



INVESTIGATING THE IMPACT OF PROFESSIONAL LEARNING COMMUNITY (PLC) IMPLEMENTATION ON AN ELEMENTARY SCHOOL IN TANZANIA: A COLLABORATIVE ACTION RESEARCH PROJECT

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Abstract:

The purpose of this study was to investigate the impact of implementing a PLC as a form of professional development in an urban elementary school in Tanzania. Using a case study approach, both quantitative and qualitative data were collected from teachers, parents and students to assess the impact of PLC implementation on students' learning outcomes. Data analysis shows that PLCs can be a viable professional development option for schools in developing countries, and more specifically, those in rural-urban Tanzania.

Keywords: professional learning communities, student learning outcomes, elementary schools, collaboration, action research

Introduction

The purpose of this study was to investigate the impact of implementing a professional learning community (PLC) in a rural-urban school in Tanzania. The study specifically sought to investigate the following:

- a) whether professional learning communities (PLCs) can be viable professional development options for Teachers in Tanzania, and
- b) What is the role of a university faculty member in the development and implementation of the PLC in schools?

1. Background

1.1 PLCs

A PLC can be defined as *“a school in which the professionals (administrators and teachers) continuously seek and share learning to increase their effectiveness for students and act on what*

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they learn" (Leo & D'ette, 2000, p. 1). Successful PLCs have been shown to provide a school with a framework to form high-performing, collaborative teams of teachers that are all united toward the improvement of student learning (Annenberg Institute of School Reform, 2004).

1.2 Education Reform in Tanzania

Research shows that in Tanzania, especially in poor urban and rural schools teachers have very few opportunities to engage in professional development activities. The few professional development activities that are offered tend to be aligned with changes in school curricula which do not happen regularly (Wyse, Sugrue, Fentiman & Moon, 2014).

Educational reform policies in Tanzania such as free education have increased enrollment of students at primary, secondary and tertiary levels of education. For example, in 2002 there were 5, 981,338 students compared to 10, 605, 430 primary school pupils in Tanzania (UNESCO Institute for Statistics, 2020). Increased enrollment has created overcrowded classrooms with limited resources. Most schools, especially those in rural areas and municipalities have severe teacher shortages (Wyse, Sugrue, Fentiman & Moon, 2014). This shortage has resulted in large teacher to student ratios on average 1:51 with at least 10 schools with a 1:200 ratio (Letea, 2018).

In addition, overcrowding, teacher shortages and lack of resources have resulted in students' poor performance in exit examinations (Kambuga, 2013). In 2012, only 31% of students passed the Primary School Leaving Examination (PSLE) (Joshi & Gaddis, 2015). Because of the high student-teacher ratio, there is a large number of untrained teachers and those trained receive inadequate training and little professional development (Wyse, et al. 2014).

1.3 Student Achievement

Student achievement is directly related to teacher preparedness and professional development (PD) opportunities to provide in-service teachers with skills to become more effective in the classroom (Meister, 2010; Opfer & Pedder, 2011; Bayar, 2015). All teachers need professional development opportunities. However, in Tanzania, there is a greater need for professional development opportunities because there is a significant number of pre-service teachers who are admitted to training colleges with very low grades, mostly with grades of D's and E's in their subject areas. As a result, many teachers lack the understanding and fundamental content and pedagogical knowledge to teach (Wedgwood, 2013, p. 9).

1.4 Purpose of Study

This research study examined the impact of implementing a PLC as a form of professional development in an elementary school in Tanzania. A growing body of literature shows that collaboration and teamwork practices within supportive PLCs have positive outcomes for teachers' professional development (Fulton & Britton, 2011). PLCs provide opportunities for teachers to collaborate in long term professional development

opportunities within their schools. Studies also show that PLC embedded professional development approaches are effective in improving teaching and learning processes (Hord, 2008; Lutrick & Szabo, 2012). In addition, PLCs do not require substantial financial resources to develop and sustain and they have been shown to be effective in fostering capacity building (Andrews & Lewis, 2002; DuFour, 2004; Barton & Stepanek, 2012, Schaap & de Bruijn, 2018).

There is a dearth of literature on the role of PLCs in developing countries such as Tanzania whereby, the education reform efforts have faced setbacks, primarily because of a lack of financial resources and qualified teachers (Wabike, 2013 & Telli, 2014). In addition, there is no documented research on PLCs developed and implemented through university-school partnerships and or implemented with the support of a university faculty member in Tanzania. Therefore, it is important to examine whether PLCs can be a viable option for providing teachers with professional development opportunities in schools in Tanzania. This study, therefore, investigated the impact of a PLC implemented through a partnership between a faculty member from the USA supported by a Fulbright Scholar Award and a poor urbanⁱⁱ school in Tanzania. The study was guided by the following questions:

- a) Are PLCs a viable professional development option for teachers in Tanzania?
- b) What impact does the implementation of a PLC have on students' learning outcomes?
- c) What roles do faculty members play in the development and implementation of the PLC?

