be achieved (DuFour, DuFour & Eaker, 2008). PLC is perceived as a useful organizational tool – an arrangement that benefits the school by way of an integrated and effective staff-development approach. In addition, it has a sound basis with regards to strategy – especially where transformation and

improvement is called for.

The Malaysian Ministry of Education disseminated the PLC framework and Tool Kits in 2011. The PLC model circulated by the MoE saw the formation of Learning Teams within schools that adopt the framework for the implementation of learning communities. The express purpose of the PLC is to develop pedagogy and enhance subject content knowledge to improve instructional practice within the classrooms. The adoption of a myriad of collaborative tools and methods is encouraged. These include lesson study, learning walk, as well as action research. Of these, lesson study proves to be the most commonly practiced and widely used method amongst professional learning community members. Professional learning communities necessitate schools and teachers to embrace a cyclical process of continuous improvement. These include: identifying student needs through the use of data; analyzing peer research and teacher research; applying good judgement through the use of research; investing ample time for reflection; monitor and assess the implementation of professional learning communities; collaborate and experiment with new teaching practices, and be transparent and open when communicating information to stakeholders.

1.1.4 Literacy and Numeracy in Malaysia

The Literacy and Numeracy Screening (LINUS) program was introduced in 2010 for the purpose of improving Malaysian students' linguistic and numeracy proficiency. This program was created on the basis that existing educational approaches and

strategies at the time were insufficient to arrest illiteracy, despite the initiation of various remedial programs (Curriculum Development Division, 2015).

The LINUS program continues where the KIA2M program left off (Tubah & Hamid, 2011). In contrast to previous literacy-related stratagems that have focused on the Malay Language, the LINUS2.0 program was formulated to include the English Language. The success of the LINUS program in providing a viable solution to the issue of illiteracy in the Malay language and mathematics paved the way for LINUS2.0 (Ministry of Education, 2012)

The failure to master the 3Ms, namely reading, writing and mathematics, became the impetus for the establishment of the literacy and numeracy screening program by the Malaysian Ministry of Education (MoE). Disappointing statistics reveal a nationwide failure by Year 5 students to master basic literacy skills, with Johor charting 15.9%, Selangor 15.4%, Sarawak 11.4%, Kedah 9.6%, Kelantan 8.4%, Perak 6.7%, Penang 5.8% and Pahang 5.7% (Education NKRA, 2010). Studies by Nazariyah Sani (2014) amongst indigenous students found further evidence of low and unsatisfactory levels of literacy for the Malay Language and Numeracy.

Also known by its abbreviation LINUS, the aim by the Ministry of Education was to ensure that students have mastered the basics of the Malay Language as well as numeracy skills by the end of the third year of schooling. Subsumed under the education National Key Result Area (NKRA) and within the purview of Education Performance and Delivery Unit (PADU), three cohorts of Year 1 to Year 3 primary school students have successfully completed the LINUS cycle in 2012.

By the end of 2012, 99% of all three student cohorts have achieved the required mastery in Malay Language literacy and numeracy, as aspired by the Ministry of Education (Nazariyah Sani, 2014). In 2013, the Ministry of Education added English Language Literacy to the list, alongside the existing Malay Language Literacy, as well as Numeracy. Henceforth, this incarnation of the literacy and numeracy screening is known by the acronym LINUS2.0.

The LINUS2.0 program echoes one of the aspirations of Malaysian Education Blueprint (MEB) 2013-2025 for students. The MEB extrapolates this focus on linguistic proficiency in Shift 2 out of eleven shifts. This is aimed at transforming the system and expressing the MoE's aspiration to ensure every child is proficient in the Malay Language, English and an additional language.

The aspiration of LINUS2.0 includes ensuring that all school-going children in Years 1 to 3, with the exception of special needs students, obtain mastery in Malay Language Literacy, English Language Literacy and Numeracy after three years of primary schooling. As of 2015, the screening for Malay Language Literacy (LBM), English Language Literacy (LBI) and Numeracy is conducted twice a year, in March and September, for all students in Years 1 to 3 across the nation.

