PROFESSIONAL LEARNING NETWORKS IN ACTION: LESSONS FROM EAST AFRICA

Ontario Institute for Studies in Education

Dr. Stephen Anderson

Dr. Mary Drinkwater

Dr. Caroline Manion

Wesley Galt

Aga Khan Academy (Mombasa)

Dr. Maina Gioko

Rose Iminza

Isaiah Njagi

Rupen Chande (Project Advisor)

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ABOUT THE AUTHORS

Ontario Institute for Studies in Education University of Toronto.

Dr. Stephen Anderson (Principal Investigator). Professor. Department of Leadership, Higher and Adult Education; Director. Comparative, International and Development Education Centre/Collaborative Specialization.

Dr. Mary Drinkwater (Research Associate). Lecturer. Department of Curriculum, Teaching and Learning, and the Collaborative Specialization in Comparative, International and Development Education.

Dr. Caroline Manion (Research Associate). Lecturer. Department of Leadership, Higher and Adult Education and the Collaborative Specialization in Comparative, International and Development Education /Centre.

Wesley Galt, M.A. (Research Assistant). Doctoral graduate student. Department of Curriculum, Teaching and Learning.

Aga Khan Academy (Mombasa)

Dr. Maina Gioko (Co-investigator). Vice Principal. Professional Development and Outreach, Aga Khan Academy, Mombasa

Rose Iminza (Co-investigator). Master Trainer. School Support, Professional Development Centre, Aga Khan Academy, Mombasa.

Isaiah Njagi (Monitoring and Evaluation Officer). Professional Development Center, Aga Khan Academy, Mombasa.

Rupen Chande (Research Project Advisor), Manager. External Relations and Outreach, Aga Khan Academies Unit, France

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List of Acronyms

AKAM	Aga Khan Academy Mombasa
AKAM-PDC	Aga Khan Academy Mombasa Professional Development Center
AKU-IED	Aga Khan University Institute for Educational Development
CDF	Continuous Discussion Forum
COT	Classroom Observation Tool
CSO	Curriculum Support Officer
EL	Educational Leader
ELTA	English Language Teacher Association
DHT	Deputy Head Teacher
FG	Focus Group
HT	Head Teacher
ICT	Information and Communication Technology
IED-EA	Institute for Educational Development East Africa
KCPE	Kenya Certificate of Primary Education
KELG	Kwale Educational Leaders Group
KEPSHA	Kenya Primary School Heads Association
LMIC	Low and Middle Income Country
MELA	Mombasa Educational Leaders Association
MTA	Mathematics Teachers Association
PDC	Professional Development Center
PLES	Professional Learning for Educators Series
PLN	Professional Learning Network
PNTD	Professional Network for Development
PTE	Program for Teachers of English
PTM	Program for Teachers of Mathematics
SESEA	Strengthening Education Systems in East Africa
ST	Senior Teacher
TSC	Teachers Service Commission

Chapter 1
Introduction

1.1.0 Strengthening Education Systems in East Africa

The Aga Khan Foundation Canada and Global Affairs Canada supported a five-year project to strengthen teacher education and support systems to improve learning outcomes in literacy and numeracy at pre-primary and primary school levels in target areas of Kenya, Tanzania and Uganda (Strengthening Education Systems in East Africa - SESEA[1]). The SESEA project included both programmatic interventions and a research and policy advocacy component. The research agenda aimed to contribute to evidence-informed policy practices in East Africa and to enhance research capacity by partnering local and international research institutions. SESEA funded several research studies to be carried out from September 2015 and March 2017, including the study which is the focus of this report. The report presents and discusses the research and findings from an investigation of primary school teacher and head teacher professional learning networks (PLNs) in coastal Kenya that were established initially as an initiative of the Aga Khan Academy Mombasa Professional Development Center (AKAM-PDC). Implementation of the PLNs has been enabled with funding support from SESEA through the Aga Khan Academy.

1.2.0 Aga Khan Academy-Professional Development Center

The Aga Khan Academy, Kenya, is located in Mombasa and is part of an integrated network of schools offering an international standard of education from pre-primary to senior-secondary levels, with a rigorous academic and leadership experience. The Academy develops home-grown intellectual talent of in the hope that the students will become future leaders.

One of the distinguishing features of the Aga Khan Academy, Mombasa (AKAM) is the provision of high quality professional development programs for practicing teachers focusing on subject content acquisition, general pedagogical skills, interactive learning techniques and student-centered teaching methodologies. These programs are offered through the Academy's Professional Development Center (PDC) to both the Academy's faculty and to faculty from Government schools with the aim of deepening the pool of well-trained teachers regionally. By doing so it aspires to raise the status of the teachers and thereby create the conditions for more talented people to be drawn to the profession. Without the support of the administration, teachers find it difficult to implement the skills gained. The PDC also provides professional development for school leaders. The PDC has developed outreach courses including:

School Support Program. The program targets school support individuals and educators such as Teacher Advisory Tutors, Head Teachers, Deputy Head Teachers and Senior Teachers. School leaders learn to

[1]Funding for SESEA and this research was provided by the Aga Khan Foundation Canada and Global Affairs Canada. The findings and conclusions presented in this report are those of the authors and do not represent the official positions or policies of the funders or of the researchers' educational institutions.

handle the management of the institutions and provide an atmosphere that is mutually beneficial for the students, teachers and staff members. The "Leading for Learning" course helps school leaders understand, evaluate and implement strategic practices based on the latest models, theories and approaches for attaining institutional transformation as well as supporting the delivery of the curriculum in schools.

Program for teachers of English. The Program for Teachers of English course stems from an identified need for the country's schools to become better equipped to provide more effective means of English language teaching and learning. In order to foster effective learning, the course aims to equip English language teachers to have a better understanding of classroom management, the roles of the teachers and learners and integration in modern learner-centered approaches. It is envisaged that a professional group of well-resourced teachers will be created. This community of teachers will be able to support and collaborate with one another through material development and various projects. In order to ensure the continuation of quality programs the course aims to empower local teachers to become teacher trainers.

Program for teachers of Mathematics. Developing proper mathematical skills for school going children is envisaged in the national plan of Kenyan vision 2030. Teachers play a significant role in student's learning of mathematics from early childhood. They equip the learners with knowledge and skills to develop logical thinking, the ability to apply the acquired knowledge, analyze situations and make rational decisions. The Program for Teachers of Mathematics has been designed to prepare teachers to adequately handle the teaching and learning process. Use of ICT in teaching and learning of mathematics and peer mentorship forms an integral part of the course. Teachers who undergo the training are expected to mentor others in their schools in order to enhance overall improvement of mathematics.

The Academy's Professional Development Center offers additional programs (e.g., ICT use to enhance pedagogy), though the three described above are the main ones connected to this study. As explained below the Academy has played an important role in establishing and supporting networks for alumni of the English and mathematics teacher and the school leadership programs.

1.3.0 The Professional Associations and Networks

Since 2010 the AKAM-PDC has extended its outreach programs for practicing head teachers and teachers through the creation of several professional associations of graduates of its professional certificate programs for primary school head teachers, English language teachers and teachers of mathematics. The associations are designed to function as professional learning networks (PLNs) for the participants and to support interventions and improvements in teaching and learning in the cooperating schools.

The PLN system includes school leader associations in Mombasa (MELA-Mombasa Educational Leaders Association, established in 2010) and a neighboring rural country Kwale (KELG-Kwale Educational Leaders Group, established in 2012), an English Language Teacher Association (ELTA, established in 2010) and a Mathematics Teacher Association (MTA, established in 2014) in Mombasa. Members of the associations are organized in school clusters (three to five clusters per association) aligned with Ministry of Education administrative structures. School clusters typically consist of about 10 neighboring schools. Each school is represented by PDC alumni who are members of their respective PLNs. The school cluster groups meet monthly during the Kenyan school year for the purpose of continuous improvement of

individual members and member schools. Leadership within the school clusters is provided by elected cluster heads with support from AKAM-PDC trainers. Members gather in monthly PLN meetings at an association level to report on cluster activities, identify and plan for PLN wide activities, and to conduct association business. Each PLN has a governance structure comprised of an executive team who meet for an inter-PLN monthly session about issues common to all PLNs and participating schools. Once a year the PLNs host an annual conference to share what they have been doing amongst each other, with newly graduated members of the AKAM-PDC in-service training programs who are invited to join the PLNs.

Support for the establishment and activities of the PLNs has been provided by the PDC, and supported in part with funding from the SESEA project. This support is modest, amounting to a small allowance for transport (Sh150) and for tea (Sh150) as an incentive for those who attend school cluster and association meetings. Additional support includes space for monthly association meetings at AKAM, and access to the PDC resource room for course participants and alumni upon request. Each PLN is assigned a "patron" from the PDC trainers, who acts as an ongoing liaison to the PDC, responds to requests for professional assistance and advice, and coordinates the logistics of collecting attendance records and disbursement of allowances. The PDC patrons also participate as advisors in monthly cross-PLN executive committee meetings, and in the organization of PLN events, such as the annual conference, that take place on the grounds of AKAM. Aside from that, the PLNs are self-governing.

This study was designed to explore the potential and challenges of PLNs as structures and processes for continuous professional learning and school improvement. Specific areas of focus included the implementation of the networks, professional impact on PLN participants and sustainability of this professional network initiative. The study was led by Dr. Stephen Anderson and a research team from the Ontario Institute for Studies in Education University of Toronto, and was carried out in partnership with professional staff from the AKAM-PDC team.

1.3.1 Conceptual background and significance for education

Professional learning networks (PLNs) are being introduced internationally as an innovative strategy for both in-service teacher development and school leader development with an emphasis on supporting the implementation of more effective methods of teaching and learning and of school management (e.g., Katz, Earl & Ben Jaafar, 2009; de Lima, 2010). PLNs typically involve participating teachers and head teachers in inter-school communication and collaborative activities that are aimed at supporting and improving continuous professional learning and school improvement. PLNs address four fundamental challenges to continuous professional learning: (1) how to motivate and sustain ongoing professional learning in the work of practicing teachers and school leaders; (2) how to support the implementation of knowledge that educators are exposed to in professional development experiences outside the classroom and school into skillful ongoing practice; (3) how to adapt external knowledge to local contexts and needs; and (4) how to mobilize practice-based experiences and knowledge of teachers and head teachers into shared continuous improvement efforts (Anderson, 2016). Fullan (2005) and others (e.g., Stoll 2010) emphasize the value of lateral capacity building through networks that reduce school-based educators' isolation and reliance on external expertise for solutions to the problems and challenges they experience in their professional work in classrooms and schools, and that helps focus ongoing learning and improvement efforts on locally relevant problems of practice.

While teacher learning networks are not a new phenomenon (e.g., Lieberman & McLaughlin 1992; Pennell & Firestone, 1996), interest in the potential of networks to stimulate and support continuous improvement in teaching and learning at the classroom and school levels has mushroomed over the past decade and is now closely linked to school-wide improvement in teaching and learning, not merely to teachers' individual professional development. The investigation of professional networks as a strategy for continuous professional learning and school improvement has been largely limited to developed world contexts. Jita & Mokhele (2014) argue that "while the utility of such collaborative structures for teacher learning is fairly well established in many developed countries, we still know very little about how the intended beneficiaries (the teachers) experience these non-traditional structures of professional development" (p. 1).The use of PLNs in Low and Middle Income Country (LMIC) education contexts is a promising focus for professional development practice and for research to explore the experiences, challenges and benefits of this innovation for participants, their schools and student learning (e.g., Jita & Mokhele, 2012, 2014; Ali Baber et al, 2005).

In many countries government education policies, and policies of professional organizations that govern teacher licensure and professional learning, only recognize and reward educator participation in traditional professional development activities (i.e., courses, workshops and conferences). The impact of a sole focus on these traditional professional development activities on educator practice and on improvement in student learning, has been widely critiqued (e.g., Timperley et al., 2007). The findings from this study will provide input into policy discussions around recognition and support for alternative forms of professional learning for teachers and head teachers in the policies of governments and professional organizations, such as the Government of Kenya and the Kenyan Teacher Service Commission. Most professional learning activities emphasize the adoption and implementation of external knowledge and practices in schools. PLNs can be established to enable peer support for implementation of professional knowledge introduced outside the school, and also to stimulate knowledge sharing and production grounded in the practical problems and knowledge arising from interaction among professionals within and between schools as local educators work incrementally to become better at what they do in the contexts in which they work (Bryk, 2015).

1.3.2 Professional Associations and Networks within the Aga Khan Development Network

The idea of creating professional development focused associations of teachers and head teachers can be traced to the Aga Khan University Institute for Educational Development in Karachi, Pakistan, founded in 1993. Pardhan (2017) provides a brief history of the origins and evolution of this 'model' or teacher development in Pakistan (see also Ali Baber, 2005). The idea originated as a strategy for stimulating and enabling continuous professional development for graduates of AKU-IED's professional education programs for practicing teachers and school leaders. Between 1997 and 2003 seven professional associations were formed, beginning with an association of teachers of mathematics, and extending to the establishment of professional associations of science teachers, head teachers, social studies teachers, primary teachers, special education educators, and health education educators and workers. In 2003 an umbrella group linking the ensemble of associations was created, the Professional Network for Teacher Development (PNTD). Two more associations followed, one focused on early years education and the other on teaching ethics. The associations are governed by the members, who pay modest membership

fees, and the professional activities of the associations are member-driven. The general aim of the associations has been to provide members with ongoing opportunities for networking and low cost continuing professional development experiences (e.g., regular workshops, symposiums, summer courses, newsletters) organized by the associations. AKU-IED provides modest organizational support, such as space for meetings, and initially provided a small amount of logistical funding to encourage participation (e.g., snacks at meetings, administrative assistance) until the associations became sustainable on their own. While the impetus for creating the associations originated with graduates of AKU-IED's professional development programs, membership in the associations has been open to educators who have not benefitted directly from those programs. In some of the associations, schools can join as institutional members, rather than being limited to individual teacher subscription.

In sum, the impetus for establishing and supporting the implementation of professional associations grounded in common professional education experiences delivered through AKAM-PDC builds upon the prior history and reported organizational success of similar associations in Pakistan.

1.4.0 The Research

The broad purpose of this study is to find out what lessons can be drawn from the experiences of the AKAM-supported Professional Learning Networks for professional organizations working to establish and support the development and implementation of professional learning networks as a strategy for continuous growth and improvement in teacher and head teacher practice as it relates to student learning. The major research questions are:

1. *What activities do teachers and head teachers participating in professional learning networks engage in?*
2. *How do the leadership, management and support for implementation of professional learning networks of teachers and head teachers influence network activities and participant outcomes?*
3. *What interventions associated with the activities of professional learning networks do participating head teachers and teachers enact in their home schools, and what is the impact of these interventions on the knowledge and practice of their school-based peers?*
4. *What impact do the activities and communication patterns of professional learning networks of teachers and head teachers have on growth in participant's professional expertise and sense of professionalism?*
5. *What policy, organizational and contextual issues and factors influence the implementation and sustainability of inter-school professional learning networks?*

The analysis of PLN network data included attention to gender equity considerations in relation to the kinds of student learning problems addressed in inter-cluster forums and cluster meetings and in relation to the leadership and social interaction patterns observed and documented in the network activities. The ultimate aim of professional learning inputs is to increase the professional knowledge, dispositions and skills of participating teachers and head teachers in ways that might lead to improvements in the quality of student learning. Impact on student learning outcomes, however, is mediated by change in the knowledge and practices of participating teachers and head teachers, and in the case of PLNs by the

sharing and transfer of knowledge and skills acquired through participation in PLN activities with peers in their home schools. For this study we inquire about PLN impact on participants and through the participants on other educators (those not participating in the PLNs) at their home schools. Until that is demonstrated, questions and hard data about PLN impact on the quality of student learning are premature. In particular, because the PLN associations at present are groups of individual educators, it is not reasonable to attribute school-level effects of student learning of member participation at this time. As the members engage in outreach with other teachers in their schools (and in other schools) over time, it may become logically and methodologically reasonable to look for school wide impact on student outcomes. We did ask about school level activities of PLN members, and about their perceptions of impact on student learning in our interviews. Those anecdotal findings are reported in Chapter 6.

1.5.0 Structure of Report

Chapters 1 and 2 introduce the study, its context, and the research design and methods. Chapters 3-7 present and discuss findings aligned with the major research questions. Chapter 8 discusses implications.

Chapter 1. Introduction. An introduction to the study, including the project context; background information about the AKAM-PDC and its outreach programs, including the professional learning networks; a review of the literature on professional networks in education; and the research questions.

Chapter 2. Methodology. A description of the research design and methods of data collection and analysis for the study, including document analysis, individual interviews, focus group interviews, observations of professional network meetings, and classroom observations.

Chapter 3. PLN goals, participants and activities. The findings draw from interviews and focus groups with PLN members and other stakeholders, from documents and records that describe the PLNs and their work, and from observations of PLN cluster meetings.

Chapter 4. PLN Leadership. Findings about leadership and management of the PLNs at the association and cluster levels. The findings draw from interviews with PLN leaders and members, interviews with PDC trainers, and from observations of network meetings.

Chapter 5. PLN Participant Outcomes. Evidence of impact on PLN members professional expertise and professionalism. The findings draw from personal interviews with PLN teachers and head teachers; interviews with PLN teachers whose classrooms we observed and with the head teachers in their schools; and our classroom observations of PLN teachers and comparison teachers.