2. Theoretical Framework

PLCs are communities of practice whose main focus is a sustainable change that improves learning, teaching and the environment within which this takes place (Hord, 1997). Communities of practice (CoP) like PLCs entail having a collective purpose, establishing trust, collective intelligence, and sharing of knowledge which leads to the development of tacit knowledge. In CoP, the community replaces the individual as the learning subject and the repository of knowledge as a collective heritage (Gherardi, 2009).

Change as a shared responsibility is an overarching theme that informs the thinking and the trajectory that this exploratory study has taken. Specifically, this study is founded on the fundamentals of organizational change and leadership articulated by Senge & Fullan (1997, 2003, 2013, 2014 and the principles of PLC (Hord, 1997, DuFour, 2004, 2015). For Senge and Fullan, the organizational change model is composed of disciplines/pillars. These include a) a Shared Vision, b) Mental Models, c) Team Learning, d) Personal Mastery and, e) System Thinking. Likewise, successful PLCs models have shown to include a) shared values, b) shared focus on student learning, c) collaboration, d) reflection and, e) reciprocity (DuFour, 2004, Hord, 2003).

ⁱⁱ School setting is in a very poor neighborhood with crowded semi-permanent homes & poor sanitation, no infrastructure etc.

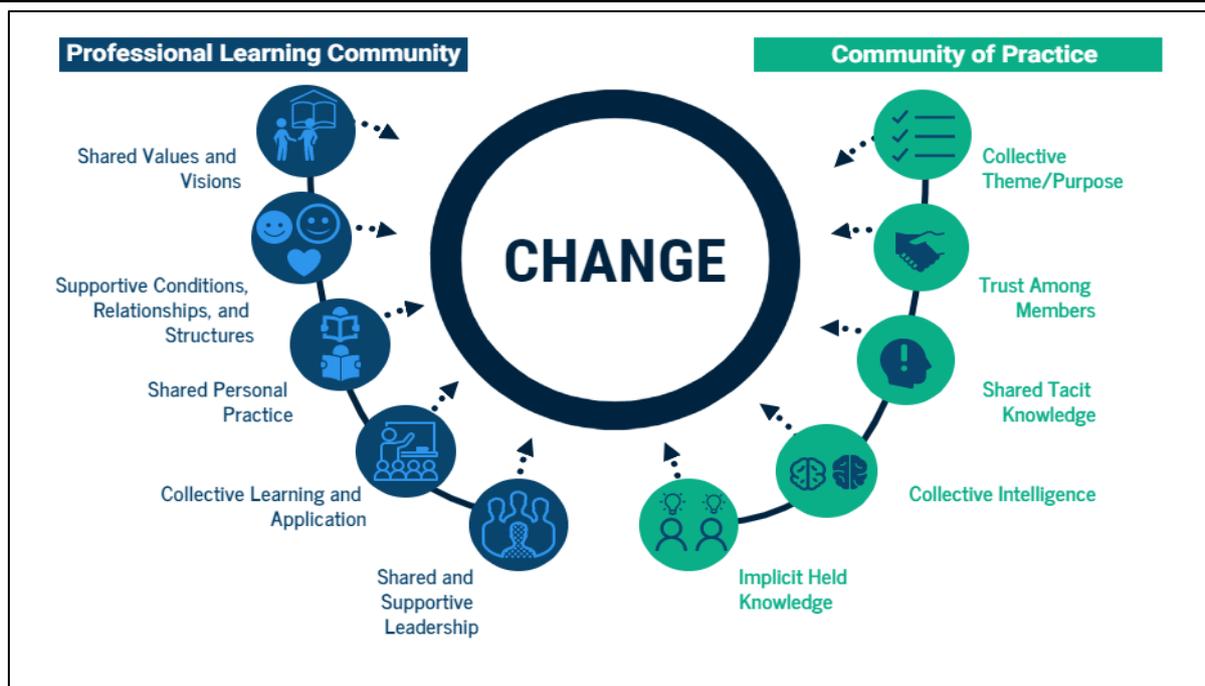


Figure 1: Conceptual Framework Diagram

Senge emphasizes the idea of a system of thinkers or teams made up of individuals who have a commitment to realizing a vision through the development of mental models or images that consciously or unconsciously affect their behaviors (Senge, 2006). According to Senge (2013), change happens when teams start 'thinking together' as they share their experiences, insights, knowledge and skills with each other about how to do things better. He notes that *"teams develop reflection, inquiry and discussion skills to conduct more skilful change conversations with each other which form the basis for creating a shared vision of change and deciding on common commitments to action"* (Senge, 1990).

Fullan (2003) emphasizes that change is complex and should not be mandated. He recommends that teams should come together knowing that they have agency for change. To Fullan (2003), change should be understood as a journey, not a blueprint; problems should be accepted as inevitable and should be embraced as friends; and, the individual should not be lost in the collective (Fullan, 2003). He warns that vision and strategic planning should come as a result of a great deal of reflective experiences and that a collective vision becomes possible if different personal visions are re-mixed and synthesized. Accordingly, change is too important to be left to experts and each stakeholder should perceive themselves as agent of change (Fullan, 1999).