This is a performance-tracking mechanism to help ascertain the students' progress in English literacy is in line with the expected pace. The students screened for two literacy components: reading and writing. Each component is allotted one month each for completion.

The MoE has set the Key Performance Index (KPI) for English Language literacy at 67% for Year 1, 83% for Year 2 and 100% literacy rate for Year 3. For the purpose of this research, the sample comprises of primary schools that are selected based on the achievement of their Year 3 students' Malay Language Literacy, English Language Literacy and Numeracy in 2015. The 2013-2015 Year 3 batch is the first cohort to have completed the LINUS2.0 cycle for English Language literacy, marking the first time Year 3 students across the nation were screened for all three subjects. Therefore, only schools that have reported an achievement of more than 90% for LBI, and 100% for LBM and Numeracy for Year 3 are chosen for this research.

An additional criterion for selection is the presence of PLCs within these LINUS2.0 KPI-achieving schools. The sample schools have initiated programs specific to LINUS2.0. Examples include the *Kelas Bimbingan* LINUS2.0 or extra classes for LINUS2.0 that are conducted after school hours. These classes were done as part of the schools' intervention plan to help students who have not mastered all 12 constructs of the LINUS2.0 Malay language literacy, English language literacy and numeracy screening. The organization of these extra classes specifically for LINUS and remediation was also observed in Perlis and Kedah by Siti Zulaiha Ahmad and Ariffin Abd Mutalib (2015).

The achievement of 100% proficiency for English Language literacy in Year 3 could be indicative of a culture of collaboration amongst teachers with regards to early intervention for English Language literacy. The interventions come from the teacher's own initiative, with actionable school-level programs that are formulated based on screening data from Year 1 and 2. As Siti Zulaiha Ahmad and Ariffin Abd Mutalib

(2015) observed in a study on teachers of low-achieving students vis-à-vis the LINUS program, teachers were proactive in creating visual aids and extra exercises without showing over-reliance on the LINUS workbook provided for by the MoE.

This observation parallels the attribute within PLCs (Hord, 1997; Hipp & Huffman, 2003), namely shared personal practice. With reference to this study's variable in Hallinger and Murphy's (1985) model for instructional leadership, previous studies by Malaysian researchers pointed to the crucial role of leadership in the success of a school's LINUS program. Nazariyah Sani (2012) mentioned the importance of the headmaster's role in the implementation of this program. The deeper the school head's understanding of the program's underlying principles and objectives, the higher its impact would be on student achievement.

This inter-relation of teacher efficacy, instructional leadership, professional learning culture and their parallels with schools in LBM, LBI and NUM is the main reason why these schools are selected for the study.

1.2 Problem Statement

The attainment of basic literacy and numeracy skills is one of the most critical issues facing primary school education. The Literacy and Numeracy Screening (LINUS) program were introduced by the Malaysian Ministry of Education (MoE) in 2010 for the purpose of improving Malaysian students' linguistic and numeracy proficiency.

However, statistics reveal a statewide failure by Sarawak students to master basic literacy and numeracy skills.

This problem has impacted the country's needs for the highly-skilled, creative and innovative workforce to drive competitiveness on the 21st-century global economic stage. Furthermore, low-achievement in literacy and numeracy will hamper efforts by the MoE to improve the country's standing in two major international large scale assessments, the Trends in International Mathematics and Science Study (TIMSS) and the Program for International Student Assessment (PISA).

A sizable number of studies have looked into each of the factors in this study: instructional leadership practices (Jamelaa Bibi Abdullah & Jainabee Md Kassim, 2011, Aziz & Baba, 2011), teacher efficacy (Rahmah Murshidi , Mohd Majid Konting , Habibah Elias & Foo Say Fooi, 2006; Aziah Ismail, Loh Hooi Yen & Abdul Ghani Kanesan Abdullah, 2015; Teh Pei Ling, Zaidatol Akmaliah Lope Pihie, Soaib Asimirin, & Foo Say Fooi, 2015) and professional learning community in Malaysian schools (Muhammad Faizal Abdul Ghani & Crow, 2013; Zuraidah Abdullah & Muhammad Faizal Abdul Ghani, 2014).