Chapter 6. PLN School Context and Effects. Findings about the organizational context (e.g., head teacher support) and the perceived student learning impact of the PLNs at the classroom and school levels as reported in interviews with PLN teachers and head teacher members.

Chapter 7. System Context and Sustainability. Findings concerning school system influences on the PLNs, as well as on factors internal to the PLNs that affect their sustainability. The findings draw from interviews and focus groups with PLN members, and from interviews with AKAM-PDC leaders and education authorities from Mombasa and Kwale Counties.

Chapter 8. Reflections and Recommendations. A discussion of implications for policy and the work of the PLNs arising from the findings of this investigation.

Chapter 2

Research Design and Methods

2.0 Introduction

The broad purpose of this study is to find out what lessons can be drawn from the experiences of the professional organizations working to establish and support the development and implementation of professional learning networks as a strategy for continuous growth and improvement in teacher and head teacher practice as it relates to student learning. The research design was guided by a conceptual framework keyed to the major research questions that appears in Appendix 1.

2.1.0 Research Design

This study followed a multi-method qualitative research design. Field data were gathered in Kenya, including local documents (plans, records, reports) concerning the four PLNs and their activities, individual and focus group interviews with PLN members and other stakeholders, observation of PLN meetings, and observation of teaching and learning in a sample of classrooms in participating schools. The original design for the study included a social network survey of PLN members concerning professional advice seeking and giving in their networks. While a draft survey was developed and administered, methodological concerns about the reliability of the survey tool, and the limited time for refinement of the survey tool and administration process, led to a decision to abandon that component of the investigation. We also conducted a review of the literature concerning professional learning networks in education that informed the original research proposal and design, as well as analysis of the findings.

The investigation was implemented in four phases. Phase 1 included instrument development and planning for field visits to Kenya. Phase 2 consisted of three two-week data collection trips to Mombasa and Kwale between March and September 2016 by the University of Toronto research team. During Phase 3 (October 2016-February 2017), the interview, observation and document data were organized and subjected to preliminary analysis. The analysis was completed, the technical report produced and the findings presented to the funders, participants and other local stakeholders in Phase 4 (March-June 2017).

2.2.0 Data Collection Methods and Process

2.2.1 Document collection

We gathered three types of documents as follows.

- Descriptions and reports on the history and activities of the PLNs obtained from AKAM-PDC
- Attendance records for PLN monthly meetings for 2015 and 2016
- Minutes of PLN monthly meetings and a sample of cluster meetings (for the clusters observed)

The historical documents provided information on the origins and intended purpose of the PLNs, and their growth in membership over time (see Chapters 1 and 3). Attendance records were used to calculate the number of "active" and "inactive" PLN members (section 3.2.0). The minutes provided data on the PLN meeting topics and activities to triangulate with the interview and observation data (section 3.3.0).

2.2.2 Individual interviews

We conducted 83 individual interviews with PLN members and leaders, the AKAM-PDC team that supports the PLNs, and a sample of external stakeholders (education authorities from Mombasa and Kwale Counties and the Aga Khan Foundation). We also conducted school-based interviews in 12 Mombasa schools with a sample of PLN English and mathematics teachers and comparison teachers whose classrooms we observed, and with head teachers in those schools. Some of those teachers and head teachers had been previously interviewed in the PLN leader and cluster member interviews. In order to achieve a comparable interview sample across the PLNs, we invited cluster heads and two members from each of the 11 PLN clusters observed for interviews. We contacted other cluster heads directly for interviews, as well as executive members of each PLN. Not all those invited agreed to be interviewed or showed up at scheduled interviews. Table 2.0 reports the achieved individual interview sample.

Table 2.0 Individual Interview Sample

Table 2.0 Individual Interview Sample					
	ELTA	**MTA**	**MELA**	**KELG**	**Other**
PLN Executive	1	1	2	1	
Cluster Leader	3	2	3	2	
Cluster Member	3	5	3	6	
School Head					11
Classroom Teacher	6	6			11
PDC					5
External Stakeholder					12

The interview guides were aligned with the research questions and conceptual framework, though the questions were tailored to specific role groups within the PLNs or external context (interview guides, Appendix 2). External stakeholder interviews included County Education Directors and/or Assistant Directors and Curriculum Support Officers from Mombasa and Kwale Counties. We also interviewed an Aga Khan Foundation official familiar with the PLNs and school improvement activities in the region.

Individual interviews with PLN leaders and members, the AKAM-PDC team, and in conjunction with the in-school classroom observations were conducted during the March and July site visits. The external stakeholder interviews and focus groups (see below) were conducted during the September site visit. A majority of the interviews were conducted by members of the University of Toronto team. PDC trainers did the classroom teacher interviews for teachers whom they observed. The interviews generally varied from one to two hours. The interviewers took notes and digitally recorded the interviews. Following the interviews, participant responses to questions were paraphrased to capture the key points by listening to the recordings and reviewing and amending the original notes. These partial transcripts were entered into a qualitative data analysis data base (NVIVO) for purposes of analysis. Participant attributes were

recorded for each interview (e.g., PLN affiliation, role, gender, graduation for PLES training at AKAM-PDC, professional experience) to enable different types of comparisons in responses.

The interview data were analyzed in three steps. First, we developed a list of "codes" aligned to the interview questions and conceptual framework. This system was applied as a set of auto-codes to all the transcripts, so that responses to any code (e.g., PLN goals, cluster activities, cluster leadership, impact on professional practice) could be called up across the entire corpus of interview data, and the sources identified by role group or other participant attributes. Second, we generated data reports of interview responses from the auto-codes for the key research questions and topics of interest, and subjected these to a second round of inductive coding that would capture the empirical findings for selected topics (e.g., PLN goals, cluster meeting topics, cluster meeting activities, cluster leader duties, member motivation, impact on professional practice and commitment, PLN sustainability). Third, once a comprehensive set of inductive codes for the auto-coded topic was developed, these were applied to the interview data for that topic, and further data reports were generated within those inductive code categories. These data provided the empirical basis for the interview findings summarized and illustrated in this report.

2.2.3 Focus group interviews

During the final site visit we conducted focus group interviews with six to eight members of each PLN.[2] We deliberately recruited participants from the PLNs who had not been previously interviewed in order to generate fresh perspectives on the topics and questions posed. The focus group interview topics and questions were derived from preliminary analysis of the individual interview data in order to probe some areas of interest in greater depth and to generate comparative comments among participants in the groups (focus group interview guides, Appendix 3).

We attempted to recruit two additional focus groups (one teacher group, one school leader group) that would represent the views and experiences of 'non-active' PLN members. Names of graduates of the teacher and school leader PLES programs who were not currently active in PLN meetings were suggested by the PLN executives. We selected a sample of non-active members from these lists and invited them to take part in the focus groups. The University of Toronto team contacted these people independently and arrangements were made to hold the focus groups at our hotel, rather than at the PDC, in order to ensure the participants of the confidentiality of the focus group interviews. We were unsuccessful in recruiting non-active members of MELA or KELG to the non-active school leader focus group. Four teachers took part in the non-active teacher (ELTA and MTA combined) focus group. Those who came actually did not perceive themselves as "non-active" members of their respective PLNs. The focus group interviews were digitally recorded. The responses to the focus group questions were summarized from the recordings. For selected topics and findings in the report generated from the individual interviews and observations, related focus group data were reviewed to confirm, disconfirm, or add insight to the initial analysis.

[2] Because of conflicting demands on the time of Mombasa school heads to take part in important County level training for a new teacher supervision policy and procedures, it was not feasible to carry out the MELA focus group

2.2.4 Observation of PLN meetings

The University of Toronto research team observed and took field notes of 11 PLN cluster meetings and eight PLN monthly meetings as charted in Table 2.1. Notes from cluster meeting observations were summarized on reporting forms keyed to the research questions and conceptual framework (Appendix 4) to triangulate with interview and document data findings in relevant sections of the report (section 3.3.0).

Table 2.1 PLN Meeting Observation Records

Table 2.1. PLN Meeting Observation Records				
	ELTA	**MTA**	**MELA**	**KELG**
Cluster meetings	Mbaraki (March 8) Kisauni (March 10) Central (July 15)	Serani (March 8) Magongo (March 11)	Likoni (March 10) Mvita (March 10) Changamwe (March 15)	Mikongani (March 9) Diani (March 16) Tsimba Twi (March 17)
Monthly meetings	March 19 September	March 19 September	March 19 September	March 19 September

Given the number of PLN clusters, it was not feasible to observe them all (though we did seek interviews with all cluster heads, and included members of clusters not observed in the focus groups). We observed an additional MTA meeting in the September visit; however, the meeting was short, poorly attended and only convened for our visit, rather than with a normal agenda. Data from that meeting are not included in the analysis. Our sample included 3 of 5 ELTA, 2 of 3 MTA, 3 of 6 MELA, and 3 of 5 KELG clusters.

2.2.5 Classroom observation

We sought to complement and corroborate the interview data on classroom practices of ELTA and MTA teachers with observations in a small sample of classrooms. The classroom observation component of the study was designed with the dual purpose of developing a new classroom observation tool (COT) for future use by faculty in the AKAM-PLES (Professional Learning for Educators) programs at AKAM-PDC and of contributing in a modest way to the PLN research study. The COT was developed by the University of Toronto team with the PDC faculty. Development of the COT involved a review of several classroom assessment tools that PDC staff had been using to assess classroom teaching and learning; of teaching and learning methods emphasized in PLES training programs for mathematics and English teachers; and of several comparable classroom observation tools employed in other contexts[3].

The new COT was designed intentionally to align with the expectations for teaching and learning methodologies emphasized in the PLES training programs, rather than being based on some generic

[3] AKAM-PDC staff had been using several versions of classroom observation tools, including: *Classroom Observations (PLES:PTE); AKAM-PDC Classroom Observation Tool 2016*; *AKAM-PDC Rubric for Classroom Teaching & Learning Assessment Tool.* The first document was being used in the Program for Teachers of English (PTE) and the second two documents were both being used in the Program for Teachers of Mathematics (PTM). We also reviewed a *Mathematics Lesson Observation Tool* from the AKU-Institute for Educational Development in Tanzania and two other observation checklists from the literature which had been developed to assess *activity-based/active-learning* and *child-centred teaching approaches*: Anderson & Nderitu (1999) and Park (2012).

model of pedagogy that would only haphazardly be coherent with what the PLN teachers were taught in the programs. In keeping with the specific goals of this research project and the PLES programs, we wanted to ensure that we included components and dimensions of teaching practices which:

- had been included in both the PLES training and in the on-going activities of the PLNs;
- would help us to compare what we were hearing from participants about their *professional practice outcomes* with what we *observed in their teaching*;
- *w*ould help the PDC faculty to see what areas of the PLES training and PLN activities were being successfully implemented and would help to inform future changes in both PLES course design and recommendations for future PLN activities.

The development and design of the COT was modelled on guidelines for constructing tools for mapping and assessing changes in instructional practices associated with a component of the Concerns Based Adoption Model referred to as Innovation Configurations (Hall & Hord, 2014).

The pilot version of the tool became a three-part document (see Appendix 5): COT rubric and rating scale; COT observation guide for anecdotal comments by assessors; and a form for teacher/student background information. The COT has four major parts with related sub-components: Part 1-Creating the Classroom Environment, Classroom Management (child friendly climate; teacher interest; gender responsive recognition of student participation; gender responsive classroom management skills; lesson pace/timing); Part 2-Instructional and Assessment Strategies (A-Demonstration, Explanation; B-Inclusion and Differentiated Instruction; C-Learner Engagement & Questioning Strategies; and D-Diagnostic and Formative Assessment); and, Part 3-Use of Instructional Resources (gender responsive; culturally relevant and appropriate learning materials; wide variety and use of learning materials; use of technology to support learning). The COT Scoring Rubric includes descriptors arranged from unsatisfactory to ideal on a four-point scale (4=excellent; 3=good; 2=fair; 1=unsatisfactory; and N/A not applicable), and a Scoring Guide to be completed after the observation. Not applicable might apply in settings where no technology resources are available, at least during the lesson observed. The direct observation tool allows assessors to make anecdotal observations about the same components of teaching practice during the observation.

The COT instruments are designed to assess teacher implementation of generic teaching and learning strategies and can be applied across subject areas. They are not designed as subject specific tools. Thus, the same observation tool can be used with teachers of English, mathematics, and other subject areas. In acknowledging the importance of how gender matters were being addressed within the study, gender in education specialists from both AKAM-PDC and the University of Toronto teams reviewed the COT instrument to ensure gender-responsive items and language, and the teacher observation sampling plan. Most of the ELTA and MTA members are female. While we made an effort to recruit a balanced number of male and female participants, the achieved sample ended up being nine females and three males.

The plan was to conduct classroom observations and follow-up interviews in a sample of six ELTA, six MTA, and twelve other English and mathematics teachers in the same schools who are not members of the networks and who were not enrolled in the English and mathematics PLES programs. The comparison group participants were recruited from a roster of teachers who were participating in a discussion group forum organized and facilitated by PDC faculty, referred to as the CDF program (hence, they had limited

exposure to formal training in the instructional methods emphasized in the programs). The draft COT instrument and process were piloted with four teachers (one ELTA and one CDF teacher; one MTA and one CDF teacher) in two schools. The process was replicated with five additional ELTA/CDF teacher pairs and five MTA/CDF teachers. Since no modifications were made to the instrument after the pilot exercise, those data are included in the findings in this report. Thus, the final classroom observation sample included six ELTA, six MTA, and 12 CDF teachers distributed among twelve schools and across three clusters within each network. Four PDC faculty were involved in piloting the instruments[4]. The remaining observations were conducted by the University of Toronto team during the July site visit.

We acknowledge some basic limitations to the classroom observation method and sample. First, because of the small sample size and the fact that due to time and research personnel constraints, each teacher was observed for only one lesson rather than multiple times. Second, with multiple researchers/assessors involved in the assessment of 24 participants, the reliability of the COT could have been strengthened by a more extensive piloting and collective debriefing process. Third, in retrospect and for future use, we recognized that for a more controlled assessment of PLN effects on teaching methods (after the initial PLES training), the most appropriate comparison group would be active versus trained but non-active teacher network members, with baseline measures obtained at the time of graduation from the PLES programs. The purpose of developing the COT instrument, however, was not just for the research, but also to provide the PDC teaching staff with a new tool for baseline and continuous assessment of the English and mathematics program impact on teaching. With that in mind, the entire 24 person sample might be more appropriately viewed as a pilot phase in the creation and future use of the new COT.

[4] The involvement of AKAM-PDC faculty in the classroom observations was not seen to be a conflict of interest as there was no employer/employee dynamic that would signal an inherently problematic/unbalanced power relation between the groups. Indeed, the spirit and process of the Professional Learning Network approach entails teachers/participants self-selecting to be involved and this includes freely consenting to engage in critical self-reflective practices. We therefore believed that having PDC trainers observe PLN members or CDF participants in their classrooms would be perceived and experienced as an extension of their regular participation in the PLN or CDF programs.

Chapter 3

PLN Goals, Participants and Activities

RQ1. What activities do teachers and head teachers participating in professional learning networks engage in?

This chapter reports and discusses findings about PLN goals, participants and activities at the school cluster and association levels. The findings draw from interviews and focus groups with PLN members and other stakeholders (AKAM-PDC staff, external stakeholders), PDC documents that describe the PLNs and their work, PLN records (e.g., attendance at meetings, minutes of meetings, social media), and our observations of meetings at the cluster and association levels.

3.1.0 PLN Goals

An internal document from the AKAM-PDC describes the initial goals for the PLNs as follows:

> "The PLNs were created by the PDC with the objective of : 1) providing an opportunity for the Professional Learning for Educators Series (PLES) alumni to continue engaging and bonding long after graduation; 2) providing an opportunity for the alumni to share experiences of their practices; 3) enhancing sustainability of practices that they learned during the PLES sessions, compare what works, how it works to theory and contextual innovations; 4) for the alumni to support each other as well as find support from the PDC whenever required and whenever possible; 5) engaging in research based, best practices emerging from the continuous learning processes and engagements."

Some key points to highlight from this statement about the inception of the PLNs are the limits on membership to alumni of the PDC certificate programs, the hope that PLN participation would support member efforts to implement and contextualize practices they learned in their programs in their work in schools and classrooms, the expectation that PLN members would reinforce and continue their professional learning through sharing of experiences from their schools and classrooms, and the expectation that the PLNs would act as sustainable support groups for members.

Our interviews with active PLN members from all associations both affirmed and extended these goals. Responses to a question about PLN goals clustered into three broad themes:

- build a professional network of learning and support;
- build and apply professional knowledge and skills;
- support change and improvement in student learning.

The goals communicated by PLN members emphasized not merely mutual support and sharing of ideas and experiences, but also joint problem solving and solution finding for identified challenges in the classroom and school. They also spoke about the intended benefits for student learning of their

participation in PLN activities, and the extension of their learning to other colleagues and schools. In these ways, they expressed more ambitious goals for their networks than those in the PDC statement.