The literature on school reform supports and encourages the use of PLC as a comprehensive reform initiative (Annenberg Institute of School Reform, 2004, Fulton & Britton, 2011). A growing body of literature shows that collaboration and teamwork practices within supportive PLCs have positive outcomes for teachers' professional development (Fulton & Britton, 2011). PLCs can be beneficial in all schools including those with students defined as at-risk of school failure (ndunda et al , 2017). PLC embedded professional development approaches have been shown to be effective in

improving teaching and learning processes (Hord, 2008; Lutrick & Szabo, 2012). PLCs are relatively inexpensive and they are school-based.

While there is little information on the utilization of PLCs in Tanzania, PLCs have found great success in other parts of the world. Williams (2013) conducted research on the effects of implementing a PLC in a Texas urban education setting. Using a mixed-methods approach and following a causal-comparative research design with 200 schools William (2013) found that PLCs positively impact teaching practices and student achievement.

A similar study conducted in Wales by Harris and Jones (2010) examined the effects of PLCs implemented in 6 schools for an entire academic year. Throughout this time, teachers were observed as they participated in the PLCs. At the end of this time, the researchers concluded that PLCs are a productive way of changing professional practice and can lead to system-wide change. ndunda et al. (2017) focused on science and math PLCs) that were implemented through a university-urban high school partnership. While the PLCs were part of mandated school-wide, content-based PLCs, analysis of data revealed practices that were effective in developing and implementing successful math and science PLCs. In addition, a review and critical analysis of professional learning communities (PLCs) research using 13 empirical international studies by Doğan & Adams (2018) concluded that participation in PLCs resulted in improved teacher practice and increased student achievement.

Given the success of PLCs in high-income countries such as the USA, it is possible that PLCs could be highly beneficial to Tanzania as well. This study, therefore, sought to investigate the impact of a PLC of the adoption of PLCs' principles on rural-urban elementary school students' outcomes in rural Tanzania.

3. Methods

3.1 Case Study Intervention Approach^{iii,iv}

This research employed a case study methodology. A case study approach was used to generate an in-depth multifaceted understanding of the process of developing and implementing the PLC and the dynamics of the interactions by the stakeholders within which the PLC was implemented (Crowe et al., 2011). The study has some aspects of a quasi-experimental design where the participants self-selected themselves and were not randomly assigned (Price et al., 2015). The independent variable is the PLC.

3.2 Context of the Study

The study was done in an urban primary school, namely School A, in Morogoro municipality, 190 kilometres west of Dar es Salaam, the commercial capital of Tanzania. Morogoro is the capital of Morogoro Region situated at the base of Uluguru Mountains.

ⁱⁱⁱ "The case study approach | BMC Medical Research Methodology." 27 Jun. 2011, <https://bmcmmedresmethodol.biomedcentral.com/articles/10.1186/1471-2288-11-100>. Accessed 4 Nov. 2021.

^{iv} "Case study - Wikipedia." https://en.wikipedia.org/wiki/Case_study. Accessed 4 Nov. 2021.

It is divided into six districts: Mvomero, Kilosa, Kilombero, Ulanga, Morogoro Urban, and Morogoro rural (World Maps of the World, 2021) and has a population of about 2,000,000 people (2012 Census). Morogoro urban has 83 schools while Morogoro Rural center has 655 schools

The school began as a youth center in 1948 and grew to over 1600 students by 1997. In 1998, the school population was split into two schools, A and B for administrative purposes with each school getting about 800 students. The school had extremely poor performance with less than 5% of the students who sat for terminal grade 7 exams qualifying to enter secondary schools. Currently, School A has grown and has an enrollment of over 1200 students with about 42 teachers serving grades k-7 or nursery to standard 7. Most of the children come from the neighbouring community where most parents or guardians live on less than \$1/day. Other information includes:

- Most children lack basic needs, such as food, health care, school supplies, and books.
- Children arrive at school at 7:30 am and go home at 3:30 pm except those in grades 4 and 7 (examination classes) are expected to stay in school for extra tutoring until 5 pm.
- Many children in this school live with guardians (aged grandparents) and have only one meal a day-dinner.
- Some students have to walk over 5 miles to school
- Teachers and parents/guardians are very committed to their children's education and there is a very active Parent Teacher Association.

At the time of the study, the principal in this school had been there for I seven years with a new principal. Prior to the arrival of the current principal (principal at the time of the study), the teachers described the school as an extremely failing school which had an absentee principal and a very biased leader. There were no resources and some teachers sat on rocks, the compound was unkempt and drug peddlers and users had invaded the school compound. Above all, only 5% of the students who sat for grade 7 national exit exams passed to join secondary schools.

The current principal had worked for 7 years with the teachers to create an environment in which teachers, students, parents and the community were valued. The principal was always looking for strategies to continue the school improvement plan. It was for this reason he agreed to work with me to implement the PLC as a way to continue the improvement of the school.

3.3 Implementation of the PLC

3.3.1 Development of Vision and Values Statement

Implementation of the PLC began with a workshop to introduce the school community to the functions and purposes of PLCs. The first step of implementing a PLC is the development of mission and vision statements. In a PLC, it is important to have a shared vision and values for the school. The school community decided to begin with the articulation of one. The process of developing the vision and mission statements took

about 6 hours on a Saturday. The working team had 35 participants. The participants were teachers, students and parents who had been selected by their colleagues to represent them. Each group/team came up with what they felt mattered most to the school. In order to come up with a shared vision and mission, we conducted a gallery walk of all the drafts that each team had developed. This process facilitated the development of a shared/collective vision and mission statements for the school. Below is a picture of the vision and mission statements developed by the group. It was in Kiswahili which is the national language and medium of instruction in Tanzanian primary schools.