Yet, to date, there has been little formal inquiry into the relationship between the instructional leadership of headmasters, teacher efficacy, professional learning community (PLC) and their roles within the context of literacy and numeracy proficiency. The factors being studied are centered on the pedagogical aspect or teaching and learning in the classroom.

The issues arising from our discussion are: which variable can contribute towards enhancing the mastery of basic literacy and numeracy skills? Can the existing monitoring and supervisory practices of the headmaster assist to that end? Can teachers who collaborate improve learners' outcome? Can the teachers' own beliefs with regards to the delivery of the lesson determine whether the students learn?

Thusly, it is important to investigate how teachers' beliefs about teaching and learning (teacher sense of efficacy), a school leadership that pays close attention to classroom activities (instructional leadership) and a school-wide culture of collaboration (PLC) as it might help offer an explanation for the below-average performance of primary school students in Sarawak and could be used to develop strategies for school improvement.

1.3 Research Objectives

i. To identify the level of teacher efficacy in primary schools.

ii. To identify the level of instructional leadership in primary schools.

iii. To identify the level of professional learning communities in schools.

iv. To determine the differences in teacher efficacy, instructional leadership, and professional learning community practices in schools based on gender, academic qualification and teaching experience.

v. To determine the relationship between teacher efficacy and professional learning communities in primary schools.

vi. To determine the relationship between instructional leadership and

professional learning communities in primary schools.

vii. To determine the relationship between teacher efficacy and instructional leadership in primary schools.

viii. To determine the relationship between teacher efficacy, instructional leadership and professional learning communities and student achievement in literacy and numeracy in primary schools.

ix. To ascertain the factors that influence literacy and numeracy achievement in primary schools.

1.4 Research Questions

i. To what extent is teacher efficacy practiced in primary schools?

ii. To what extent are dimensions of teacher efficacy practiced in primary schools?

iii. To what extent is instructional leadership practiced in leadership in primary schools?

iv. To what extent are dimensions of instructional leadership practiced in primary schools?

v. To what extent is professional learning community practiced in primary schools?

vi. To what extent are dimensions of professional learning community practiced in primary schools?

vii. Are there differences in teacher efficacy in Sibu division primary schools based on gender, academic qualification and teaching experience?

viii. Are there differences in instructional leadership practices in primary schools

based on gender, academic qualification and teaching experience of the teachers?

ix. Are there differences in professional learning community practices in primary schools based on gender, academic qualification and teaching experience of the teachers?

x. Is there any relationship between teacher efficacy and professional learning communities in primary schools?

xi. Is there any relationship between instructional leadership and professional learning community in primary schools?

xii. Is there any relationship between teacher efficacy and instructional leadership in primary schools?

xiii. Is there any relationship between teacher efficacy, instructional leadership and professional learning communities with student achievement in literacy and numeracy in primary schools?

xiv. Is teacher efficacy the best predictor of the achievement of literacy and numeracy in primary schools?

xv. Is instructional leadership the best predictor of the achievement of literacy and numeracy in primary schools?

xvi. Is professional learning community the best predictor of the achievement of literacy and numeracy in primary schools?

1.5 Hypothesis

Null hypotheses for Research Questions vii, viii and ix

Ho1: There is no difference in teacher efficacy by gender

Ho2: There is no difference between the responses for teachers based on academic qualifications for teacher efficacy

Ho3: There is no difference between the responses for teachers based on working experience for teacher efficacy

Ho4: There is no difference in instructional leadership practices by gender.

Ho5: There is no difference in instructional leadership by academic qualification.

Ho6: There is no significant difference between the responses for teachers based on working experience in instructional leadership

Ho7: There is no difference in professional learning communities practices by gender.