3.1.1 Professional network of learning and support

Build a professional network of learning and support was the most highly referenced theme (27 sources) across all associations in response to questions about PLN goals (Table 3.0). Of four associated sub-themes, three (sharing-27 sources), solving problems (20 sources), and mutual support (14 sources) are highly inter-connected. PLN members claimed that important learning can be gained from sharing successes, strengths and ideas. Sharing opens up the possibility of learning about alternatives to current practices in one's classroom and school. About half of those naming this goal (12 sources) said it was also important to talk about challenges they face in their classrooms and schools, as a dimension of sharing with other PLN members.

Table 3.0 PLN Goals
Build a professional network of learning and support

	Teacher Associations		**School Leader Associations**	
	ELTA	**MTA**	**MELA**	**KELG**
Share ideas & challenges	I understood that we were to share what we have been doing in our schools. Every time you meet you have something to share. Something to learn.[5] (ELTA-T2)	Share ideas in any areas that others might not be good at. Work together as a team. (MTA-T7)	Share ideas with other members. Share ideas and challenges. (MELA-EL5)	The regular meetings allow us to get in touch with other colleagues to share experiences and challenges and learn from each other. (KELG-EL1)
Solve problems	To find solutions to challenges we face as English teachers and engage in teamwork. (ELTA-T4) We discuss the challenges that we face ourselves as teachers…and come up with solutions. (ELTA-T1)	We come up with solutions. Even now, those with 100 kids, we manage. We come up with different tactics. (MTA-T8)	One is to help the cluster to sit together and look at the problems that are facing all the schools in the cluster and find ways to solve these problems. (MELA-EL3)	To identify our challenges and see how we can overcome the challenges. There are often common challenges. We sit together and figure out how we can improve our schools. (KELG-EL9)
Mutual support	It supports us with materials, with knowledge, skills, new ideas…the network effect. (ELTA-T3)	To maintain unity and to continually review what we were taught in the PLES. (MTA-T3) After graduation it was easier to continue the learning because it was more about applying our learning and then remind each other. With adult learning it's very easy to forget what we have learned. So at the cluster	MELA is to keep us together… those people that have come to AKAM. We want to be together and extend to others. We work as a group. (MELA-EL10) The goal of MELA is to bring head teachers together as a team so that we are all equal. We share ideas and encourage one another	When we meet we try to remind each other. We try to apply what we learned from AKAM. (KELG-EL4) The main role of KELG is to bring the head teachers together to share our challenges and successes in order to improve Kwale County… and to support and mentor each other. We decided

[5] The illustrations provided are paraphrased from our interview notes may not be exact verbatim quotes. The interview sources are anonymously coded by network group as noted in parenthesis after each excerpt.

Table 3.0 PLN Goals Build a professional network of learning and support				
	Teacher Associations		**School Leader Associations**	
	ELTA	**MTA**	**MELA**	**KELG**
		meetings we remind each other what we learned (MTA-T5)	in the schools. (MELA-EL7)	to form our own organization. That it would be good to have a group to keep us together. (KELG-EL3)
Outreach to others	We also conduct workshops in our various schools, especially in our subject areas and we teach fellow teachers who are not members of ELTA (ELTA-T3)	"We also come together as resource teachers. We go to other schools in our cluster as resource teachers to share our individual expertise with others in areas such as materials development." (MTA-T7)		

Identifying 'challenges' of practice is one thing. Solving them is another. Many of the sources (20) talked about the value of problem solving on common areas of concern with colleagues in similar positions both within and across clusters in their PLNs. Overall, some respondents from all PLNs (14) emphasized that the experience of mutual support among colleagues helped to maintain unity and to promote the sustainability of the networks, as well as the learning from their training programs. Elsewhere in this report (section 4.1.0) we provide evidence that PLN members, at least from the teacher groups, view mutual support not just in terms of professional matters but also of the welfare of members. Finally, within this broad theme of building a professional network of learning and support, some respondents (10) spoke about the goal of PLN members acting as resource teachers within and across clusters, as well with teachers and school leaders in schools outside of the PLNs.

3.1.2. Professional knowledge and skill

For the thematic goal to "build and apply professional knowledge and skill", there was an obvious and logical difference between comments from the two subject-based teachers PLNs and from the leadership PLNs (Table 3.1). Members of the teacher PLNs emphasized growth in their teaching knowledge, skills and attitudes; school leaders highlighted the development of leadership and management knowledge and skills as a goal of their PLNs. A few school leaders mentioned teacher development as a focus and goal of work in the school leader networks, as well.

Table 3.1 PLN Goals Build and apply professional knowledge and skills				
	Teacher Associations		**School Leader Associations**	
	ELTA	**MTA**	**MELA**	**KELG**
Teaching knowledge and skills	To help teachers to use appropriate methods to facilitate teaching activities in the classroom (ELTA-T6) The main goal is professional growth, to	To empower teachers with the knowledge and skills of teaching math, and also making it easier for the teachers to handle the lesson since math is one of the main	One is to unite teachers and help them develop professionally. They engage with one another and they learn from one another. It is a forum for continuous learning. (MELA-EL6)	

	help us grow professionally as teachers (ELTA-T5) To pass our knowledge to learners in the simplest way so that the learners can get the skills and knowledge and they find it more enjoyable to learn. It's learner centered. (ELTA-T2)	subjects required in our day-to-day life. (MTA-T2)		
Leadership and management knowledge and skills	To encourage teachers …When you go back to school we try to get the teachers together in our working area. We try to make teachers leaders wherever they're working , (ELTA-T12)		One is to enhance professional development for head teachers, deputies and senior teachers (MELA-EL4) At MELA it would also be professional development of teachers… improving leadership. (MELA-EL8)	To empower the head teacher by giving the knowledge and necessary skills for management. (KELG-EL5) There are things you need to know as a leader. Now I know. How to deal with all the different people. I learn how to accommodate them. (KELG-EL4)

Teachers from ELTA and MTA (12) spoke not just about PLN support for implementing specific pedagogical knowledge and skills learned in their training, but also about the broader aim of promoting acceptance and use of learner-centered teaching approaches. They mentioned ideas and strategies such as use of learning materials, making learning easy and fun for students, and using both individual and small group teaching methods. Some MTA teachers (3) identified change in student and teacher attitudes towards teaching and learning of mathematics as one goal of their PLN.

Members of the two head teacher associations (5) spoke about the development of leadership and management knowledge and skills as a PLN goal, though there was no consensus on the specific focuses of development. Key focuses mentioned included school management (e.g., human resources), curriculum or instructional leadership, action research, and a sense of efficacy to perform their roles. Some participants in both the teacher and head teacher groups included teacher leadership as one of the goals of their work in the PLNs and in their schools.

3.1.3 Change and improvement in student learning

PLN members from all the networks signaled improving academic performance as a key goal of PLN membership and activity. Some leaders referred as well to improvements in specific areas of school development that impact on student performance (facilities and resources, quality of teaching).

Table 3.2 PLN Goals Support change and improvement in student learning				
	Teacher Associations		**School Leader Associations**	
	ELTA	**MTA**	**MELA**	**KELG**
Academic performance	To work with fellow English teachers to improve the English standards in our schools. (ELTA-T4) To impact the learners positively, because the learners are our core business at the school. Use the right teaching and learning methods and the right resources. (ELTA-T5)	There was mass failing in math across the country. Since the AKAM had been supporting teachers in other subjects, they extended it to math. That was the core objective. (MTA-T8)	Improving student performance… increasing teacher performance, leadership development. Come up with plans on what we would like to see improvement in. (MELA-8) We share ideas and encourage one another. It is all about performance, making schools child friendly (MELA-E7)	Improve the academic performance in our schools. Improve the infrastructure. (KELG-EL7) We were concerned about the performance of our schools. And when we realized that English was the main problem, we had to sit and strategize for improvement. (KELG-EL4)
Student-centered learning	Improve our schools… So that students find it enjoyable to learn. (ELTA-T2) AKAM told us that they were going to teach us more methods on how we can teacher to help students enjoy and understand math. And how we can attend best to each and every child rather than teaching them as a class. (ELTA-T3)	To help our learners. It is more to impart teachers with knowledge that will help our learners be able to use cognitively guided instruction and also develop materials that are more three dimensional. It is to transform the attitudes of teachers toward math. (MTA-T4)		
Use of learning materials	To enrich leaners …We created learning aids with locally available materials. (ELGA-T6)	We come together and make materials so teachers can take them back to their schools for students to use. (MTA-T7)		

In addition to improved academic results, English and mathematics teachers talked about the pedagogical goal of engaging students in more learner-centered activities, including the use of learning materials. This echoes the teacher development goals previously mentioned.

3.2.0 PLN Participants

Graduates of the four AKAM-PDC Professional Learning for Educators Series (PLES) programs are automatically granted membership in their respective school leader and teacher associations/PLNs. That does not mean that all become or remain active members, so it is difficult to obtain an accurate picture of who actually belongs to the PLNs. Table 3.3 provides a statistical picture of the potential membership in each PLN derived from a data base of course participants in the various programs.

	Table 3.3 PLES Course Participants			
Cohort year	ELTA	MTA	MELA	KELG
2010	23		26	
2011	21		34	
2012	24			25
2013	29			26
2014	35	32	22	
2015	24	36	26	
TOTAL	*156*	*68*	*108*	*51*
Women	142	64	61	18
Men	14	4	47	33
Schools	84	40	84	48

The data base also provided information about participant characteristics. It shows that participation in the teacher programs is largely female, which reflects the demographics for urban primary schools in Mombasa. For the two school leader programs, the gender distribution is different for urban and rural contexts. Males predominate in the rural county of Kwale, representing about 2/3 of the total. The male-female distribution of head teachers in Mombasa is the inverse, with females outnumbering males two to one. These data also provide a general sense of the number of schools reached by the programs for each association. Some schools employ alumni from various programs, so the number of schools is less than the number of participants.

Two other data sources provide a more realistic picture of active membership in the PLNs during 2016, the year of this study. We recovered records of PLN attendance at monthly association and cluster meetings from September 2015 to July 2016. From these data we were able to create a roster of all members who had attended at least one meeting (monthly or cluster). These raw numbers of active members are displayed in Table 3.4, as well as the percentage of PDC alumni who could potentially be active members (see Table 3.3).

	Table 3.4 Active PLN Members 2015-2016			
	ELTA	MTA	MELA	KELG
TOTAL	77 *(49% n=156)*	60 *(88% n=68)*	53 *(49% n=108)*	49 *(96% n=51)*
Women	73	57	38	17
Men	4	3	17	43
Schools	48*	33**	42***	46****

*17 schools list 2-4 teachers as active members; one additional member is a teachers college tutor

** 18 schools list 2-4 teachers as members

*** 7 schools list 2-3 members (e.g., head teacher, deputy heads); 2 additional County Government officials listed as members

**** 2 schools list more than one school leader (e.g., a head teacher and deputy head)

The total number of schools (46) with active alumni in Kwale County is roughly equivalent to the KELG membership as shown, since Kwale has only benefitted from the school leader program.[6]

[6] The Aga Khan University Institute for Educational Development (East Africa) is based in Dar es Saalam (Tanzania). The IED-EA implements a variety of teacher development initiatives that include participation of rural

Since there are often more than one PLN alumni from the different programs in Mombasa County schools (Table 3.5), the exact count of schools represented by active members cannot be derived from adding schools across the teacher and school leader associations. Based on the 2015-16 PLN

Table 3.5 Concentrations of PLN Members in Mombasa Schools					
H/T+ELTA+MTA	H/T+ELTA or MTA	ELTA + MTA (no H/T)	ELTA or MTA multiple (no H/T)	Multiple H/T's no teachers	H/T,ELTA or MTA single member
11 schools	16 schools	7 schools	4 schools	2 schools	31 schools

meeting attendance records, the overall number of primary schools served by active PLN members from the different associations in Mombasa County during 2015-2016 was71 schools. In recent years, the PDC has deliberately tried to increase the "concentration" of program alumni in primary schools in order to promote within-school collaboration between teachers and head teachers, and to strengthen the overall prospect for wider and deeper impact in participating schools. Table 3.5 provides a snapshot of the relative concentration of head teacher, English teacher, and mathematics teacher alumni in participating schools in Mombasa County. These numbers do not take into account annual changes in school staffing due to transfers, retirements, deaths and other reasons.

3.2.1 PLN member attendance

The monthly and cluster meeting attendance records (Table 3.4) provide a general picture of participation in the PLNs. Of course, not all members take part in all meetings and activities of the PLNs. However, among those identified as active members, participation seems fairly continuous. Only a minority attended a single meeting over the one year time period sampled.

In our interviews and focus groups we asked PLN members about their own participation in PLN meetings and activities, as well as factors affecting their own and their peers' participation. PLN members and PDC patrons reported challenges to participation in PLN meetings that clustered in four major categories: workload, scheduling, distance and transport, and personal issues (e.g., health) as illustrated in Table 3.6. The responses were fairly consistent across the PLN groups. Differences were more salient between teacher and head teacher PLNs than PLN specific.

Table 3.6 Challenges to Participation in PLN Meetings		
Challenges	**Teacher PLNs (ELTA, MTA)**	**School leader PLNs (MELA, KELG)**
Workload	One [obstacle] is time. Sometimes it's challenging because I work in a busy institution and the schedule can be busy. Other meetings are scheduled and they overlap. Last-minute meetings – I can't plan my time. So time is the biggest obstacle (MTA-T5)	Things come up sometimes. It's about work. Sometimes you're so busy here you can't even make it. You're squeezing. Sometimes you have to leave the school and go. Too much work. Sometimes we're affected by activities. Sometimes you want to go, but there is another

schools in Kwale. AKAM-PDC does not duplicate these efforts, but it does deliver its school leader program. Our study did not investigate the interaction between these different but complementary AKDN school improvement initiatives.

Table 3.6 Challenges to Participation in PLN Meetings		
Challenges	**Teacher PLNs (ELTA, MTA)**	**School leader PLNs (MELA, KELG)**
		meeting and you have to prioritize. (KELG-EL4)
Scheduling	Time [is a challenge]. Sometimes you have to meet on weekdays and some of these meeting are during the school day and teachers are supposed to be in their classrooms. If you don't have a substitute teacher, you cannot leave those children alone in the classroom. So if there isn't extra manpower in the school, the teacher will be hindered. Also, you need the support of your head teacher. (MTA-T1)	Overlapping activities [are a challenge]. The overlaps come from activities being scheduled by the Ministry and/or by the TSC. So sometimes we may plan to hold our meeting on a certain date, but later on we learn that there is another activity that has been planned by either the Ministry or the TSC, without a lot of advanced notice. So we cannot hold our meeting.(KELG-EL6)
Personal issues	Most members attend. One exception – in her cluster they used to have six members, but one has dropped because she is ill. If she can come, she will, but she doesn't attend regularly. (MTA-T5)	Of the two members that are not very active, one is not in good health; he is suffering from diabetes and is in hospital. (KELG-EL6)
Distance and transport	Some [cluster members] might become inactive because of distance…people are motivated by different things. Like by what they learn, they might be motivated by the allowance they get, other might be motivated by the location of the meeting. Some that have to come far, they might want to come, but can't. So it makes them to be inactive. (MTA-T5)	Mode of transport [explains how difficult it was for him to get to the interview, costs, convenience, etc.]. So what we've decided is that we'll meet at different schools in the cluster. We can see and learn from the different environments we work in. (KELG-EL2)

The responses pertain more to monthly PLN school cluster meeting attendance during the week than whole group meetings on Saturdays. Workload was referenced by the greatest number (12 sources) of sources as a challenge to participation in PLN meetings. Head teachers from both Mombasa and Kwale noted that at times they or their colleagues could not participate because they had to prioritize PLN work in relation to conflicting external demands on their time, such as Ministry and County government meetings, supervising teachers, and involvement in other groups (e.g., Kenya Primary School Heads Association KEPSHA). ELTA and MTA teachers cited workload challenges related to such things as extra teaching assignments, teacher appraisals, other school duties (creating schemes of work), and other education system meetings that they need to attend. Workload issues were more commonly named by women than men (the significance of this may simply reflect the greater number of females interviewed). The timing and scheduling conflicts (7 sources) between PLN activities and other school commitments is a related obstacle to participation, especially for teachers who have less control than heads over work time. Distance and transport to meeting sites (6 sources) were an issue and challenge, especially for the Kwale County head teachers. This is unsurprising given the rural context of the schools. Personal issues (e.g., illness) were cited by some respondents (5 sources) from both teacher and head teacher groups as an occasional obstacle to participation. In addition to these relatively common challenges to participation in PLN activities a couple of teachers spoke about lack of permission from school heads who were not PDC alumni and members of the school leader PLNs to leave schools on school time to attend cluster meetings at other schools. Three head teachers said

some of their alumni peers chose not to take part in PLNs because they did not see the value in "coming to share". The responses suggest that for those heads the opportunity costs of being active in the PLNs were not worth it because of workload or because they felt they had nothing more to learn and gain from professional interactions in their PLN.

We asked PLN members to talk about what motivated them to participate in PLN meetings and activities. The responses clustered into three broad categories: benefits to professional practice, benefits to professional attitudes, and economic benefits (Table 3.7). There was some variation across the PLNs associated with major role group (teachers vs. school leaders) and gender differences.