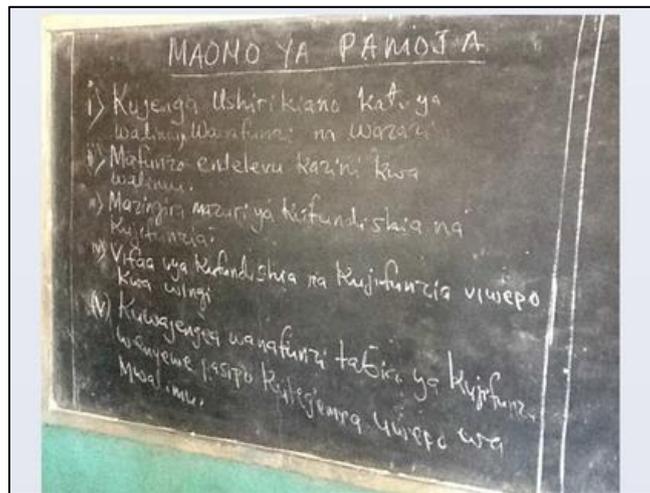


Figure 2: Vision and Mission Statements

(English Translation:

1. To be a school that all children are supported to meet their highest potentials.
2. To establish and reinforce cooperation between teachers, students and parents.
3. Have Sustainable in-service training and continuing education for teachers.
4. Develop a conducive teaching and learning environment.
5. Have adequate resources for teaching and learning.
6. Graduate primary school graduates who are independent and self-reliant learners.)

After the development of the vision and mission, teachers in grades 4-7 formed grade-level teaching teams. Each grade level had three streams. A total of four teams were formed. The teachers met at least twice a week to plan together and discuss any issues that came up including students' performance and school attendance. They also discussed problems that some of the students experienced at home. The school-wide meetings were also held monthly.

3.4 Participants

The participants of the study included teachers, students, parents and other community representatives.

3.4.1 Teachers

At the time of the research, the school had 42 teachers. The teachers participated in either and or of the following roles in the PLC. a) Development of the Mission and Vision of the school, b) Participation in teaching teams that co-taught and observed each other's teaching, c) participation in the technology workshops. Twenty teachers were selected by their colleagues to participate in the development of the vision and mission. Sixteen teachers participated in co-teaching activities and met regularly to talk about their teaching experiences. All the teachers participated in the monthly parent-teacher-community meetings.

3.4.2 Principal

The principal of the school participated in all activities. He had been in this school for about six years at the time of the research. The principal had 10 years of prior experience as a school teacher. He introduced me to the school community (teachers, parents, students and local leaders) about the PLC and its goals. He co-taught with me and other teachers. He also introduced me to the local education officials to obtain permission to conduct the study in the school. In addition, he led the PTA meetings and activities. . He encouraged all the teachers to participate in the peer observations, co-teaching activities and the conversations that followed.

3.4.3 Parents

Since the principal had been in this school, he involved the parents and community in securing the school he had inherited which had only a 5% pass rate in the national examinations for grades 4 and 7. Therefore, parents were invited to participate in the development of the school's vision and mission. The first gathering had over 100 parents. The parents chose volunteers to represent them in a workshop that developed the vision and mission. About 12 parents (including the chairperson of the Parent Teacher Association - PTA) were involved in this endeavor. Age and gender representation was equitable.

3.4.4 Students

One of the important leadership approaches of the principal was to involve students. Therefore, ten student representatives were selected by their classmates to participate in the development of vision and mission statements for the school. Each grade level, from grades 4-7 nominated at least two students. Students from grades k-3 were not represented.

3.4.5 University Faculty Members

The PLC was implemented with the support of a university faculty member. I collaborated with teachers and parents to develop the vision and mission statement of the school. I also co-taught with teachers and served as an intermediary between the stakeholders. In addition, I facilitated professional development workshops and worked

collaboratively with teachers on strategies that were geared toward improving instruction.

3.5 Data Sources

3.5.1 Teacher Surveys

In order to better understand the school culture and to examine the impact of the PLC intervention, two surveys were administered to the teachers. All 42 teachers were given the survey to complete. This first survey administered in 2013 provided the baseline data. The follow-up survey was completed in 2015 and was given to 42 teachers. The questionnaire for the survey was adapted from the Olivier & Hipp (2010) survey: Assessing and analyzing schools as professional learning communities. The survey statements focused on practices which occur or do not occur in their school based on the five categories of a PLC: a) shared and supportive leadership, b) shared values and vision, c) collective learning and application, d) shared personal practice, and e) supportive conditions–Relationships & Structures. The survey was translated from English to Swahili and teachers completed the survey at home and returned the survey in a sealed envelope. The instructions are given where that the participants read each statement and then use the scale of “1 = Strongly Disagree (SD) 2 = Disagree (D) 3 = Agree (A) 4 = Strongly Agree (SA)” to select the scale point that best reflected their personal degree of agreement with the statement.