H08: There is no difference between the responses for teachers based on academic qualifications for professional learning communities

Ho9: There is no difference between the responses for teachers based on working experience for professional learning communities

Null hypotheses for Research Questions x, xi and xii

Ho10: There is no relationship between teacher efficacy and professional learning communities in primary schools.

Ho11: There is no relationship between instructional leadership and professional learning communities in primary schools.

Ho12: There is no relationship between teacher efficacy and instructional leadership in primary schools.

Null hypotheses for Research Questions xiii, xiv and xv

Ho13: There is no relationship between teacher efficacy and for literacy and numeracy

achievement.

Ho14: There is no relationship between instructional leadership and literacy and numeracy achievement.

Ho15: There is no relationship between professional learning communities and literacy and numeracy achievement.

Null hypotheses for Research Questions xvi, xvii and xviii

Ho16: The dimensions of teacher efficacy have no significant influence on literacy and numeracy achievement.

Ho17: The dimensions of instructional leadership have no significant influence on literacy and numeracy achievement.

Ho18: The dimensions of professional learning communities have no significant influence on literacy and numeracy achievement.

1.6 Research Framework

1.6.1 Theoretical Framework

The independent variables are related to teacher efficacy, instructional leadership and professional learning communities (PLCs). These are found in the Tschannen-Moran, Woolfolk-Hoy and Hoy (1998) Teacher Self-Efficacy Model, Hallinger and Murphy's (1985) Model of Instructional Management and Hord's (1997) Professional Learning Communities Model.

These are the question items which make up the rest of the questionnaire. These include dimensions related to teacher efficacy, such as the school manager's ethics, rapport with subordinates, ability to act as an agent of change in the school, influential in determining the school's vision and mission and his/her propensity to help the subordinates both on the professional as well as the personal level.

The descriptions for instructional leadership include the extent to which the headmaster practices the three main dimensions: defining the school mission, managing the instructional program and developing a positive school learning climate. Subsumed under this dimension of defining the school mission are the descriptors: framing the school's goals and communicating the school's goals. Under the dimension for managing the instructional program, the instructional leader coordinates the curriculum, supervises and evaluates instruction and monitors student progress.

The instructional leader/ headmaster is expected to develop a positive school learning climate (Hallinger & Murphy, 1985). In this dimension are the following descriptors: protects instructional time, provides incentives for teachers, provides incentives for learning, promotes professional development and maintaining high visibility.

A school's achievement can be investigated through the lens of professional learning communities, where the extent to which teachers collaborate towards the desired academic outcome can be observed (Hord, 1997). There are six dimensions stated within the framework itself. The descriptors contained therein are: supportive and shared leadership, shared values and vision, collective learning and application,

shared personal practice and supportive conditions

1.6.2 Conceptual Framework

The three independent variables are based on Tschannen-Moran, Woodford Hoy and Hoy's (1998) Teacher Self-Efficacy Model, Hallinger and Murphy's (1985) Model of Instructional Management and Hord's (1997) model for professional learning communities. Teacher efficacy, instructional leadership and professional learning community are independent variables, with student enhancement for literacy and numeracy the dependent variables.

With this framework, the researcher can observe and measure the effect of teacher efficacy, instructional leadership and professional learning communities on the school performance for literacy and numeracy. This framework can report which of the items within these factors stand out for Sarawak primary schools as drivers of school improvement or change.