Table 3.7 Motivation to Participation in PLN Meetings

	Teacher PLNs (ELTA, MTA)	**School leader PLNs (MELA, KELG)**
BENEFITS TO PROFESSIONAL PRACTICE		
Problem solving	They [cluster members] feel it [cluster meetings] is very important, because whatever they get from the discussion, they say that it's been really helpful in their working stations. (ELTA-T1)	It's good when we discuss common problems and figure out how to resolve them. The schools in this area have similar problems. We don't want to see a HT having lots of problems unsupported. (KELG-EL-5)
Social capital/peer support	As group members, we are meant to be mentors of each other. So, in case I have a problem and I want a solution, we share it in the group and then we come up with a solution….teamwork… I find cluster meetings are a form of peer mentoring/peer teaching for ourselves…. it's also a way of addressing some of the challenges that you face in the classroom. It's a way of motivating one's self. If I have a problem in tackling a certain question in my class, then my peer can help me to come up with a solution….also because the cluster meetings are held at different schools and you get to go around and see what some of your peers are doing at their school…you see your friend's work…it helps to uplift our spirits! (MTA-T1)	I attend 100%. I go to the meetings to gain some new knowledge….even from sharing our challenges we gain new knowledge. Maybe there was a problem that we were having at our school and maybe one of our colleagues is having a similar issue and he shares his situation and we brainstorm together and then we come up with solutions. That's why I like attending those meetings. (KELG-EL-3)
Professional growth	The active members are those ones that have really benefited and see the fruits of it. Those that find that it's too taxing… they are not committed. Commitment comes when you see the future. (ELTA-T12)	I have seen how it [PLNs] works, and it's something that I value. When we go to the meetings, the exchanging of ideas and experiences allows me at the end of the day to be a step forward in my approaches… In our group every member is very active. And it is because we have seen it [participation in PLNs] to be doing a lot of good for us. After undergoing the AKAM studies, we

Table 3.7 Motivation to Participation in PLN Meetings		
	Teacher PLNs (ELTA, MTA)	**School leader PLNs (MELA, KELG)**
		observed what was happening, and to me as a person, I was finding that the PLN activities were doing more than the Ministry, or the employer himself was doing…. And so with the information that we have, we have decided to take it ourselves as an initiative.(KELG-EL2)
BENEFITS TO PROFESSIONAL ATTITUDES		
Sharing	When we meet, we normally share experiences. Sometimes we get motivated when we hear of someone's experience. So most of the time, it's that motivation that gets people to come together, to share experiences.(MTA-T6)	And if the cluster members … were not attending, we would call them and they would say 'Leave us alone, we are very tired'….but you see that work will not end, just because you have spared a few minutes to come to a MELA meeting….and it will actually become easier and more fun when you share challenges, solutions and ideas among the larger group.(MELA-EL7)
Mutual support/collegial relations	There are many factors that motivate me. I'll mention two. First, is the bond that I've developed with my cluster members. We've become friends and colleagues and I really feel that they are part of my life. If you don't attend, they'll call to see if you're okay. So there's that bond. (MTA-T5)	
Sense of efficacy & commitment	Magongo cluster members come because of the way we have made math to be fun…we sing different songs, we bring different kinds of games to help solve math problems. The members have *owned it*...they are all just asking *when is our next meeting*….they are very ready, I [the cluster leader] just give encouragement.(MTA-T7)	So we try to support them, as peers, assist one another. We have that belief – that we should be supporting one another. That we shouldn't wait for the MoE people to come and start asking questions. That we can help together. (KELG-EL5)
ECONOMIC BENEFITS		
Incentives	Also the funds for transportation and tea motivate members to come. (ELTA-T6)	People here are not economically stable, so I think the cup of tea, bottle of water, the fair, the reimbursement, this motivates. They get motivation from the school – I motivate my teachers with tea, they appreciate it. Also the reimbursement of the fare motivates them. (MELA-EL2)

The opportunity to find solutions to problems of practice was the most frequently cited benefit to professional practice (9 sources) motivating PLN participation. This is linked to the technical and

professional benefits of peer support or social capital (8 sources) that arise from professional interaction in the PLNs. Some PLN members talked of the motivational effects of ongoing professional growth associated with seeing positive results from implementing things derived from participation in PLN activities. Four respondents mentioned that PLN participation reinforced their use of practical skills introduced in training, such as lesson planning and strategic planning.

PLN members spoke about various attitudinal or affective dimensions of motivation to be active in the PLNs. Interestingly, they mentioned the benefits of sharing (8 sources) less in terms of the exchange of technical/professional know-how and problem solving, than in terms of emotional support (venting concerns, feeling valued). A few mentioned the sense of mutual support and belonging (e.g., friendship) associated with collegial relations in the PLN, including support for welfare issues, not just professional matters. Finally, participants across all groups (13 sources) talked about developing and reinforcing a stronger sense of professional efficacy and commitment to their work as teachers and school leaders as a factor motivating active PLN participation.

Participation in PLN cluster meetings and monthly association meetings is modestly incentivized with funding for transport and tea by the PDC for those who show up (attendance is recorded). Although some of the members interviewed mentioned these financial incentives, the primary motivating factors (4 sources) seemed to be the benefits to professional practice and professional attitudes cited. When asked what they did to motivate attendance, the cluster heads interviewed talked about calling people or sending messages over WhatsApp to remind members of meetings, schedules and venues. Timely reminders are no doubt important, though the members did not say this was a motivator.

The motivational benefits associated with professional attitudes seem to be an important dimension of why people become and remain active in the PLNs. It may be that the development of positive affective bonds and feelings are needed to enable open sharing of professional challenges and joint problem solving. Overall, female PLN members talked about the affective dimensions of motivation, such as sharing, collegial relations, sense of professional efficacy and commitment more than the males. While this is partially accounted for by the fact that there are more women in the interview samples for the two teacher PLNs, it could be that men and women have different expectations for and experiences in network meetings that heighten the perceived value of affective relationships. The data also suggest that the benefits to professional practice are experienced as tangible and continuous by the members, not a one-time event, and that this leads them to value active membership.

Earlier we described numerous challenges to attendance and participation in PLN cluster and whole group meetings, such as workload and conflict with other professional responsibilities, timing and scheduling, and distance and transport. Although modest financial incentives no doubt help and are valued, the primary motivators are the perceived benefits to professional practice and attitudes.

3.3.0 PLN Activities

What do PLN members do when they gather in monthly cluster groups and association level meetings? Data for this question are drawn mainly from our interviews with PLN members and PDC patrons, and from our observations of 11 cluster meetings and two sets of monthly association meetings. These findings are supplemented by follow-up data from the focus groups. First, we

examine evidence about the range of topics that members talk about when they meet. Second, we consider the kinds of activities that occur when they meet. We begin with the teacher PLNs, followed by the school leader PLNs. Observation of five of the six school leader meetings and four of the five teacher cluster meetings took place in March 2016. This occurred just prior to the annual conference at AKAM-PDC where the PLNs and their school cluster groups shared what they had been doing over the past year in a learning fair format for the mutual benefit of one another, of new PDC graduates, and interested external stakeholders. Part of the time and talk at several of the observed cluster meetings was devoted to planning these displays and presentations. That time might have been spent on other concerns had we observed additional meetings at other times of the school year.

3.3.1 Teacher cluster meeting topics

Teacher cluster meeting topics (interviews)

We asked what PLN members talk about in cluster meetings. Not surprisingly, teacher PLN members referred mainly to talk about teaching and learning methods in general and in their subject areas.

Table 3.8
Discussion Topics in Teacher Cluster Meetings (Interviews)

Topics	ELTA	MTA
Pedagogical practice	The daily challenges that we face teaching English. Challenges like teaching speaking. If there are areas/topics that you're not familiar with or don't know how to teach then we discuss them. ELTA-T5 (Cluster Member) We discuss about methods of teaching, dealing with large classes (how to help learners to learn a certain topic in a large class). ELTA-T6 (Cluster Leader) We also discuss how you can best use a variety of resources in a large class. This can vary with the skill level and knowledge of the teacher. So, we came up with different methods. ELTA-T6 (Cluster Leader) We also talk about grouping the children if you have few resources. We also talk about peer teaching, pairing the children, demonstrations by the teacher or have one of the children demonstrate. ELTA-T6 (Cluster Leader) This year we had a workshop on materials development. At another cluster meeting, we do a follow up to talk about how they used the materials and any challenges that teachers had. ELTA-T6 (Cluster Leader)	Mostly, tacking of different mathematical topics. The main one has been 'number values'. We had 10s and 1s; 1s and 10s; 100s….this has been a challenge for many of us. Another topic we've been working on is geometry, where many have had some challenges. Also if you have learners with different types of behaviors or learning challenges and you are having difficulty handling or teaching the student, teachers can bring this to the cluster meeting, as well, and we share ideas on how to teach or handle the student. MTA-T7 (Cluster Leader) Difficulty teaching certain lessons. Lack of materials. Large class size. MTA-T8 (Cluster Leader) Challenges and solutions with time-takers; peer teaching. MTA-T1 (Cluster Member)
Outreach	We also discuss how we can help teachers who are not in the ELTA program embrace such kind of programs.	We've talked about having a mentoring workshop. Share our learning with other teachers. Teachers from our own school,

Table 3.8 Discussion Topics in Teacher Cluster Meetings (Interviews)		
Topics	**ELTA**	**MTA**
	ELTA-T2 (Cluster Leader)	we are mentoring. MTA-T6 (Cluster Member) Workshops…for the teachers in the schools around the cluster schools. We want to start there. We will learn from the first workshop and then plan maybe in more schools after that. MTA-T4 (Cluster Member)
Class management	We discuss the behavior of children or the behaviors and misconducts of children during the lesson and how you can go about such problems during the lesson. ELTA-T2 (Cluster Leader)	We've talked about classroom management. Then we sat and came up with ways that we can manage our classrooms better. So after we meet, we give solutions and then when we meet again, we see what worked. MTA-T8 (Cluster Leader) Disciplining strategies...hyper children, aggressive children. MTA-T5 (Cluster Member)
English use	The other one is English speaking. We have Swahili spoken in the catchment area. When we try to implement English-speaking we have a rough time. The younger ones can communicate fluently in English, but the older ones struggle. They use the mother tongue. ELTA-T1 (Cluster Leader)	
Learning materials	We also discuss topics like material development, uses of material and how we can develop more. ELTA-T2 (Cluster Leader) We discuss about materials development. ELTA-T6 (Cluster Leader)	The most important is the material development, from KG to class 3. MTA-T3 (Cluster Member) One of the issues is material development. We discuss how to develop materials. MTA-T5 (Cluster Member)
Government policy	Last time we talked about the TUSOME program that the government has introduced. We feel that whatever we learned from PDC is whatever the teachers are getting from TUSOME. The TUSOME program is more teacher-centered. But the PDC is more child-centered. ELTA-T1 (Cluster Leader)	

We were surprised about the frequency that outreach to teachers and schools that have not taken part in AKAM-PDC courses was named as a topic of discussion. This is consistent with comments about PLN goals (section 3.1.0), and confirms the broader mission and sense of responsibility of PLN members to extend what they learned in their training and the benefits of the PLNs to other educators and learners in the education system. As illustrated later, talk about teaching methods, English language use, learning materials and parents was not exclusive to the teacher PLNs. In one ELTA cluster, teachers talked about the integration of teaching methods promoted in their training at the PDC with implementation of a government mandated early reading program.

Teacher cluster meeting topics (observations)

The interview data provide an anecdotal picture of what teachers talk about in their cluster meetings. The cluster observation data are more limited in scope, but are more specific and concrete. Two major topic categories were taken up in the five teacher cluster meetings observed.

- Classroom challenges for teaching and learning
- Outreach to other teachers (in-school, other schools)

The topics addressed in teacher cluster meetings mainly focused on classroom challenges related to teaching and learning in their subject areas. These data were consistent with classroom challenges mentioned in the interviews (pedagogical practice, classroom management, use of low cost materials, English language development). There was a notable difference between the MTA and ELTA meetings observed. The two MTA meetings were organized around a pre-determined focus of discussion and activity, and the participants adhered to that agenda. In one meeting the teachers shared and discussed their experiences with "time takers", students who persistently do not complete their classwork in the allotted time for math. The other MTA meeting was dedicated to sharing how to develop and use low cost teaching and learning aids for teaching number value.

In the three ELTA cluster meetings, participants named many classroom challenges affecting the teaching of English in primary school classrooms, including: improving small group work, teaching limited English speaking newcomers (students coming from nursery school, transfers from other public schools), student use of Swahili and Mother tongue in English class, improving reading performance and comprehension, writing composition, boys' handwriting, insufficient books and learning materials, difficulty implementing non-traditional teaching methods with large classes, and perceived pressure from government authorities to cover the curriculum versus student learning. There was, however, little sustained or deep discussion around the classroom challenges named.

Talk in the clusters about outreach to other teachers and educators in their own schools and in other schools occurred in each of the ELTA cluster meetings observed. Teachers brainstormed about possible outreach activities that cluster members could take together. One group considered organizing a gallery walk to demonstrate the use of low cost teaching and learning materials for their school heads and local education officials. The two others talked about going as a team to other schools to share and demonstrate their teaching methods to non-PLN teachers, such as small group work, use of teaching and learning materials, and teaching reading comprehension. While none of this talk led to definitive plans of action in those meetings, planning initiated in cluster meetings can extend beyond the face-to-face meetings. In our final visit, for example, we confirmed that the gallery walk mentioned above did take place. In one meeting, teachers discussed alternatives for organizing a future workshop for themselves. After considering various ideas, they settled on an introduction to an ICT program that one of the teachers had recently learned about. Another group revisited prior talk in the cluster about visiting each other's classrooms, but no decision was reached.

3.3.2 Teacher cluster meeting activities

What people talk about in cluster meetings is one thing. The activities that talk is embedded in is another. Here we review what teacher PLN members said in interviews when asked to describe cluster activity. We then compare this to our observations of the five teacher cluster meetings.

The interview data echo much of what has already been said about PLN goals and teacher cluster meeting topics. Sharing experiences and problem solving overlap. As will be illustrated in our cluster observation data, however, the act of sharing experiences and challenges can happen without any focused discussion about solutions or action plans for how to address those challenges.

Teacher cluster activity (interviews)

Table 3.9 Teacher Cluster Activity (interviews)

Activities	ELTA	MTA
***Sharing experiences* with teaching methods**	We share our experiences about teaching methods. (ELTA-T6) Sometimes we try to come up with materials or teaching aids and say 'So why don't you try it this way? What methods have you been using in grammar?' We exchange ideas. (ELTA-T3) Sometimes we mark compositions, group marking...We exchange. (ELTA-T3)	Most of the time we share our experiences. After sharing experiences we identify what the problem is. And then we see if we can chip in to solve the problem (e.g. large classes, lack of resources). (MTA-T6) Presentations of material use. Teachers bring a variety of locally available materials to show and share ideas. (MTA-T7)
***Joint problem solving* for challenges in the classroom**	We share our experiences with factors affecting teaching (limited materials, large classes, grouping, peer teaching, truancy, parent support, integration with TUSOME program mandated by government). (ELTA-T6) The daily challenges that we face teaching English. Challenges like teaching speaking. If there are areas or topics that you're not familiar with or don't know how to teach then we discuss them. (ELTA-T5) The four of us come up with an issue or a topic or problem and then we come up with a solution out of the problem. (ELTA-T3)	Teachers come up with problems that students are having difficulty understanding. We tackle it as a group and come up with strategies on how to introduce it and solve it. Also if you have learners with different types of behaviors or learning challenges, teachers can bring this to the cluster meeting, as well, and we share ideas on how to teach or handle the student. (MTA-T7) Tackling different mathematical topics. The main one has been 'number values'. This has been a challenge for many of us. Then we also have 'money value'…the topic of money. (MTA-T7) We've talked about classroom management. Then we sat and came up with ways that we can manage our classrooms better…When we meet again, we see what worked. (MTA-T8)
Developing teaching and learning materials	Sometimes we do material development. We decide and sit and develop materials for use. (ELTA-T2)	Materials development is done at each meeting for the first term (MTA-T8) Sometimes we prepare teaching materials for the class…Last year we made materials for numbers for lower primary learners. (MTA-T4)
Planning and implementing demonstration lessons/workshops	We could have a workshop where we sensitize other staff members who have not attended such kinds of program. We handle problems like large classes, how you can	Share our learning with other teachers. Teachers from our own school, we are mentoring. We've talked about having a mentoring workshop.(MTA-T6)

Table 3.9 Teacher Cluster Activity (interviews)		
Activities	**ELTA**	**MTA**
for other teachers	help students work cooperatively, teaching methods … how to develop materials. (ELTA-T2) Also we have workshops, like this year we had one on materials development. At another meeting we did a follow-up to talk about how they use the materials and any challenges that teachers had. (ELTA-T6) A while back we had a workshop where we sensitized our colleagues who teach English at (school name) primary school. We formed a team and facilitated for our colleagues there. (ELTA-T3)	We were thinking of having a workshop on 'Math is fun' next term. Mostly for teacher in schools around the cluster schools. If it's successful then plan maybe in more schools after that. (MTA-T4)
Planning for peer coaching visits	We visit colleagues to see how they're teaching and to give feedback, and then they observe me teaching to learn and to also give feedback. This term I have visited two teachers from the cluster for one lesson. (ELTA-T5) We've been doing peer teaching. I visited Madam M twice at her school. I visited Madam J, the teacher at (school name) school. I visited Madam A and she came to my school. (ELTA-T3)	We organized visiting other schools for peer observation…One time we went to (school name) public school. within our cluster, but none of us were from that school. We had heard about a teacher knew how to handle 'number values' really well, so we went to see how she did it. (MTA-T3) A teacher brought the issue of their classroom was too unwieldy and some teachers were selected to go that school. So we sat together, prepared the lesson the teacher was having trouble with and then we went and taught.(MTA-T8)
Socializing		End of meeting is used for social time—telling jokes and stories. We need to be friends. We want it to be a completely stress-free environment. (MTA-T8)

Teachers talked about planning as well as implementing workshops, classroom demonstrations, and peer visitation among cluster members and with other teachers and schools. It was not exactly clear whether workshops, demonstration activities, and peer visitation actually occurred during regularly scheduled cluster meeting times, or as a follow-up activity outside of the actual meetings. We note that teachers from MTA described visiting non-PLN teachers to learn about interesting practices, not simply to share and demonstrate their own professional knowledge and teaching methods. Although only mentioned by one teacher, in our cluster observations we did see that informal socializing among teacher cluster members was common, and likely significant to creating a sense of community. Because the MTA PLN had only been formally in existence for a year, some of their comments about cluster outreach activities and peer visitation were more prospective about things they hoped to do.