3.5.2 Participant Observations and Field Notes

A. Participant Observations

Participant observation is a method based on participating and observing in which field notes, sketches, photographs or video recordings are used as methods of data collection (Clifford et al., 2010). As a participant-observer, I led in the development of the PLC and participated in activities as a regular teacher would do. I worked with the teachers, and student and parent representatives to develop the mission and vision of the school. In addition, I co-taught with the principal and other teachers and participated in PTA meetings. I was involved in the rich conversations/discussions and exchanges between parents and the principal and teachers.

B. Field Notes

I also took field notes of my observations and activities in the school. The field notes were both descriptive and reflective. The field notes helped me to remember and record behaviors, activities, events, and other features of my observations. According to (Thomas, 2015), field notes are intended to be read by the researcher as evidence to produce meaning and an understanding of the culture, social situation, or phenomenon being studied. I wrote reflective notes about my thoughts, ideas, questions and issues that I noted that would need clarifications.

3.5.3 Interviews

Interviews were conducted individually and in small groups with teachers representing various grade levels, content areas, and experience levels. The principal and parents also participated in interviews. The principal was interviewed separately as well as the parents. Teachers both new to the school and veterans who had taught in the school for over 30 years were requested to participate in the interviews. Ten teachers volunteered to participate in the interviews. Eight parents were interviewed individually.

The interviews were open-ended. Interview questions for the teachers included a) length of time teaching in the school b) subjects area c) number of years of teaching and d) what changes had taken place in the school e) the learning environment f) the opportunities and challenges of teaching in this school. The parents were also asked about a) the length of time they have had a child in the school, b) how many children they have in the school, c) their perceptions about the academic performance of their children and d) whether they felt welcome in the school.

3.6 Procedure

The data collection process began with the application and receipt of a research permit from the Ministry of Education to conduct research in Tanzanian schools. This step was followed by finding a school where I could conduct the study. I went to various schools—both primary and secondary level schools. The principal in this particular school agreed to work with me and was happy to have me at his school.

After the principal of the elementary school agreed to have my work with his teachers, I had to report to the local education office to get further authorization to work with teachers in this school. After receiving authorization from the local education officer, I was then formally introduced to the teachers, parents and students.

No one in the school had ever heard of PLCs. However, after discussions with all the stakeholders, we agreed that developing a vision and mission statement for the school was an important first step. This was done by a team of teachers, parents and students.

What followed were classroom observations and co-teaching with the math teachers and then with science and English teachers. The workshops, interviews and surveys came later. Unfortunately, the first survey was given to the teachers in August 2013 after two months of implementing the PLC. After that, I left the research site and returned back in 2015 and then gave the second survey to the teachers after my second research period.

3.7 Data Analysis

This intervention research utilized qualitative and quantitative data collection strategies. Data analysis for the quantitative parts of the research included calculating means, and standard deviations and conducting t-tests to compare data from the two surveys. At the same time, qualitative data analysis was an ongoing activity. Creswell (2014) notes that data analysis in a qualitative study is an ongoing process of extracting, compiling, and modeling raw data for purposes of obtaining constructive information to formulate

conclusions, predict outcomes, and support decisions. I read the field notes and listened to the interviews several times to extract themes using coding as one data organizing structure in qualitative research. I looked for the most used words or phrases in the interviews that symbolically assigned a summative, salient, essence-capturing and/or evocative attribute for a portion of language-based or visual data (Saldafia, 2009, p. 3).

4 Findings

4.1 Surveys

4.1.1 Survey #1 (2013)

The first survey was administered in August 2013 at the end of my first phase of research when I had to return to the United States. The teachers were given the surveys in a return envelope. The mean scores of the categories for this survey were calculated. Out of the 42 teachers given the survey to complete, only 14 of them completed it and returned the survey in a sealed envelope.

Table 1: 2013 Means and Sub-Category Means

Category	Means of Individual Category									
Shared & Supportive Leadership (Mean)	2.86	2.64	2.57	2.71	2.64	2.36	2.79	2.38	2.64	2.62
Shared Vision & Values	2.57	2.62	2.57	2.57	2.54	2.5	2.29			2.52
Collective Learning & Application	2.5	2.64	2.36	2.5	2.36	2.38	2.58			2.47
Shared Personal Practice	2.36	2.21	2.14	2.29	2					2.2
Supportive Conditions / Relationships	2.62	2.62	2.46							2.57
Supportive Conditions / Structures	2.21	2.15	1.86	1.71	1.77	2.38	2.5	2.5	2.57	2.16

This survey established the baseline data for the study. The means and standard deviations and t-scores were calculated. Above is a Table 1 showing the means of main categories and sub-category statements.

As shown in Table 1 above, the category mean scores ranged from 1.71 to 2.86 on a scale of 1-4. The statement “the staff plans and works together to search for solutions to address diverse student needs” had the highest mean score of 2.86 (under the shared and supportive leadership category) and the statement that says “appropriate technology and instructional materials are available to staff” had the lowest mean score of 1.71. This statement was under the supportive conditions and structures category. These data support themes from observations, interviews and field notes that showed that teachers had positive working relationships with each other and the principal.