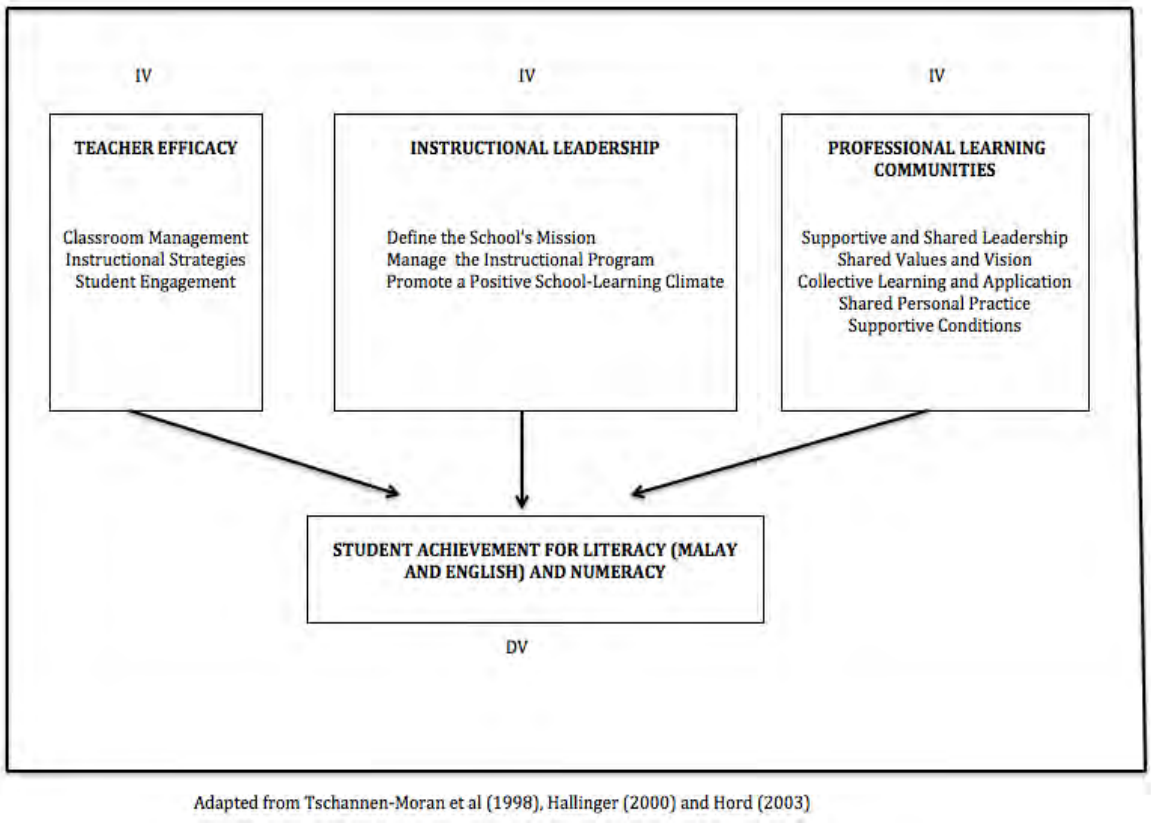

Figure 1.1. Conceptual Framework

Figure 1.1 illustrates the influence of teacher efficacy, instructional leadership and professional learning community on student achievement in literacy and numeracy (the dependent variable)

In other words, teacher efficacy, instructional leadership and professional learning communities affect the achievement of literacy and numeracy. Figure 1.1 is a conceptual framework that has been adapted from Tschannen-Moran et al.'s (1998) Teacher Self-Efficacy Model, Hallinger and Murphy's (1985) Model of Instructional Management and Hord's (1997) Professional Learning Communities Model.

1.7 Operational Definition

The following terms have been chosen by the researcher to be defined for clarity as well as for clarification during the study. Some of the terms will be further defined in the literature review.

Teacher efficacy: A teacher's judgement of his or her abilities to perform actions leading towards desired student outcomes (Tschannen-Moran, Woolfolk Hoy & Hoy, 1998)

Efficacy in student engagement: Comprising both behavioural and emotional components, engagement alludes to the intensity and emotional quality of the students during classroom interactions (Bandura, 2006). Examples of positive emotions displayed by sustained behavioural engagement in learning activities include optimism, curiosity and interest when carrying out learning activities.