Teacher cluster activity (observations)

We observed five teacher cluster meetings (three ELTA, two MTA). Space does not permit a full presentation of all, and the sample is too small to generalize about cluster activities, especially for the specific clusters observed. We selected three that are illustrative of the kinds of activities that were observed. The vignettes and comments are not intended as critiques of the particular clusters. Our purpose is to use those observations as a point of comparison and confirmation of what was said in the

interviews, and as a point of reference for discussion about the potential and challenges for the optimal functioning of PLN networks as continuous processes for teacher learning and school improvement.

The first two vignettes provide an interesting contrast and deepen our insight into practical meaning of teacher sharing and problem solving about challenges of teaching and learning in their classrooms. In the vignettes participants are referred to by "F" for females and "M" for males.

MTA cluster meeting

The meeting took place in a vacant classroom at the host primary school from 2:15 to 3:15 in the afternoon. The concrete block and plaster room was clean, with open grates on the windows and circulating overhead fans. A set of wooden student desks were arranged in a semi-circle for the meeting attended by six female teachers. The cluster head sat in the middle with three teachers to the right and two to her left. She (F1) introduced the topic of today's meeting—'what to do about the problem of 'time takers?' The topic had been selected as a focus for discussion prior to the meeting. F1 starts off asking 'What is a time taker and who are they?' After listening to few opinions ('someone who is slow while others are finished' 'a student who is always behind in all things' 'time taking behaviors and causes differ'), FI invites the teachers to share their experiences with time takers, and solutions that they had tried. She invites others to help analyze the cases and to suggest alternative solutions. This prompts a lively discussion with different members sharing specific time taker cases, their causal analysis of the problems, and strategies used to help those students. All six teachers join in. The conversation is professionally focused but congenial, with spontaneous joking and laughter. F1 is soft spoken and does not overtly facilitate the discussion, but the participants remain on task throughout. Two members provide informal leadership intervening to bring closure to discussions of individual cases, and to summarize the variety of strategies proposed for dealing with time takers. The cluster secretary (F3) takes notes. Some of the solutions proposed are pedagogical ('peer teaching…team the slow boy with a clever boy'; 'make activities into play so they are learning but having fun'--with specific example given; 'assign different expectations for syllabus coverage to different students so they experience success'). Other solutions are directed towards psychosocial problems that they attribute to issues in the child's home environment (parental neglect, bullying), either by providing emotional support in the classroom ('energize him…tell him nice words…try to create good rapport so he will feel appreciated'; 'give him responsibilities…appreciate him') or by trying to involve the parents. F2 helps bring the discussion to closure by offering a synthesis of the different kinds of time taker problems and strategies discussed. The members briefly discuss dates and venues for their next meeting. F2 proposes that the agenda for the next meeting include follow-up reports from each teacher concerning the time taker students discussed, as well as a more general 'reflection' on the cluster work over the term. The meeting closed with a prayer led by F2.

ELTA cluster meeting

The meeting takes place in an empty classroom from 3:15pm to 4:45pm. The room is clean but aging, with plastered concrete walls, windows with open grates and overhead fans. The meeting is attended by five female primary school English teachers. Individual student desks were arranged in a semi-circle for the meeting. The cluster head (F1) sat in the middle. A four item agenda is posted on wall chart paper. FI reads the agenda items out loud. There is no stated purpose for the meeting other than to talk about each item. F1 manages the conversation, deciding when to move from one item to the next. She jots notes on the chart as they move through each topic. F1 opens the meeting inviting members to 'discuss the challenges in teaching English since the opening of the year', noting that they agreed to 'discuss issues' at their last meeting. The teachers give examples of challenges, such as 'trying to improve group work…Some students just want to work alone'; the arrival of 'newcomers who are not used to the system I use to teach…group work, student presentations'; student 'use of Kiswahili and other languages' in the English class; 'handwriting among boys'. Some comment briefly on how they respond to their challenge. F1 observes that 'turnout is not good' for the meeting. She attributes this to school administrators who were not there when the teachers were initially trained, and who won't let their teachers leave during the school day. She suggests that they ask the PDC to write a letter to the schools, or that they consider changing the meeting time to 4:30 after school. F1 moves to the next agenda item, 'Resource material meeting'. F5 suggests that each person bring materials, but offers to bring manila and felt pens herself. Others mention low cost materials they can contribute, such as powder paints and cardboard boxes. F5 comments that 4:00pm is late in the day for a materials development session, and suggests they meet at 2:00pm. F1 shifts to the topic of 'mentorship' and asks 'When will we visit our cluster mentoring partner'. The members agree it is

best to team up teachers at similar grade levels. F3 and F4 agree to work together, as do F1 and F2 (F5 is not a classroom teacher), and to arrange visits in the next two weeks. F1 notes this on the agenda chart, and moves to the final item 'Workshop'. F1 asks 'When will we do a workshop and what will we discuss?'. She suggests that they "do it for us first and then arrange for other teachers'. F4 comments 'we have to know the topic'. F1 suggests 'ICT in English'. F2 talks about an online bank of resources that she is aware of and that they could explore together, with her as the leader. The members briefly discuss the date and length of the workshop, again settling on a 2:00-4:00 time slot. F1 crosses off 'workshop' on the agenda chart and thanks the teachers for participating in the cluster meeting. All copy notes from the chart, and the meeting ends.

From records of PLN meeting minutes, it appears that a standard plan for cluster meetings within each network is set annually or by term at the PLN executive level (see section 4.1.0). In the MTA vignette, the topic of 'time takers' appears in an overall schedule for MTA cluster meeting dates and activities for 2016. As illustrated in ELTA vignette, the agenda included reference to different sorts of activities that all the clusters are expected to carry out, such as materials development sessions, workshops, peer coaching and discussion of challenges to teaching and learning particular to their subject areas and classrooms. Within that activity framework, there is flexibility in what each cluster decides and does. Thus, the clusters are not entirely on their own in deciding what professional learning activities they engage in, and are accountable in monthly meetings to other clusters at the network association level. This strikes us as a reasonable norm for maximizing the variety of professional learning activity through the clusters, and for providing a common basis for potential sharing of experiences at the overall network level.

Sharing experiences with teaching methods and joint problem solving for challenges in the classroom are the two most commonly reported teacher cluster activities in the interviews, as well as in the stated goals for the PLNs (section 3.1.1). These two vignettes suggest that claims about the nature and professional learning potential of sharing and problem solving should be interpreted cautiously. In the first vignette, the teachers met with an explicit focus for sharing and problem solving, how to deal constructively with students who persistently do not get their work done in the allotted classroom time. During the observation they genuinely shared cases of specific students and discussed actual or possible strategies for understanding and addressing the needs of those students. At the close of the meeting the cluster leader challenged the members to be ready to report on the results of their efforts to help time takers at the next meeting. In the second vignette, each participant named a challenge they were facing in teaching English, and some made brief comments on how they were responding to it; there was, however, no comparison and group discussion about the challenges named across classrooms between the teachers, and no attempt to engage in any collective and reflective problem solving about how those challenges could be addressed. Furthermore, the network has been in existence for several years, and the members of this cluster were not new to the network. We were surprised that at least some of these challenges apparently had not been worked on before (e.g., how to ensure that all children participate in small group learning activities; how to deal constructively with student use of Kiswahili in the English classroom). If the network were acting as a mechanism for continuous professional learning beyond the initial PLES training one might expect the teachers to have moved beyond or deeper into these common pedagogical challenges in the classroom. In effect, teacher sharing of challenges in this cluster meeting seemed to have been done ritually to cover that agenda item. There was no talk about follow-up with any of the challenges in the classroom or in future meetings.

In our focus group discussions, we followed up with MTA and ELTA members on the question of challenges of practice, and particularly the implementation of suggestions or strategies for solving the various challenges identified in the different teacher cluster groups. Given that we had not heard much about the monitoring of school-based, PLN-inspired strategies, we asked if participants could share any implementation examples from their own experience; what the obstacles are to implementation and follow-up on suggestions for solving problems of practice at the cluster and school levels; and suggestions for ways such obstacles might be addressed. For an MTA member, unsupportive head teachers and other administrators were the main source of implementation challenges noted: "The first time [a PLN strategy was tried in the school] they thought perhaps we were wasting time, but now they appreciate what we are doing and getting" (MTA Member, FG, Female). Similarly, a further challenge noted in the teacher focus groups concerned the negative attitude of some teachers (non-PLN members) to the new knowledge and practices introduced by PLN members. And finally, participants in the teacher PLNs named resource (e.g., computers, facilities, stationary, etc.) challenges as significant obstacles to the implementation of the strategies devised in clusters. They did not provide specific examples of systematic follow-up within their clusters or PLNs on the results of PLN inspired activities.

The second vignette raises some additional questions about the potential of cluster activities for professional learning. First, it seems positive that the group is planning to engage in activities such as peer coaching, classroom materials development, and even joint learning through a member-led workshop. On the other hand, the emergent plans for implementing these activities did not include any discussion of "the need" or "the problem" that these activities might address. The learning goals remained vague, other than the sense that such activities can benefit teachers' ongoing development. It may be that the group will proceed to that level of specificity and purposefulness in future planning. Finally, things were discussed during vignette number two that had implications for decisions made later in the meeting that were ignored. The teachers talked about the difficulty for some cluster members to attend meetings during the school day, but went ahead with plans for a workshop and a materials development session at the same problematic time without taking those concerns into account. Any of the members at the meeting, not just the cluster leader, could have questioned the proposed timing.

The third vignette illustrates a very different but commonly reported type of teacher cluster activity, making low cost teaching materials, in this case for use in teaching mathematics to young learners.

MTA cluster meeting

The teachers meet in a primary school teacher resource room equipped with wooden cabinets, shelves, boxes of materials (colored manila paper, scissors, glue sticks), and empty cardboard boxes. The room is furnished with a wooden desk surrounded by chairs and some benches united to form a worktable for materials making. The walls are concrete block and plaster with a corrugated metal roof. The meeting lasts from 2:15pm to 3:45pm. It is attended by four lady teachers and one male. The cluster head's (F1) role is mainly to open and close the meeting with a prayer, to welcome the members (apologies from one who could not get coverage to leave school, and one home with a sick child), to review minutes from the last meeting and to announce the plan for the day. The sole agenda item is to make materials for teaching number values and addition for Class 1. Some members brought materials; mostly they used materials provided by the host teacher (F3). F3 comments that teachers can create materials that integrate counting and writing 'to enhance understanding of the concept' by 'making numbers and asking children to write statements using the numbers' and by 'making materials with simple computations and children can make sentences to give answers'. Once the members moved to the worktable there was no clear leader. Each appeared to know what they will do to contribute. F1 sets about cutting cardboard squares and gluing cards to sticks to make flags, with number problems written in felt pen on one side of each flag (e.g., 3 +2) and the answer on the other. She demonstrates how the materials

can be used with children. The male teacher helps F1 construct the flags, though she composes the number problems. F2 cuts big numbers (from 0 to 9) from manila paper. F4 glues the numbers on to cardboard squares and seals them with clear tape. The teachers talk informally about how the number cards can be used to teach number value. F3 works on a poster divided into nine squares containing different shapes (e.g., triangles, fish) with small circles glued into the shapes indicating number values (1, 2 ,3 etc.). The teachers chat and laugh in Kiswahili while working industriously on their materials. The man only contributes to the conversation when spoken to directly. The goal is to make four sets of materials for use in a classroom of students organized into four groups. F3 provides bottles of water to the members half way through the meeting. Towards the end F3 explains how to use her number value poster to teach simple computation problems and responds to questions from the others. F1 announces when time is up. The teachers display the materials they've developed neatly in the corner of the room. One takes a smart phone photo. They decide to bring the display to the MTA monthly meeting and to the upcoming annual PLN conference. Everyone helps clean up and the meeting closes with a prayer around the desk.

Teacher network members, as well as school leader network members, talk about organizing materials development sessions. This vignette illustrates this kind of activity in action, though it leaves many unanswered about the purpose, implementation and impact of such sessions. Unfortunately, our research design did not provide for debriefing with members of the cluster sessions observed, so we raise questions more in the interest of provoking reflection on this kind of network activity, not as a critique per se.

First, in this vignette the teachers came with an explicit purpose for materials development, teaching number values in relation to simple addition and subtraction problems for lower Classes. That kind of intentionality seems more beneficial than talk in the preceding vignette about organizing a materials development session with no specific learning goal in mind. Second, we cannot say with any certainty whether the teachers in this vignette were doing anything "new" or were replicating the production of low cost materials that they learned in their PLES training. In the interviews teachers said that the value of the network meetings was also about reinforcing implementation of what they were introduced to in the initial training, so even if it was mainly replication, that is still consistent with the aims for continuous learning. We observed the teachers demonstrating and asking questions about how to use the materials they were developing in this session, which suggests that learning was happening while the materials were being made. Third, the intended users of the materials produced by teachers in this cluster remained unclear. Were they left at the host teacher's school for her use and possibly other teachers in the school? The learning materials session illustrated in this vignette was limited to the cluster members. We heard in interviews about materials development sessions where other teachers in the host teacher's school are invited to take part. This seems like a useful outreach strategy for PLN teachers to extend the benefits of professional learning beyond the formal networks and to act as teacher leaders. In one school leader cluster, the members talked about creating a learning materials repository for all schools in the cluster and assigning responsibility to different schools to develop materials for different subject areas. They did not talk about the possibility of asking ELTA or MTA teachers in their schools to lead these sessions.

The other two cluster meetings were not markedly different from the second vignette. One was attended by four teachers and the other by six, and in both cases the cluster chair chose not cover the complete agenda because of the incomplete attendance. One meeting started with teachers naming challenges that they were facing in teaching English in large classes, but as noted in our review of topics discussed in PLN clusters (section 3.3.1), there was no substantive discussion or problem solving around any of the challenges named. One five minute episode where one member described how she got students in different groups to compose stories about different topics and involved students across groups to mark their peers' compositions sparked genuine interest from all, but was not explored in depth. In this

meeting the cluster head announced that network leaders were urging them all to share their knowledge with non-network teachers. The teachers told stories of what they were already doing. When the agenda topic of organizing peer coaching was addressed, they talked about organizing a peer training event for non-network teachers, not just among themselves. They brainstormed ideas about possible training topics (e.g., group work, use of low cost materials in teaching English, reading comprehension), but made no decisions and ultimately decided it was too late in the term to do something like that. The clusters are expected to meet three times each three month term. This was this group's first meeting in 2016 with only three weeks left in the term. Clearly, for networks to function as continuous professional learning strategies, regular meetings and attendance are essential. The other meeting observed only lasted 45 minutes. Because of low attendance (4 women) the chair limited discussion to following up on plans initiated in a previous meeting to organize a gallery walk for other teachers to display low cost learning materials and their use in English. The members briefly brainstormed ideas about what kinds of materials they could display, how they could illustrate use of the materials, the organization of the event, and who to invite (e.g., head teachers), but no firm plan was decided. There were lots of smiles and laughter in this meeting. The teachers socialized about their work lives and acted like friends, not just colleagues.

To summarize, our observations of five teacher cluster meetings suggest that talk about the practice and benefits of mutual sharing and problem solving about challenges of teaching and learning in teacher professional learning networks does not always live up to the reality of what goes on in network activities. Challenges can be named without problematizing the contexts and causes. Solutions may be suggested without debating their feasibility or effects, and without any commitment to next steps. Activities can be proposed without any clear learning objective for the participants. Network meetings can serve as community building contexts for social interaction and participation in the networks. Clearly, however, the road to implementing powerful professional learning networks is not simple beyond the ambitious intentions. Comparisons of the teacher cluster observation data to findings about teacher cluster relationships and gender in the PLNs are incorporated into the following two sub-sections. School leader cluster observation data are examined in the section on school leader cluster activity later in this chapter.

3.3.4 Teacher cluster relationships

We asked teacher network members about the level of openness between cluster members to share and discuss challenges of teaching and learning in their classrooms and schools. The respondents strongly agreed that *a high level of trust and openness to mutual sharing and problem solving is characteristic of active participants in the PLNs*, regardless of teaching experience or school affiliation. These claims are consistent with our observations of five teacher cluster meetings. The teachers reported that this was a change in traditional professional norms, and that it differentiated them from colleagues who did not choose to be active in or who were not members of the PLNs.