4.1.2 Survey #2 (2015)

The second survey was administered in August 2015 after two years of the PLC implementation. The means of the main categories and subcategories were calculated. Surveys were given to 42 teachers in the school and 23 completed and returned their surveys in a sealed envelope. Table 2 below shows that means ranged from 1.91 to 3.73 on a scale of 1-4.

Table 2: 2015 Means and Sub-Category Means

Sub Category	Sub Category Means									Sub-category Mean Averages
Shared & Supportive Leadership	3.48	3.43	3.3	3.57	2.96	3.17	3.17	3.09	2.61	3.20
Shared vision & Values	3.48	3.35	3.48	3.26	3.22	2.87				3.28
Collective Learning & Practice	3.61	3.48	3.04	3.3	3.61	3.13	3.48			3.38
Shared personal Practice	3.27	3.48	3.65	3.3	3.35					3.41
Supportive conditions / Relationships	3.48	3.22	3.22							3.31
Supportive conditions / structures	<u>3.73</u>	3.48	<u>1.91</u>	2.13	2.65	3.09	2.96	3.09	2.91	2.88

The category addressing supportive structures and conditions and specifically, the item about the availability of appropriate technology and instructional materials had the lowest mean score. The highest mean score was also in the same category “supportive conditions and structures” but the specific statement is that there is a “provision of time to facilitate collaborative work” (3.73).

In all the categories/statements, the mean scores of the follow-up survey (2015) were higher than those for the 2013 survey. Lack of technology and instructional materials statement had the lowest score in 2013 (1.71) and availability of fiscal resources for professional development received the lowest score in 2015 (1.91). Both criteria are in the supportive conditions and structures category. The item with the most increased mean score in an agreement between the two surveys is the observation that “time is provided to facilitate collaborative work”. The score ranged from 2.21 in 2013 to 3.73 in 2015 on a scale of 1-4. The item “the staff informally shares ideas and suggestions for improving learning” had the 2nd greatest difference/increase. The score increased from 2.14 to 3.65. This appears that the PLC increased teachers’ and stakeholders’ conversations about teaching and learning albeit informally.

A t-test was conducted in order to test whether these means of the statements of the two surveys had any significant differences. The values of the t-test are shown below in Table 3. The mean values for the two survey categories’ differences have statistical significance because they are under 0.05. All these increases are significant.

Table 3: T-test

Category	T-test between the means (2013 & 2015)
Shared & Supportive Leadership (Mean)	0.0002
Shared Vision & Values	0.00015
Collective Learning & Application	0.000007
Shared Personal Practice	0.0000014
Supportive Conditions-Relationships	0.004
Supportive conditions-Structures	0.0066

The above t-tests show that there was a significant difference between means for survey 1 and survey 2.

From the surveys, it is evident that the teachers in this school felt that collective learning was facilitated. The high mean scores were in line with my experience as a participant-observer in this school. The principal and teachers frequently co-taught lessons and the students seemed to enjoy class sessions taught by the extremely passionate principal. He was an administrator who focused on students' learning and he was an active participant in the learning process.

4.2 Interview Results

The interviews corroborated the findings of the surveys. Interviews were conducted with 10 teachers who volunteered to participate in the study. Nine of the interviewees were female and one male. The principal did not participate in the group interview. The teaching experiences of the teachers ranged from 5 to over 30 years. The 30-year veteran gave the other teachers a historical perspective of the school. She emphasized that the school had made significant improvements in all areas during the 7-year tenure of the principal and had made significant improvements during the PLC implementation period. She noted that, prior to the arrival of the current principal, the school was completely neglected.

The teachers indicated that there is unity in the school. They emphasized that teachers in the school are united and work together not against each other for the benefit of the students. One teacher highlighted how important it is for the school to be a safe and positive environment not just for students but for teachers as well. She said, *"as some teachers have very stressful home environments and want to have a peaceful working environment"*. Another teacher said that *"the school environment is good. You can see it is also clean and we have plants."* (Interview, 2015) They noted that in *"the end, it is the students who suffer most when the environment is hostile"*. The teachers expressed satisfaction that none of the teachers at this school is competing with each other. *"We help each other and are all invested in the welfare of the students"* (Interview, 2015). They noted that the school environment is peaceful; therefore, they are able to concentrate on improving students' learning. During my stay at the research site, I saw teachers working in collaboration with each other. When I attended staff meetings, I noticed that the teachers were not afraid to ask the principal questions or to offer their opinions. I did not notice hesitancy. The

teachers' sentiments support my observations. The school environment was very peaceful with children either in-class learning and also playing during breaks.

4.2.1 Interview with Principal

The interview with the principal focused on his role in the school and what he felt was his top priority. The principal highlighted the following as his priorities.

- 1) Finding strategies to educate all children, especially special needs students. He felt that teachers in public schools are not trained to educate special needs students.
- 2) Motivating all teachers to teach all children. He felt that there were some teachers who were not committed to teaching the students, all children. He liked the motto—No child left behind!
- 3) Reinforcing the concept of professional learning communities so that teachers can collaborate and get the support they need from each other. He felt that PLC would provide teachers with opportunities for professional development within the school.