Efficacy in instructional strategies: Efficacy in instructional strategies is the extent of the teacher's beliefs about their ability to explore alternative teaching and assessment strategies during classroom interactions (Tschannen-Moran et al., 1998). Additionally, it measures the teacher's level of confidence when fielding difficult questions from students and assigning more challenging tasks to students.

Efficacy in classroom management: Efficacy in classroom management refers to the level of teachers' belief about the ability to control the students' classroom behaviour (Bandura, 2001)

Instructional leadership: Instructional leadership refers to practices whereby school heads improve student achievement and classroom instruction (Hallinger, 2005; 2003; Quinn, 2002; Hallinger & Murphy, 1987; Murphy, Hallinger, & Mitman, 1983). The most comprehensive studies were done on the dimensions conceptualized by Hallinger (2005), which include: defining the school's mission, managing the instructional program and promoting a positive learning climate (Hallinger, 2011a; 2005; 2003; Leitner, 1994; Hallinger & Murphy,1987; Hallinger & Murphy, 1985).

Defining the school's mission: This dimension consists of two instructional leadership functions: framing the school's goals and communicating the goals to the school's instructional staff (Hallinger, 2011a; Hallinger 2005; 2003; Kruger, 2003; Leitner, 1994; Hallinger & Murphy, 1987). The goals communicated here are clear, measurable, practical and achievable, with an emphasis on instruction (Kruger, 2009).

Managing the instructional program: This leadership practice consists of instructional evaluation and supervision, curriculum coordination and the monitoring of student progress (Hallinger 2005; 2003; Leitner, 1994; Hallinger & Murphy, 1987).

Promoting a positive learning climate: The four instructional leadership practices subsumed under this dimension include: protecting instructional time, promoting professional development, maintaining visibility, and providing incentives for teaching and learning (Hallinger 2005; 2003; Hallinger & Murphy, 1987)

Professional Learning Community: The professional learning community consists of school administrators and teachers who focus a shared vision and mission

towards the improvement of students' learning, working collaboratively, and taking collective responsibility for the students' achievement (DuFour, 2004; Giles & Hargreaves, 2006; Hord, 2004; Scott, Clarkson, & McDonough, 2011).

Collective learning and application: School administrators and teachers work collaboratively, thereby acquiring new knowledge and skills. They engage in the sharing of practices in order to improve instructional skills and knowledge (Hord, 2004)

Shared personal practice: Colleagues examine each other's work by giving feedback and assistance towards the improvement of instructional practice (Hord, 2004)

Shared and supportive leadership: The school administration empowers the staff to engage in the sharing of decision-making and power (DuFour &Eaker, 1998; Hord, 2004).

Shared values and vision: Decision-making activities about instruction in the school are based on the goals laid out for the learning community (DuFour, DuFour, Eaker, & Many, 2006; Hord, 2004).

Supportive conditions: Collegiality and collective learning are supported by elements such as physical conditions (example: time and place) and human capacities (example: respect and trust) (DuFour, DuFour, Eaker, & Many, 2006; Hord, 2004).

Collaboration: Bruffee (1999) defines collaboration as the process where interdependence reigns supreme amongst group members - in a milieu where the creation and sharing of knowledge produce the sort of great work none could have achieved on his/her own.

LINUS2.0: The Literacy and Numeracy Screening (LINUS) program were introduced in 2010 for the purpose of improving Malaysian students' linguistic and numeracy proficiency. To ensure that students have mastered the basics of the Malay Language as well as numeracy skills by the end of the third year of schooling. Subsumed under the education National Key Result Area (NKRA) and within the purview of Education Performance and Delivery Unit (PADU), three cohorts of Year 1 to Year 3 primary school students have successfully completed the LINUS cycle in 2012.

Literasi Bahasa Inggeris (LBI): Literally translated as English language literacy, LBI makes up the English Language component of the LINUS2.0 program. Its addition to the LINUS program in 2013 delineates LINUS1.0 and LINUS2.0.

Literasi Bahasa Melayu (LBM): The Malay Language component of the LINUS program, it has been the mainstay, alongside Numeracy since 2010.