Table 3.10 Teacher Cluster Relationships: Openness to Collaboration

	ELTA	**MTA**
High level of openness to collaboration	We do actually share and I have not witnessed anyone saying 'I'm not able to put across my issues.' The level of discussion is good and the relationships are good. (ELTA-T2)	There is real openness and those who are willing to help each other. We have that openness and people are ready to help. (MTA-T4) There is more openness now than when

Table 3.10 Teacher Cluster Relationships: Openness to Collaboration		
	ELTA	**MTA**
	We are very open. (ELTA-T1)	we started. It's getting more open each meeting. (MTA-T5)
Change in traditional professional norms	Some people are open and share, but others don't. Some people think that they can solve the issues on their own. We try to talk to people to convince them to share, but you can't force people to share. (ELTA-T5)	With respect to the challenge of making everyone feel comfortable in cluster meetings, it has changed us. We are mixed up, the old and the young. So I have to go down and they have to come up to each other. I believe that there are things her generation knows that I don't and I can learn. Sometimes they could fear me. I've done a degree. So I go to their level so there's no gap. (MTA-T8) For those who have come through the training there is no problem in sharing ideas and challenges. But when we go back to our schools people have different ideas and minds. They are not willing to share or work together. (MTA-T3)
Contributing factors	The bond we have between us is very strong. (PDC facilitator) made us this close. Now everybody is open. Any problems we're having, we share and then we try to figure out and come up with a solution. (ELTA-T1) I think we are in the same set-up. Especially the schools in Kisauni. Most are in the slum areas so we're facing the same problems. The pupils behave the same way. So maybe that's why we find it easier to share openly. (ELTA-T2)	I think that we trust each other. This trust was built within us from the day we stepped into the PDC compound. We were all different teachers coming from different schools. But the lecturers model the way they carry themselves and work with us. (MTA-T1) It's really amazing. When you talk, you open up. When you have a problem you open up about what you do. The discussion is free because you want to receive ideas from different people. You want to share what is affecting you. (MTA-T5)

Teachers attributed the change to a variety of factors, including the modeling of sharing and joint problem solving experienced during their PLES training, and the perceived benefits of continued reciprocity in PLN activities since graduation. Another factor highlighted by some teachers is that the working conditions, community characteristics and challenges they face in their schools are quite similar, and that this makes it easier to identify common problems and to seek solutions together.

3.3.5 Gender in teacher PLNs

Data from interviews and cluster meeting observations suggested that gender has not been a topic for discussion or action in teacher PLNs; however, an MTA member indicated during a focus group discussion that her cluster had held a gender responsiveness workshop that incorporated structured time for practicing the strategies learned[7]. While interview and focus group data broadly indicated an awareness amongst participants of gender issues in their professional practice and sense of commitment to promote gender equality, some concern was expressed for what was a perceived to be an over-focus on

[7] A gender module was added to the mathematics AKAM-PLES program, but had not been part of the original English teachers program.

girls, with this coming at the expense of boys, who now are "having problems" (ELTA-FG, woman). Focus group discussions reinforced these findings, for example:

> I think that the gender balance… as women become more aggressive than men, you see more of them becoming teachers. There was a time when we used to focus a lot on girls' education and we placed a lot of emphasis on the girl-child. And you can see that they have really advanced! And even right here [in MTA], we have more ladies than men. I think we over did it at some point. Because even the male gender now is suffering. The male gender has become very timid and the girls more aggressive and the girls even intimidate boys now! We need to pay attention to the boys (MTA Focus Group, woman).

Perceptions such as this may help explain why gender was not more prominently a topic that was discussed or acted on at the cluster or PLN level.

Most interview participants suggested that women and men engaged equally in PLN activities, even in MTA where there are considerably fewer men than women in each of the clusters. Where gender differences were noted these involved women being more active than men. In terms of interaction patterns between teacher PLN members, most interview participants indicated that men and women interacted effectively and equally. For example, "The men participate like women; women are strong but they [men] are strong too" (MTA-T2). And in another example, an ELTA member said that interactions between men and women at cluster meetings was, "Healthy, open… people share and ask questions and look for solutions together. There's teamwork" (ELTA-T4). Similar to the case of school leader PLNs discussed later, however, a few teacher PLN participants noted some differences in the interaction between men and women at cluster meetings. The main issue in these exceptions was that men were perceived as not interacting or participating as much as women, with a few participants suggesting that women "dominated" the male members. For example, an MTA member stated that, "We have only one male. We are eight all together. Sometimes the younger male member shies off, due to the overpowering women… but everyone is still very open and caring" (MTA-T7a). Age and teaching experience may interact with gender, as in this case where the male was a novice teacher with little formal teacher education.

The overall pattern of fewer men teaching at the primary level was identified as a challenge related to gender in the overwhelming majority of responses from teacher PLN and PDC participants, particularly in terms of achieving gender balance in PLN and cluster membership and participation. While across the study participants noted lack of time and/or competing time commitments as key constraints on members' attendance and participation, in terms of gender, one ELTA member suggested that "…men are a bit busier" (ELTA-T12). Moreover, this same participant suggested that "I find that men…don't like sitting and listening. Sometimes when you're a teacher and you have someone else teaching you, it can be hard" (ELTA-T12), implying that this was even more challenging for some male teachers. Another member of ELTA spoke of a man that didn't take the work seriously and ultimately did not graduate from the training program/join the PLN: "That is the work of women how could I waste my time sitting there cutting papers, you see, talking to pupils? Ah!." (ELTA-T3).

Our cluster observation summary notes included a section on gender balance, engagement and participation in the meetings. The observations of teacher network cluster meetings largely confirmed the

findings from interviews and focus groups concerning the relatively marginal position of gender as a topic or issue for the teacher PLNs, and the common absence of men at the actual meetings.

3.3.6 School leader cluster meeting topics

School leader cluster meeting topics (interviews)

Some cluster meeting topics named by school leaders were common to those named by teachers, including talk about teaching and learning practices and English language use in schools. In contrast to teachers, the school leaders reported that they often talk about student academic performance in their schools, particularly with reference to student performance on government examinations (KCPE exams). They also said they talk about leadership practices for themselves and for those who assist them in managing the school. As illustrated later, they talk less about their own leadership skills than about what they as leaders can do to address specific challenges in student learning in their schools.

Table 3.11
Discussion Topics in School Leader Cluster Meetings (Interviews)

Topics	MELA	KELG
Teacher practices	Issues to do with teachers…For the teachers – professionalizing, how they can do the reading. For example to have well-connected schemes of work, PD for the teachers. (MELA-EL2) Mostly the ones that we face in our schools, such as in our last meeting we were discussing composition writing in schools which cuts across the board, the other time we had a workshop on instructional material. (MELA-EL4) We have also been talking about discipline…that's where we have 'guidance and counselling'…In our country we used to apply caning or corporal punishment. Now that it is no longer allowed, we have to find different ways. Our teachers sometimes they don't use learning materials, so we talk about how to encourage these. (MELA-EL8)	You find about 80 children being taught by one teacher. So there are some of us that have already done trainings on how to deal with large classes, and so when we get together, we organize INSETs. Share our knowledge. Give teachers steps to take to solve that problem. Then we also have challenges with respect to materials. Classes have very little in terms of materials. The walls are bare. As a group we said that we needed to do something about this. (KELG-EL2)
English use		Problem of language policy. Our children are affected by mother tongue. So we discussed at our cluster meeting what we could do to improve student performance in English. And that's why we came up with the idea for competitions, English, debate, composition, amongst our cluster schools. (KELG-EL2)
Academic performance	Issues to do with learners… how to improve on literacy and numeracy. To do with essay writing. (MELA-EL2) The mean score. The KCPE exams – that is the indicator which shows that there's improvement in composition and Kiswahili. We did this last year, and this year after we saw there was an improvement we looked at	We do analysis of the exams; we share our performances in the cluster schools; we identify where problems exist; then, we plan strategies to address the problems. (KELG-EL3) In my cluster, we've talked about performance. Especially English performance. But this topic has taken us too long. It has not improved as expected…So it's been difficult for us to find

	Table 3.11 Discussion Topics in School Leader Cluster Meetings (Interviews)	
Topics	**MELA**	**KELG**
	other areas where we have problems and we identified problems in math and science. So, we decided to develop teaching and learning materials for math and science. (MELA-EL5) Academic problems such as the teaching of composition in English and in Kiswahili where children have a problem. (MELA-EL3)	another topic to talk about. (KELG-EL4) Performance in schools...So we say, 'How do we improve this performance?' So we looked at the problem to see what was going on. English is the problem. Learners don't understand the questions. So we're planning activities that will help the students. (KELG-EL9)
Leadership practice	Issues to do with deputies and senior teachers…things like how to man the stores, how to man the exams. (MELA-EL2) Helping the deputies. In Kenya, people are given positions but not trained – such as how to procure books. So we thought in MELA lets train the deputies, whether they're in MELA or not so they do things the same way. (MELA-EL3)	We have tackled the problem of how to be a team… teamwork. We observed and got reports from HTs, we found that the HT, DHT and ST are not working as a team. So we discussed that and developed an action plan for interventions… how to bring these people together. (KELG-EL5) Leadership issues. How we can manage our people and resources. As a head of an institution, sometimes teacher attendance is an issue. Loss of textbooks in school. These are common challenges. (KELG-EL7) In school cluster meetings we look at administrative issues in our schools…maybe how we run the curriculum…particularly with only one TSC teacher and then other teachers paid by the parents…Also issues of leadership. We look at issues of dropouts, discipline, and activities during the term (balancing out the activities and coordinating the co-curricular activities). (KELG-EL1)
Parents	-	How to encourage greater parental involvement/build school community. (KELG-EL7) We had also problems with respect to parents' support. The child comes to school, but they are not given all the support they need. So we organized parent meetings. (KELG-EL2)

Teachers, on the other hand, mentioned talk about development and use of teaching and learning materials, and about classroom management issues and practices more often than the school leaders.

School leader cluster meeting topics (observations)

For some clusters, the March meetings were the first of calendar year 2016, while others had previously met once. The meetings followed a common format, beginning with review of prior meeting minutes and issues arising, including school reports on implementation of previously agreed upon activities. This was followed by discussion of school improvement challenges for 2016 at the school and cluster level, and action planning to address one or more challenges.

Table 3.12 illustrates the kinds of topics named in one or more school leader clusters in each association, either as "challenges" or as focuses for past and current strategic plans and action

research at the cluster and/or school levels. Talk among school leaders about challenges for improvement in student performance (English, science, social studies, mathematics) and behavior (attendance, substance abuse, parental influence) typically extended beyond naming the issues to planning or reporting on inter-school interventions within the cluster or at the school level. Actions intended to improve English language composition writing, for example, included joint training events for selected students and teachers with the expectation that participants would share their learning in their schools. Collective efforts to improve reading fluency and comprehension centered on organizing school-level and inter-school reading competitions and promoting reading cultures through the acquisition of library books (with help of parents) and weekly library use schedules in schools. The school heads also referred to activities to strengthen English comprehension and speaking proficiency by means of school-level and inter-school debates and storytelling activities.

One MELA cluster planned the development of a central repository for mathematics and science teaching aids during 2016. The plan included identifying syllabus topics, pairing schools and scheduling materials development days for subject teachers, funding, and setting improvement targets in science and mathematics exam scores. Another MELA cluster discussed plans to jointly address concerns about student absenteeism, including counseling students, sensitizing parents and parenting education, and organizing extra-curricular activities. A KELG cluster group developed an action plan to train selected students and teachers to implement a newly mandated form of student governance in their schools. When engaged in planning activities, the school leaders often commented on the process and format of action planning and strategic plans, not just about the content focus of plans. These planning conversations included references to the involvement of neighboring schools in inter-school activities organized by the PLN cluster groups[8].

Table 3.12 Discussion Topics in Observed School Leader Cluster Meetings

	MELA	**KELG**
English language performance and improvement • **School performance & targets** • **Composition writing** • **Reading fluency & comprehension** • **English speaking** • **School library resources & use**	X	X
Science and social studies performance and improvement • **School performance & targets** • **Low cost resource materials**	X	-
Mathematics performance and improvement • **School performance & targets** • **Low cost resource materials**	X	-
Student absenteeism (causes, intervention)	X	-
Teacher development • **English language proficiency** • **Teaching methods (materials**	X	X

[8] Historically, the PLN clusters were organized on the basis of proximity of schools with AKAM-PDC alumni. This is shifting over time towards clustering within administrative "zones" defined by the County education offices. A zone could include schools with and without teacher or school leader PLN members.

Table 3.12 Discussion Topics in Observed School Leader Cluster Meetings		
	MELA	**KELG**
use, teaching and evaluation methods) • **New teacher induction**		
Leadership development • **Management training for deputy heads** • **Monitoring & evaluation training for head teachers** • **Student leadership training**	X	X
Strategic planning and plans (school level, cluster level)	X	X
Outreach	X	X

In contrast to the teacher groups, the topics raised in school leader cluster groups typically occurred as part of elaborated discussions (not just sharing) regarding game plans of coordinated actions taken or to be taken jointly in or between schools. All but one school leader meeting lasted at least two hours. Teacher cluster meetings were about one hour with less time for discussion on specific topics. In their positions as head teachers or deputy heads, the school leader groups appear to have greater authority to plan and make decisions about PLN activity implementation, including access to school funds. This relates to the importance of what Hargreaves and Fullan (2012) characterize as decisional capital that is critical to effective collaboration between educators meeting and working in teams.

3.3.7 School leader cluster meeting activities

We asked school leader PLN members in the interviews to describe what they actually did in cluster meetings, in addition to observing three MELA and three KELG cluster meetings. Due to the close timing of interviews and observations, sometimes comments about cluster activity coincided with observations.

School leader cluster meeting activity (interviews)

In school leader cluster meetings, the range of issues and experiences shared, as well as common problems/challenges addressed was broader than what was reported by teacher cluster members. Whereas teacher sharing and problem solving tended to focus on teaching methods and student learning and behavior in the classroom, the school leaders reported that their sharing and problem solving discussions covered a diverse range of topics, including student performance in different subject areas, student behavior (e.g., truancy, substance abuse), teacher development (e.g., teaching and evaluation methods) and professionalism (e.g., attendance), school leadership practices (e.g., teamwork, deputy head and senior teacher management skills), teaching and learning resources (materials, library books), and parental involvement. One head teacher noted that these discussions tend to "focus on the small things" that are within their power to act upon and influence, "not on the bigger things at schools, like water resources". Another, however, reported that through sharing in his cluster he learned about sources of external funding for resources, and was pursuing those leads for some infrastructure issues at his school. School leader sharing, problem solving, and action planning activities in the clusters were often described in the interviews as a series of linked activities focusing on particular common challenges.