From the interview with the principal, it became clear that he was an administrator committed to serving all children. He knew that he couldn't achieve this goal by himself, so he enlisted the help of the teachers, students and parents as well as the community to collaboratively work on this project with him. He emphasized the need to treat teachers with respect. He noted that his goal was to include teachers in decision making. He did not want to alienate any of the teachers.

The principal noted that most teachers were very frustrated by the education system because of the lack of funding. He said that this lack of interest from the government, caused some teachers to be unwilling to put extra time into the school day to tutor students. However, he persuaded them to come to school on Saturdays and even before classes begin in the morning for the sake of the children. Teachers spent this time working on problems with their students who lacked effective, home learning environments. The principal was often in charge of the 7 am study sessions.

The following are initiatives that the principal had put in place.

- 1) Tutoring program for grade 4 and 7 students in the morning, after school and on Saturdays;
- 2) A small fund to help students with lunch and fare from school after tutoring sessions. Students, especially those who lived far from school, needed transportation after tuition sessions. At the time of the interview, I had donated money to make porridge for the grade 7 students who were expected to be in school from 7 am to 5:30 pm.
- 3) Saving money and continuing to construct a fence around the school to ensure students' safety.

Also, at the time of the interview, the principal was planning an end of semester celebration for the teachers. He wanted to thank them for their commitment throughout the year. The school's budget was so thin to sponsor a celebration and teachers donated money to finance their celebration!

4.2.2 Parents' Interviews

In addition to interviewing the principal, I also interviewed parents. A group of eight parents participated in the interview. The themes that emerged from the interviews with the parents were similar to those of the teachers. Mainly, they noted that the school was a safe learning environment for their children. They also felt welcome in the school and expressed a sense of ownership and accountability to the school. The parents said that they had confidence in the teachers and in the school administration. They noted that the school had grown from 800 students to 1115 in about six years. This growth was mostly due to families moving to the area so that their children could specifically attend this school. The parents were very involved and cared deeply about their children's education. I attended PTA meetings whereby the parents respectfully deliberated on difficult issues. The level of participation, involvement and discussion of issues and solutions were high. Parents challenged each other and were not afraid to oppose their counterparts' ideas as well as those of the chairperson. However, at the end of the day, what was of most value to them was what worked in the interest of their children.

5. Discussion

The purpose of this study was to examine the impact of implementing a PLC in a rural-urban elementary school in Tanzania.

Data from the research provide significant evidence that the PLC was successful. The PLC was a viable form of professional development as it was affordable and because of buy-in from the stakeholders, its development and implementation were relatively smooth. The survey results, observations and interviews all provide evidence showing that the teachers felt that collective learning was facilitated. In the interviews, teachers noted that they felt a sense of increased collaboration in their school after the implementation of the PLC.

The classroom observations showed that teachers and students were more engaged in the teaching process. There was an increased collaboration between the teachers. The students appeared to enjoy learning and being in the school. Teachers were willing to plan lessons together and to co-teach their subjects. The observations showed that there was a heightened level of collaboration between all the stakeholders.

The collaborative development of the vision and mission statements for the school provided an opportunity for all the stakeholders to become more intentional in their goals of creating a more conducive learning environment. The surveys show increased mean scores for all PLC categories/dimensions between the 2013 and 2015 survey responses. The high mean scores in the 2015 survey were in line with my observations as a participant-observer in this school. Also, in the interviews, teachers emphasized the collaboration that exists between them as noted by one teacher during the interviews. The teacher observed that *"there is unity in the school. We are united and work together not against each other for the benefit of the students"*. (Interview with teachers, 2015).

Overall, this study was successful in observing the positive effects of implementing a PLC at an urban-rural Tanzanian elementary school.

6. Limitations

While the study successfully acquired new information regarding PLC implementation in a rural-urban Tanzanian setting, there are still areas of research that must be explored in greater detail. The study was unable to observe if student test scores had improved or not. The only test scores that were available were from national exams that grade 4 and 7 students took at the end of the year. However, there was no specific data collected for all the students before and after the implementation of the PLC. For that reason, this research cannot conclusively declare that PLCs in an urban-rural setting improved student test scores. Yet, the research was able to provide information on increased engagement and excitement towards education from the students.

Another limitation of the study was the small sample size of participants. For this study, only one school was observed. Many of the experiences outlined in this study could be very unique to this school. More studies similar to this one must be conducted on rural-urban elementary schools to see if this study's results were standard. As well as this, the response rate to both surveys was relatively low. For the first survey, 14 (37%) out of 42 teachers returned their 2013 survey while 23 (55%) out of 42 teachers completed the 2015 survey. Hence, the relatively low response rate can result in sample bias which affects the generalization of the results.

6.1 Similarities and Differences with Other Studies

This research was similar to the Williams (2013) study, as it observed the implementation of PLCs in an educational setting. The Williams study was conducted over three years with 200 schools. The Tanzania study was confined to a single school and therefore was able to more intimately study the participants and the PLC. The Tanzania study is unique as well because unlike the Williams study which only focused on teachers and students, the study in Tanzania observed teachers, students, parents, and the principal. The studies are similar in the sense that they both may have observed changes due to the already existing school culture. In our study specifically, this school culture would be the change brought forth due to the new principal. Overall, both studies observed a positive impact from the implementation of the PLCs.