Numeracy (NUM): The mathematics component of the LINUS program, it has been the mainstay alongside LBM since 2010.

1.8 Significance of the Study

The findings from this research can be useful to those of administrative capacity, especially when it is pertinent to the sphere of primary and secondary schooling. In addition, upon completion of this research the resultant data can be generalized to the same two groups as well; namely the primary school teachers and school headmasters of Sarawak. These would include teachers and administrators across a wide age, sex, and working experience spectrum.

The teachers forming the sample would still be teaching full-time in their respective schools in or around Selangau, Kanowit and Sibu districts. The reason underpinning my decision to choose only teachers is due to the fact that they are situated in close proximity to each other and are reachable. All things considered, this consolidation of both experience and qualification make them prime examples for me to observe for contributions to the school or the improvements of it.

This study can assist teachers, school managers, District Education Office or State Education Department and the Malaysian Ministry of Education in the creation of an actionable plan for school improvement in Sarawak, as a whole. The findings can aid the schools studied in school improvement efforts vis-à-vis school leadership, the inculcation of suitable culture and refining existing plans for PLC implementation, as well as having a deeper insight into the existing literacy and numeracy program within the MoE.

This can serve as a report card for the health of PLC rollout and literacy and numeracy in Sarawakian schools in line with MoE initiatives. As well, this study can add to the growing body of literature with regards to professional learning communities in Malaysia. To this date, published work on professional learning communities is very Peninsular-specific. Given the topographical, administrative and infrastructural challenges associated to Sarawakian schools, the findings can be of interest for policy makers and educationists in their bid to promote equality of access to 21st-century education, as spelt in the Malaysian Educational Blueprint 2013-2025.

This study can potentially be used at the District Education Office (PPD) and State Education Office (JPN) level to create actionable plans, both strategic (long-term, 5-year plan) and tactical (short-term, 1-year plan) for the purpose of the district or state-wide school improvement planning. Reported at the monthly performance dialogue (performance dialogues), the school leaders can be apprised of the qualities of teacher efficacy, instructional leadership and PLC that is necessary to drive the change from outdated teaching and learning orthodoxy to the model that best resembles the 21st-century classroom teaching and learning practices.

The findings from this study can be tailored each school, based on the self-reporting questionnaires – to identify the specific dimensions or items from the TSES, PIMRS and SPSLCQ that still needs to be improved on. From this point on, the PPD or the school can decide whether an intervention is necessary from the school, PPD or JPN.

1.9 Scope and Limitations of the Study

The finding from this study may contribute to existing investigations on the influence or the impact of context, process and content of teacher efficacy, instructional leadership and PLCs on student achievement in literacy and numeracy. The questionnaires might overwhelm the participants due to the sheer number of items - to ensure quality. There is also the possibility of teachers who could be part of the sample, but have not reported sincerely and honestly.

The PLC component in this study focuses on the elements of a school culture that could nurture student achievement. It is merely one perspective out of many. Likewise, the teacher efficacy and instructional leadership were investigated based on its emphasis on student achievement, and may not be looking at the length and breadth of other underlying factors inherent in the schools. In terms of literacy and numeracy, the focus is only on the students' performance in Primary Three. This is due to the program's expectation of 100% literacy rate by Primary Three – an achievement that is even spelt out in the key performance index (KPI). To that end, this study will not be looking at achievements for Primary One and Two.

1.10 Conclusion

The small number of quantitative studies done on the extent to which teacher efficacy, instructional leadership and professional learning communities influence student literacy and numeracy performance in Sarawakian primary schools makes this a

legitimately relevant project to undertake. The primacy of this study is clear from the sample itself – the teachers. Teachers, as well as all civil servants, are highly visible and eminently influential forces of change. It is important, therefore, to find correlations between the domains of teacher efficacy, instructional leadership, PLCs and student achievement in literacy and numeracy so a picture can be drawn of the state of literacy and numeracy relative to Sarawak primary schools.