Table 3.13 School Leader Cluster Activity		
Activities	**MELA**	**KELG**
Sharing challenges, practices & experiences	Activities like what problems we have in common. We come up with solutions together. (ELTA-T12 → but also a member of MELA) First, we meet and discuss the problems we have in our schools. (MELA-EL5)	Sharing of problems…discussion… Strategizing. (KELG-EL4) As KELG we've come together. We share experiences geared to the profession, and we do activities that are geared towards the profession. And all of this to improve performance. (KELG-EL8)
Joint problem solving and action planning	We also discuss and come up with our strategic plan for the cluster. (MELA-EL8) We found that we have problems in English composition and Kiswahili. We organized a workshop and called in national markers for English and composition. Then we invited all of the teachers. (MELA-EL5)	We develop action plans to identify and address issues of concern. (KELG-EL5) We tackled the problem of how to be a team…teamwork. We observed and got reports from head teachers and found that the head teacher, deputy head teacher and senior teachers are not working as a team. So we discussed that and developed an action plan for interventions (KELG-EL5) Problem of language policy. Our children are affected by mother tongue. So we discussed at our cluster meeting what we could do to improve student performance in English. That's why we came up with the idea for competitions, English, debate, and composition amongst our cluster schools. (KELG-EL12) We had problems with respect to parents' support. The child comes to school but they are not given all the support they need. So we organized parent meetings in cluster schools. (KELG-EL12)
Professional development planning & implementation	For deputy heads (we did) how to do procurement and the tendering of books. Procurement is how you identify the needs to get books, the procedures for getting money from the government, establishing the selection committee, telling them with this much money how do you buy books, get quotations from book sellers. After getting books...where are the papers, invoices, receipts. (MELA-EL2) We found that we have problems in English composition and Kiswahili. We organized a workshop and called in national markers for English and composition. Then we invited all of the teachers from all six schools in our cluster. (MELA-EL5) Sometimes we have guest speakers. Our TAC tutor comes into our meetings sometimes to talk about benchmarking issues. She also helped with the roles of senior teachers and deputy heads and planning that workshop. (MELA-EL8)	We trained our deputy heads after we were trained at PDC. We wanted them to manage the stores and books and such. (KELG-EL7) At the cluster meeting we do training in material development. At (school name) Public School they have an ECD program and they also oversee some other ECD programs in the area. They were running a workshop to help teachers develop ECD materials and sharing what was being developed.(KELG-EL1) We have a challenge…You find about 80 children being taught by one teacher. Some of us have already done trainings on how to deal with large classes. So when we get together we organize INSETs. Give teachers steps to take to solve that problem.(KELG-EL2)

Table 3.13 School Leader Cluster Activity		
Activities	**MELA**	**KELG**
Planning cluster-wide student learning experiences	We collect student leaders from different schools and we do a talk and show them how to write, what to expect. The teachers teach the children how to do it with a variety of topics. We plan, we budget, we organize the venue. (MELA-EL2) We decided to develop teaching and learning materials for math and science. We identified the materials to be made and delegated who would make what. We will assemble the children together and identify the best teacher in math and in science. We will have two sessions, math in the morning and science in the afternoon. It will be 10 students per school. (MELA-EL5)	We started talking about language policies… whereby we had an arrangement where children were participating in debates, story-telling, news-telling and reading competitions. (KELG-EL7) We will be having another training for Student Government. That is a new initiative that is supposed to be included under the new Board of Management initiatives. (KELG-EL1)
Analyzing & discussing student performance	The mean score. The KCPE exams …that is the indicator which shows that there's improvement. We did this last year for composition and Kiswahili. This year after we saw there was an improvement we looked at other areas where we have problems and we identified problems in math and science. So we decided to develop teaching and learning materials for math and science. (MELA-EL5)	We do analysis of the exams. We share our performances in the cluster schools. We identify where problems exist. Then we plan strategies to address the problems. (KELG-EL3) After exams we do some comparison of results. I take my marks list and we sit as a group and ask, 'How did you perform?' Because of the activities we did, did you step ahead? So we check with our colleagues and we check the results. 'Did English improve?' (KELG-EL9)
Reflecting on interventions	We report back at cluster meetings. We review our strategic plan...assess progress. (MELA-EL10)	If there are activities that have happened, we try to reflect on them. We ask ourselves, 'Did we go in the right way?' If we failed to achieve our objectives we think about why, and decide a way forward. (KELG-EL12) Even with speakers…and (inter-school) debates. We bring the reports from that. 'How many children did you reward?' 'More than last time?' Those types of questions. (KELG-EL9)

A difference between what school leaders said about PLN cluster activity, as compared to teachers, centers on the frequent illustrations of joint plans of action across schools within their clusters (including neighboring schools). Examples of coordinated action between teacher cluster schools tended to be limited to pairs of schools for teacher inter-visitation. In the interviews, school leaders commented about comparison and analysis of student performance (KCPE results) in cluster meetings, as well as reflection upon implementation and impact of prior cluster interventions at the school or cluster-wide levels. Neither of these two topics was highlighted in the teacher interviews as examples of cluster activity.

We were impressed by the emphasis in school leader cluster meeting talk and activities on addressing issues of student academic performance in and across the cluster schools. This included not only identifying focuses for improvement through comparison and discussion of academic results (KCPE exam data), but also planning cluster-wide teacher development and student learning activities based on those findings (see observation findings below for examples). The predominant focus of talk and activity

in the observed meetings had more to do with student performance and strategies to address factors affecting student performance (teaching methods, teaching and learning materials, student attendance) than leadership practices, per se. While school leaders said they talk about 'leadership practices', in their accounts of what they actually do in cluster meetings, the focus is more on identifying and addressing problems they face as leaders, not on specific leadership skills. They did cite examples of efforts to develop the leadership and teamwork skills of others, such as deputy heads and senior teachers. And they did engage in talk about strategic and action planning processes as they engaged in those activities.

School leader cluster meeting activity (observations)

We observed six school leader cluster meetings. We provide vignettes from our observation notes of three of those meetings (one KELG, two MELA) for comparison to the interview data and to gain deeper insight into how the networks function at the cluster level.

School leader cluster #1

The two hour meeting (10:10am-12:10pm) took place at a small (4 classrooms, only nine students in Class 5, tiny cramped office) rural primary school located at the end of a dirt track off the highway. It was attended by six head teachers (one female) and two deputy heads. One cluster member was absent with apologies. They sat in a circle on wooden chairs under a shade tree. M1 chaired the meeting and M2 acted as secretary (though all took their own notes). M1 following a standard meeting protocol, beginning with reading and approval of minutes from the prior meeting and leading group discussion though an established agenda of topics. The first major agenda item is to finish planning begun at the last meeting of a joint event to train students and teachers how to set up a new form of student government mandated by the Ministry. M1 leads the group through a discussion and decisions about the timing of the event, funding for facilitators and refreshments (KSh 200 per school), the number and selection of participants per school (4 students, 1 teacher), student security, materials, the organization of the day, and the training content. M5 has researched the training content, which includes three parts: student government roles, leadership skills, and life skills (e.g., time management). They speculate that one day might not be enough, but decide to wait and see if a second day is needed. M1 summarizes the discussion and decisions made. The secretary (M2) shifts conversation to the next agenda item, 'review of activities for 2016'. Each cluster member reports on implementation of a prior decision to strengthen English language performance in their schools through reading competitions, library use, debates, and storytelling. M1 brings this 10 minute sharing to a close noting that they agreed to continue in-school activities this term and to think about inter-school competitions in a later term. M1 and M2 shift the conversation to the next agenda item, which is to rehearse the cluster presentation for the annual conference. A decision was already made to prepare something on action research and on strategic planning, and certain members were assigned to take the lead. M2 does a short review of what he has prepared about the purpose and steps of doing action research. M1 congratulates him on the plan, but asks 'have you done this and used it in our schools?' M2 describes action research with his teachers on the problem of 'shortage of teaching materials in class'. M1 invites others to share. Several respond with stories of their own action research projects, including research on 'loss of books by learners'; strengthening 'teachers' English language speaking'; 'student drop outs'; and 'induction of new teachers'. M5 presents what he plans to do for strategic planning, including an explanation of what strategic planning is, and then a presentation of the implementation of his school's 14 item multi-year strategic plan the past year. M7 is M5's 'critical friend', and he shares his own school's strategic plan which is similar in content. M1 offers a summary comment about the presentation and emphasizes the mutual benefits of sharing experiences with leadership practices like action research and strategic planning. 'When we have success among ourselves it motivates us not to give up….Let us share our approaches, visit each other, share challenges. Share the strengths of others to overcome our own weaknesses.' The meeting ends.

School leader cluster meeting #2

Cluster members gather in the computer lab (6 computer stations) of a Mombasa primary school. A set of wooden conference tables is arranged in a rectangle with chairs around the table. The 2 hour meeting (9:20am-11:20am) is attended by 5 head teachers, 3 deputy heads and 1 senior teacher from different schools (4 women, 5 men). The cluster

chair (M1) sits at one end, the secretary (M3) at the other. Men and women are mixed on either side. Three are absent due to conflict with community elections. This is the first cluster meeting of 2016. M1 announces the first agenda item as a 'review of 2015 activities', and refers to a training that they organized for deputy heads on textbook procurement, and a cluster workshop for selected Grade 8 students on composition writing. M1 asks 'Now what can we do for 2016?' M5 questions whether trained Grade 8 students 'actually help their peers when back to their schools?' He also suggests that they consider doing composition writing for lower Classes, not just Class 8, extending to writing in subjects other than English, and on improvement in oral language skills. M1 invites others to comment. Several (M3, F1, F2) express support for idea of composition training for Class 6-7 students, and for broadening the focus to KCPE results in science and social studies. F3 and others (M4, F2, F3) talk about the challenges of establishing school libraries. The chair and secretary take notes. M1 summarizes the list of challenges and asks 'Which of our challenges can we address first?'… 'We can't do everything at once' and suggests 'Let's start with training for composition training' building upon last year's event. The members engage in a lively half hour discussion. M1 leads them through a planning process to elicit decisions about 'what and whom to train, by who, by when and where', and the costs and sources of funding for facilitators and refreshments from AKAM or 'ourselves'. M1 seeks closure asking for consensus on a one day training event at the end of June in his school for selected Class 8 teachers and students from each cluster school, using cluster teachers who have experience as composition examiners as facilitators, with a commitment to assess and reflect on the outcome. The members agree to contribute to the costs from their school budgets. M1 shifts the topic 'to the library issue' and pushes the group to decide on action steps for the remainder of the term, 'need to get titles of story books by Class and by levels'. The discussion ranges from identifying books from government curriculum documents, seeking book reviews, and the problems (policy, parent attitudes) of getting financial support from parents. M1 pushes for closure 'OK…go to organize books to get titles' by end of term. M1 redirects the conversation to the proposed focus on strengthening students' oral language proficiency in English, possibly through 'inter-school debates and quizzes'. The group (M1, M3, M4, F1, F2, F3) exchanges ideas for 15 minutes about pairing schools for competitions this term, beginning with reading comprehension, and extending to broader competitions (debates, quizzes and more schools) later in the year. Some ask for clarification of how a reading comprehension competition works. M1 asks them to review what has been decided for the secretary to record. He suggests that they finalize the planning at their next meeting and suggests a meeting date early in the next term. The cluster meeting ends with a prayer.

School leader cluster meeting #3

The 1.5 hour meeting (2:30-4:00pm) takes place in a multi-classroom space of a Mombasa primary school situated in a low income neighborhood. The building is concrete block, with 10 large windows on two sides and chalkboards at either end. The nine members include 4 head teachers (3 female, 1 male), 3 deputy heads (2 male, 1 female), and 2 senior teachers (female) from different schools. The chair is a female head (F2), as is the secretary (F3). The members sit on plastic chairs around a large wooden table. The main agenda item is to develop a strategic plan for cluster activities for 2016. F2 begins by inviting the members to share current challenges, particularly for adolescent students, as a way to identify a focus for their strategic plan. M2 and M1 talk about student absenteeism associated with the challenging life circumstances (poverty) of families, the need for students to help generate income (collecting and selling scrap metal and bottles), and lack of parental supervision of children's attendance due to their own precarious family (single parent) and employment circumstances. F2 suggests that 'We can begin to address some of these issues happening in all of our schools' in the strategic plan. She proposes organizing a joint forum for parents with head teachers. The members respond that this is difficult because parents are at work and don't want to give up time or money to attend meetings. M1 brings up the issue of video game addiction at home and video game parlors in the community, which prompts discussion. Some members arrive late and F2 reviews the conversation with each arrival and encourages the latecomers to join in. F4 raises the issue of drug use (khat) affecting school attendance and performance of adolescent students. Others concur. F2 pushes the conversation 'So what do we do. We need to come up with an action plan to address these issues'. She pulls out chart paper to create a strategic plan following a strategic planning template – objectives, resources (who, what), budget, responsibility, timeline, performance indicators. F2 acts as a facilitator guiding the members as they brainstorm to fill out the planning components. They settle on an overall objective 'retaining learners in the school' and the short term objective 'to improve attendance'. All members contribute to the discussion. Strategic action #1 is to organize a sensitization workshop for parents, the school management board, student leaders and key teachers (e.g., guidance and counseling). They debate how many participants from each school, the costs, and the timeline. F2 urges them to recall what they learned about strategic

planning in PLES training, including indicators. She sums up the discussion and pushes the group to think about another 'strategic activity'. F4 suggests a 'guidance and counseling' intervention to 'change learners' attitudes'. F2 leads them through the planning process for this activity, constantly soliciting input from all. She then asks if there's anything else they can 'merge with these two strategic actions'. F4 and F2 propose the development reading clubs and reading and debate competitions. This is recorded as strategic action #3, and F2 leads the group to complete the planning chart for this action as well. She expresses appreciation for member input, though at this point only about half are fully engaged (some busy texting on their phones). Another lady arrives near the end of the meeting. F2 recaps the strategic plan for her and the group, and suggests that they 'meet next term to review and re-strategize'. This prompts a free flowing exchange about evaluating implementation of strategic plans. F2 closes the meeting saying 'I think we're done! We've done a very good job at creating our strategic action plan.'.

These vignettes, in our view, present positive examples of professional networks in action. There are obvious contrasts to what we observed and highlighted for discussion in the teacher networks. Some of these differences stem from the different positions and organizational authority of head teachers and teachers. School leader cluster meetings were typically longer and happened during the school day, because head teachers (including deputy heads and senior teachers) have greater control over their time and flexibility for attending meetings during the school day than teachers. This allowed for more time to engage in substantive discussions and detailed planning in the cluster meetings than was possible in the teacher meetings. Attendance was also more consistently high in the school leader cluster meetings.

We observed a bias to action in the school leader cluster meetings. They did not just talk about challenges for the sake of talking about challenges. In each of the meetings observed, the members made explicit joint plans for intervention at the school and the inter-school cluster level. The inter-school interventions were complex events involving multiple actors from each school and decisions about the goals and logistics of the events, venues and resources. Clearly, the head teachers or their surrogates have the power to independently make decisions for their schools and in collaboration with other schools that teachers in the teacher networks do not have. Head teachers can also commit school resources for implementation of planned activities, and they were doing so. The teacher networks do not have comparable access to resources for their PLN activities. Cluster leaders and members in the school leader meetings utilized standard protocols for event planning and strategic planning that they had learned in the PLES training programs. This helped ensure that interventions were systematically discussed and planned, and that the members knew what follow-up actions they would need to take. We also observed that the cluster leaders were using techniques for conducting effective meetings—such as setting the agenda, inviting open sharing of ideas and experiences, summarizing discussions to bring them to closure, seeking consensus on decisions, encouraging full participation, adhering to the agenda, and recording minutes. These kinds of leadership tools and skills were not so strongly in evidence in the teacher network meetings, particularly the planning tools, and may not have been emphasized in their subject area focused PLES training. All the school leader meetings began with a review of past minutes and reports on actions taken based on prior decisions. We saw evidence of continuity of topics and actions between meetings and of mutual accountability for follow-through with decisions taken at prior meetings.

Our school leader cluster observations do raise some areas of concern about the focuses of the networks as relates to school improvement and professional learning. In the first vignette the cluster members are planning an event to support effective implementation of a government policy mandate, a new form of student government. In the other two examples, the cluster members were identifying and responding to specific challenges in their schools, not acting as implementation agents of government policy directives.

The networks probably need to maintain a balance between focusing on mainly locally and contextually-driven school improvement needs and using the networks to respond to externally-driven initiatives. The relationship between PLN activities responding to local challenges versus government policy initiatives is addressed further in Chapter 7 on sustainability issues and challenges.

The second concern relates to the "innovativeness" of the kinds of school improvement-related interventions that the school leader networks are undertaking in their clusters and counties. Joint training events involving selected Class 8 students and teachers to improve composition writing, for example, is illustrated in two of the vignettes. Evidently this is a familiar strategy for trying to raise mean test scores in English on the KCPE examinations. So while the networks provide a context that makes it easier to organize and carry out such events, they do not sound like a break from traditional thinking and practice. In the second vignette, the cluster members talk about extending composition writing training to Classes 6 and 7 and to subjects other than English, like science and social studies, which sounded less familiar. Despite apparent support from several members for this change, the final plan reverted back to the old model, training Class 8 students and teachers in anticipation of the upcoming KCPE exam. The more general point is that school leader networks (and teacher networks) can be used to support existing practice, not just to promote innovative practice. Again, it is probably necessary to strike a balance, without assuming that existing practice is bad, but recognizing that it may need to be improved.

This brings us to our final concern, the network goal of professional learning. We were impressed that in their strategic planning and related discussions the school cluster members consistently reminded themselves of the importance of deciding on measurable indicators for judging the impact of their interventions at the school and network levels, and on the need to schedule times for data-based reflection on results. Without those steps they are in danger of institutionalizing a bias for action without a complementary bias for learning about the successes and challenges of implementing those actions.

When we followed up in our focus groups with school leaders about the question of challenges of practices and the implementation and monitoring of PLN-inspired remedial strategies, we were told that implementation challenges and results are indeed discussed and documented in the context of cluster meetings and the minutes recorded, though no formal or systematic approach to such monitoring and evaluation work was reported.

> What we can say is that coming together has been quite an exciting moment because we have been sharing our challenges and coming up with the way forward, but what I can say is a big challenge… see you've talked about the follow-ups and there is not much in terms of follow-ups. We can meet and discuss our challenges and plan action, steps 1, 2, 3, but then… I don't want to blame the gov't, but sometimes there are so many activities taking place, there is so much overlap of activities… (MELA, FG).

> Sometimes maybe you've planned a follow-up [on a PLN activity], but something comes up and you can't attend. And then you come back [to the school] and other things have to be dealt with so you still can't go for follow-up. Basically, there isn't enough time to follow-up. (KELG, FG)

While school leaders generally expressed belief in the importance of monitoring implementation processes and results associated with PLN strategies, and we heard talk about creating performance indicators in strategic and action research plans in our cluster observations, the main challenge for doing so related to the idea that documenting evidence takes time and effort, with competing professional obligations and time pressures making such work difficult.

The other three school leader cluster meetings observed seemed atypical. Two of the meetings were devoted to planning what the clusters would contribute to the annual PLN Conference organized at AKAM in conjunction with the graduation of the next PLES cohorts later that week. The cluster leaders set aside the normal agendas to complete this task, which was to produce action plans for their clusters. Notably, the cluster leaders did employ the same standard planning protocols in order to produce "strategic plans" to share at the Conference, but the goal of the meetings was clearly to satisfy the need to have some product for the Conference. The third meeting was only attended by three members. For these reasons we have not chosen to illustrate them in the same way as those depicted in the vignettes.