In terms of the Harris and Jones (2010) study, the study had a different goal than the research conducted in Tanzania. The Harris and Jones study investigates how PLCs can be transformative for an entire country's education system, unlike the Tanzania study which was an in-depth study of the implementation of a PLC. Yet, these studies both confirmed that in order to have a successful PLC, a school must have a strong leadership system. In the Tanzania study, strong leadership was demonstrated by the principal. While these studies were somewhat different, they both agreed on the fact that PLCs can be successful when there is a collaboration with all the stakeholders and strong

leadership. Also, these studies are different from the Tanzania study in which the researcher was also a participant. The role that the researcher played was critical in the development and implementation of the PLC. Being an outsider and a university professor was an advantage because I was not aligned with any of the stakeholders. I was perceived as impartial and there was enthusiasm from all the stakeholders to participate in the PLC. This partnership between the school and university is an important strategy that is capable of bringing needed expertise to the classroom.

7. Significance of the Study

This study is significant, as it's the first study on PLCs that has been conducted in Tanzania and perhaps in Africa. While previous western studies on PLCs solely utilized test scores and surveys for example (Williams, 2013) and (Harris and Jones, 2010), this study used additional methods to observe the impact of PLCs. These methods were qualitative in nature and included observations and interviews of all stakeholders. This study was also conducted over a longer period of time. While one of the other studies lasted a year, this study went on for two years. This allowed for the PLC to be more deeply studied over a longer period of time. This study was able to come up with a new and improved PLC model for schools in Tanzania and perhaps other low-income countries as well. Specifically, the inclusion of all stakeholders (especially parents) and a university faculty in the process of developing and implementing the PLC is very important. The parents knew what was going on in the school and they were willing to participate and collaborate with the teachers and the school administration. In addition, the students were involved in the development of vision and mission statements. Their voices were heard and they shared the vision and mission with their colleagues in the classroom. They felt an ownership of the vision and mission of their school. The impact was not just a joyful learning classroom experience but a school-wide experience that included the maintenance of a clean, school compound with plants and flowers taken care of by the students.

These steps are important in ensuring positive PLC experiences for other schools in Tanzania).

- a) Develop rapport with the stakeholders. Be respectful to the culture of the community members; become a learner.
- b) Assess the needs of the school and whether or not a PLC would work
- c) Develop and implement a vision and values/mission of the school together; include all stakeholders.
- d) Participate in the process--collaborate (teach, offer services/workshops). My commitment to the goals of the PLC encouraged the stakeholders to commit to the vision and mission of their school. Making it a reality
- e) Demonstrate your genuine interest in the stakeholders—(i.e. do not just focus on data collection).
- f) Do not leave the site! Five years later, I am still considered a member of the school.

8. Implications of the Study

From this study, it is clear that schools must promote more collaboration amongst their school community members. As a study showed, PLCs are highly successful when all stakeholders are involved. Teachers learned a lot from each other. Therefore, it is important for schools to utilize more team teaching practices and group planning sessions. The leadership structure is also very important. In this study, the principal led through horizontal leadership and included teachers' voices. If change is to take place there should exist a horizontal leadership approach--teachers value being heard! Treating everyone as a knower. It is important to value teachers' content, pedagogical knowledge as well as knowledge of their students. The principal did not mandate change. Change is complex and should not be mandated and teams should come together knowing that they have agency for change. It should be understood as a journey, not a blueprint; problems should be accepted as inevitable and should be embraced as friends.

Therefore, principals must aim to become completely engaged with their school community. Students and parents also appeared to benefit when they connected with their own communities. The workshop sessions with the entirety of the school community were especially successful in creating a strong bond between participants, as they were able to advocate for their own needs and work towards common goals. All stakeholders are important. For example, parents were willing to provide some financial resources to support the teaching and learning of their students.

9. Recommendations for Further Studies

The study was conducted in one school. Therefore, it is important to replicate this study in other schools in similar settings to see if the model works. Student achievement was one of the main research questions of the study; however, there was no formal assessment data collected to determine students' achievement. Pre and post-tests should be conducted to assess students' achievement. This way, there is an established baseline before the PLC is implemented. In addition, interviews with the students could be conducted to determine their perceptions of their teachers' instructional practices during the PLC implementation period. Also, researchers should encourage as many teachers as possible to participate in the surveys as well as the interviews. Overall, the study must reach more individuals in similar environments and examine test scores to close the gap in knowledge.

10. Conclusion

Teachers in Tanzania have little or no professional development opportunities. Classrooms are overcrowded and students' achievement is low. The study focused on examining whether PLCs could be an affordable professional development opportunity for teachers in Tanzania. In conclusion, the data show that implementing a PLC in a rural-

urban school in Tanzania is a successful professional development option/strategy. The PLC created an opportunity for teachers to collaborate and improve their teaching. The study showed that there was an increased collaboration between teachers, principal students and parents. There was a shared vision and mission between the stakeholders. In addition, the study also showed that a university faculty member is important in the development and implementation of a successful PLC.

Conflict of Interest Statement

The author declares no conflicts of interest.

About the Author

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