In summary, our interview and observation data are consistent and confirm that at the cluster level, the networks are active sites of sharing and collectively addressing common challenges affecting student engagement (e.g., truancy, attendance) and performance (e.g., learning, teaching practices, pedagogical resources) in their schools. In many respects, it seems that the school leader clusters are functioning as school improvement networks more than as professional learning networks focused on ongoing personal leadership and management skill development following from the AKAM-PDC training. Clearly, in the meetings we observed, the school leaders had internalized and were practicing the use of strategic and action planning processes in their schools and across their clusters. They were actively using these to prioritize and address school level and multi-school improvement and implementation concerns. There was less evidence of how and what the school leaders might be 'learning' as a result of these actions, although the school leaders we interviewed and observed consistently affirmed the importance of scheduling time for 'reflection' on school improvement interventions in their clusters and of setting indicators of implementation and performance that might be used as input to those reflections. A sense of collective responsibility for the welfare and success of all schools in the cluster (and in their zones), as opposed to a narrow focus on their individual schools was also evident in our analysis of findings.

3.3.8 School leader cluster relationships

School leader PLN members responded similarly to teachers when asked about their openness to mutual sharing and problem solving. They emphasized the openness to collaboration among active members, and how norms of collaboration differentiated them from non-active members and from head teachers in other schools. Like teacher PLN members, school leaders attributed their willingness to share in part to their PLES training experience, and to the recognition that they are working in similar schools facing similar problems. They also expressed a surprising sense of responsibility for the collective improvement of schools in their communities, in part because they might be transferred to other schools in the future, and in part because of their beliefs about the role of the school in bettering life in the community. This echoes what researchers in higher income countries have reported as a transition that gradually emerges when educators, particularly principals, start working in cross-school networks.

Table 3.14 School Leader Cluster Relationships: Openness to Collaboration		
	MELA	**KELG**
High level of openness to collaboration	It is healthy. We meet as colleagues and leaders at the same level, but coming from different schools... The cluster brings us together. (MELA-EL4) I will talk about the cohort 2015. Those are the people that I've worked with since the time we started our course at AKAM. We're so close. We're always working together. (MELA-EL10)	I find that it's high. People are able to talk. They open up easily. (KELG-EL5) In our cluster we are very open to share problems. There is a Swahili saying that goes 'When you hide your nakedness you won't give birth.' So you should share your problems so you can get solutions. (KELG-EL3)
Change from traditional professional norms	Some are self-centered, ego-centric. Some do not come to meetings. They remain at school. You do not get 100%. But the majority appreciate the cluster and what the Aga Khan are doing. (MELA-EL2)	Within our cluster we have seen that we have become very close in sharing, more than non-cluster members. When we come to meetings in which some of these other colleagues attend, we find that we have more direction and they seem to be more 'on their own'. We find that we cannot work in isolation. (KELG-EL1) Sometimes you will see a school performing well and you go there and ask your friend 'What are (you) doing here to produce the good performance?' and that person won't tell you everything. There are some people who shy away from that because of competition. (KELG-EL4)
Contributing factors	(Are some people are reluctant to admit challenges and share strategies?) Yes, this exists but the people who attended the course are willing to open up and share. (MELA-EL5) We are open. We are getting what is there on the ground. We share the same problems and the communities are the same. Sometimes even the children switch schools. We work in partnership. (MELA-EL2) When you get people contributing it means people are willing to open up and they need solutions so they can improve their schools. If someone is not open to see what others are doing, I can't say their schools are the best. (MELA-EL2) If you hide, then maybe during transfers you are going to learn that all is not well. Better if I know what is in your shoe and you learn about what is in my shoe. If there's a thorn we need to help each other. If one school in the community doesn't perform we all feel it. When one goes down we all go down. When one goes up we all go up. (MELA-EL8)	The AKAM program built capacity of people to trust and open up. (KELG-EL5) As the chair I need to be open. So I first share the problems that I have from my schools. I have a critical friend here, and I've shared openly and that person has helped me solve the problem. And I tell the members, that if you can be open we can help each other. (KELG-EL7) Openness has developed over time. We have formed what we call critical friendships. Even if they don't bring the issue to the meeting, they will go to each other and ask and discuss. The group may never know but the cluster member has worked with another cluster member to solve a problem. (KELG-EL2) In our system, we don't own the schools. I can be moved. If I'm not open about the problems that are occurring and I'm not there forever, then the problems continue. We can't solve the problems if we're not open about them. The kids belong to the community and the school is assisting the community. (KELG-EL9)

3.3.9 Gender in school leader PLNs

Data from interviews suggested that, like the case of teacher PLNs, gender has not been a topic for discussion or action in school leader PLNs. During focus group discussions, some KELG and MELA members noted gender differences in school participation and performance; however, these were not said to be topics discussed at cluster meetings nor the focus for any cluster activities: "This [gender] hasn't come up as an issue in our meetings because in our schools… it is at the school level that we are implementing it. So, if there isn't a problem, we don't talk about. If there is a challenge, we bring it to the table. If not, then I think it's okay" (KELG-FG, male). As a further illustration of low concern for gender issues, at one MELA meeting the challenge of dealing with and trying to teach "adolescents" was a topic of discussion (e.g., truancy, drug use); however, no distinctions were made between female and male adolescents and the unique educational challenges associated with these different groups.

In terms of engagement patterns amongst school leader PLN members, most interview participants suggested that women and men engaged equally in PLN activities; however, where gender differences were noted these involved women being more active than men. For example, a MELA member suggested that, "The females seem to be more active in coming to the meetings and assuming more responsibility" (MELA-EL7). In another example, we were told that, "There is nothing like gender bias, even the females participate more than the males" (MELA-EL3). One leader we spoke with suggested that her cluster had "problems with male teachers. The women participate more than men. There are three men in the cluster, but on the day you (referring to the researcher) arrived, there was only one there" (MELA-EL5).

In terms of interaction patterns between school leader network members, most interviewees indicated that men and women interacted effectively and equally. For example, a KELG member stated that, "We don't have any restrictions pertaining to our activities [as men and women]. We don't hold back because, oh, the ladies are saying it. We're equal in participation and in sharing ideas and all that" (KELG-EL9). In another example, a KELG member stated that, "We find that the male teachers are dominated by the female teachers. In terms of women talking more. I have seen that. Even yesterday, somebody stood up to continuing the planning…it was a lady that stood up. They are like that" (KELG-EL5).

Beyond noting the gender imbalances in terms of the composition of school leader PLNs, and some mention of male cluster members' lack of active engagement in the PLNs (as noted above), no further challenges were identified by interview participants. During a focus group, however, two MELA and KELG members discussed the difficulties they faced in fulfilling their obligations to act in accordance with the "1/3" law in Kenya, which dictates that where there is gender imbalance, steps must be taken to ensure that 1/3 of the under-represented gender is included/represented. Again, while this was mentioned in the context of a focus group, challenges facing school leaders in terms of abiding by the 1/3 rule were not said to be something discussed during cluster or general network meetings.

As in the case of the teacher PLNs, observations of school leader cluster meetings largely confirmed the findings from interviews and focus groups concerning the relatively marginal position of gender as a topic or issue for school leader PLNs. Even in the case of KELG, where women are outnumbered by men, observation notes indicate that women were engaged (albeit to varying degrees, as was also the case for the male participants) in the cluster meeting proceedings, asking questions, sharing stories and

contributing to cluster activities, including the development and planning of professional development activities. We observed several women playing formal roles at the cluster meetings, as secretaries and chairs, in both MELA and KELG cluster meetings. While there were some cases of male leaders attempting to maintain strict control of the cluster meeting and having conflict with some members, there were many more cases where male leaders and other male cluster members sought out knowledge and information from female members, with both men and women appearing to treat each other as equals.

3.4.0 Social Media and the Networks

A significant number of the participants in this study highlighted the important role that communications technology and social media forums, such as WhatsApp, are playing in supporting and strengthening the work of the PLNs. Investigation of the use of social media (WhatsApp) was not part of the original design for this study. A question about social media use was included in the interviews, but it was not until we began hearing responses that we recognized that this was a form of interaction among PLN members that could not be ignored. One of our members was given access to read and view WhatsApp postings from the various WhatsApp Forums. Research time and space limit us from providing a comprehensive analysis of how this social media platform is contributing to ongoing professional learning and community in the PLNs. In the paragraphs that follow we summarize findings from the interviews. Then we provide a content analysis of WhatsApp postings over one term (three months) for one of the PLNs.

The PLNs and WhatsApp

The idea of WhatsApp Forums arose during the PLES program in 2014. Two WhatsApp forums (ELTA and MELA) were created by participants in the English and Leadership courses and the MTA WhatsApp forum was created by the Master-Trainer of the Math program. In April 2015, a new WhatsApp forum was created for the PLN Executive by one of the PDC faculty to facilitate communication within this group, and in December 2015, an overarching WhatsApp forum called LEARN was created by the head of the AKAM-PDC to facilitate sharing and communication of cross-PLN information among all four PLNs, PDC facilitators and external stakeholders. The KELG WhatsApp forum was not created until April 2016, as network connectivity was increased and more members began to get smart phones. By early 2016, several Math, English and Leadership school cluster WhatsApp forums began to emerge.

The PLN and School Cluster WhatsApp groups select their own Administrators. The administrator, one of the members, sets up the page, invites everyone to join, including PDC staff so they can take part in the discussions. All members can share posts, photos, videos and can pose questions to the rest of the group

WhatsApp use (interview findings)

From 30 interviews with teachers, head-teachers, PDC faculty and external stakeholders, the majority said that they used WhatsApp in either PLN or LEARN forums. About half were involved in a school-cluster PLN. Only four (one ELTA, one MELA, two KELG) reported little or no involvement. Three external stakeholders said that they were members of at least one of the PLNs and that they participated regularly.

In addition to face-to-face communication in their PLN groups, all interviewees said that they use multiple other modes of communication, including social media (WhatsApp-28 sources), mobile phone (4

sources), email and text messaging (5 sources). Several emphasized that social media and other digital technology should complement but not replace face-to-face meetings and collaboration.

> When we meet face-to-face there is enough time to for us to sit down and talk and agree and come up with solutions that's why we have these cluster meetings. We also have time to prepare materials – you cannot prepare material online. We prepare materials for a certain date – we come up as cluster members and discuss and prepare my lesson, maybe in paper or in a jigsaw. We learn a lot of methods as a group rather than online. (ELTA-T3)

> They are both important. We need the meetings, because that is where we discuss the problems and the successes we are having in our classes. But, with the WhatsApp, we can also stay in touch with our facilitators, if there are any challenges or issues arising, they want us to share these with our members. Also, with WhatsApp, we can share issues much more frequently and the members can help you so well and right on the spot. Also, on WhatsApp, we can share photos and videos of the activities. (MTA-T3)

The most frequently named uses of WhatsApp were:

- *to post questions or challenges and get answers or advice (15 sources)*
- *to share instructional, assessment or other professional practices (11 sources).*
- *to send invitations-reminders of PLN meetings-events (10 sources)*
- *to share & discuss issues (teaching; social issues) (7 sources)*
- *to highlight PLN events, meetings, activities (6 sources)*
- *to communicate successes (6 sources)*
- *to communicate leadership challenges and strategies (5 sources)*
- *to exchange information within the network (9 sources)*

When asked about why individuals choose to get involved with the WhatsApp forums, the most common responses were *gaining and sharing knowledge* (19 sources); the *quick response time* (9 sources); the perceived benefits of being able to include *multi-media communication tools* (text, photos, videos, charts) (7 sources); and the opportunity to *broaden their professional network* (8 sources).

WhatsApp forum administrators are volunteers from the PLNs, who also act as *de facto* informal moderators of the forums to varying degrees. Some interviewees remarked that there was no one in charge and that "if you have a question you just post a question and the members react to it." The role of the PDC faculty in the forums is ambiguous. In principle they are just participants. They themselves raise concerns about the time it takes to actively participate in all of the different forums and also their role and the role of the PLN chairs within the forums, related to issues of perceived *surveillance* and/or *control.*

> We track what they are saying. Sometimes we post things like a 'discrepant event' for them to discuss… Sometimes we participate in their discussions…and stretch them in their discussion." Our role is to chip in…sometimes it's very social not professional… Our role is to track, and to see what's being discussed… to check in and to contribute.

> [one of the PDC faculty] likes to give sums, for example, 'Why did the child do this?'…to create a discussion…That's the kind of things we do (PDC-5)

> *Challenges….as master trainers you only have so much time and trying to be on the online forums too much, is also a challenge?* Yes, and sometimes when you throw in a comment or a picture, then they all jump in to try to respond, even if it doesn't really require a response, just because it is me (or another MT). You want to avoid that sometimes….and sometimes you just want to be like a 'fly on the wall'….reading t the posts to see what they are saying/sharing, but not engaging in the discussions. (PDC-3)

The most common challenges to use of WhatsApp clustered in three areas: *access, technical capacity, and confidentiality and trust.* While the majority of the Mombasa participants (MELA, MTA, ELTA) all spoke of the ease of accessibility and connectivity, quite a number of the KELG network, who live in more remote regions of Kwale, described challenges related to limited connectivity; issues with re-charging power; and even owning a smart phone. A number of participants said they did not yet have a school-cluster WhatsApp group, as they did not have anyone with the capacity or there was some degree of technophobia in taking on the role of the moderator, to start the group. A few expressed concerns about posting personal challenges on WhatsApp, for fear of others judging their weaknesses.

> We need the cluster meetings because they are face-to-face. Face-to-face is much more interactive. Sometimes there are personal issues/things that you don't want to share with the whole PLN. You can discuss it with 5-8 people at the cluster and this information is not shared around. You might have a problem like with nouns – and you're afraid that if you post a question in the group discussion that some people will say "What? This person does not know nouns?" But then I can sit down with someone like you and discuss challenges and I know that Mr. Anderson is not going to tell everyone about my weakness. (ELTA-T5)

Some other challenges or constraints included: *expense for data bundles, inappropriate posts, challenges with re-charging power,* and *inactive members.*

WhatsApp Use (content analysis)

To gain greater insight into the use of WhatsApp we undertook a content analysis of postings (1080 posts) in the ELTA forum over one term. We cannot say how representative these are for the other networks and forums, but the findings do provide a concrete illustration for discussing actual use in the PLNs. The ELTA forum includes entries in the form of visual images (photos, videos) as well as text entries. Table 3.15 presents a thematic analysis and count of the visual image postings during this period.

Table 3.15 ELTA WhatsApp Postings: Visual Images (photos, videos)

Professional Images (N=257)	**General Images (N=83)**
CPD working groups (88)	Values-Attitudes – general (33)
Materials development (11)	Political; social; religious matters (21)
What NOT to do (caning; removing students from class) (2)	Local-National-International current events (7)
	Motivational (5)

Purpose of education-teacher/head teacher role (28) Ministry-CDO-TSC information (19) Values-Attitudes for teaching and learning (18) Educational partnership events (14) Celebration & Recognition (12)	Social welfare (2) Jokes; humorous (2) Other (13)

In Table 3.16 we present a thematic and frequency analysis of textual posts in the ELTA network. The medium of communication in WhatsApp is predominantly English. a few postings were made in Kiswahili and are not included these in the data analysis in this table. Each theme represents multiple lines of discussion, not the total number of postings, since several entries may accompany each line.

Table 3.16. ELTA WhatsApp Postings: Text	
Sharing teaching strategies (N=18)	Information about meetings & events (N=4)
Teaching materials development (N=4)	Collaborative professional dialogue (N=4)
Acknowledgements and congratulations (N=13)	Other -professional matters (N=9) -non-professional matters (N=22)

The greatest number of postings referred to the sharing of teacher and learning resources. Most of these postings originated from the PLN chair. For example, she posted wall charts (synonyms/antonyms; past tense verbs; contractions, English words, phrases, spelling; figurative language) and encouraged other members to make their own charts, using these or building upon them. She shared access to a website for exploring English spelling, as well. A PDC trainer responded reminding the members that "if teachers sit and collaborate they can make their own search charts". Several members responded asking the PLN chair to assist them in making charts. The English master trainer contributed several posts to this strand offering additional comments and examples.

There were a small number of posts related to materials development, again, largely initiated by the PLN chair. In one case, the chair informed one of the members that she would assist the member in making some charts. Another post was about the use of the concept of hyperbole in developing an English chart. This one prompted a response from a PDC trainer to help clarify the concept and give an example. Another series of posts included text and photos from a conference attended by the chair that promoted a Madrasa Early Childhood Education center early literacy program. The post included examples of learning materials that had been developed and presented by ELTA members, using local materials.

There were discussion lines in this sample of the ELTA WhatsApp forum in which a number of teachers, ELTA leaders and the PDC English Master-Trainer engaged in collaborative dialogue to deepen understanding about a concept. In one case, it began when the ELTA chair posted a chart about use of the letter 'I'. One member said that the chart gave her another idea; another asked for clarification on the use of the letter 'I'. The chair posted back an example of the use of the letter 'I'. She also made a post asking the English Master-Trainer to confirm that she was correct. The MT confirmed, gave another example and also raised a note of caution about the use of the letter 'I'. Another member raised some additional instructional points saying, "The poster is clear since you are teaching capital letters and since 'I' is a sight/tricky word. We teach the children that in a sentence it must be capital unless you are teaching the

phoneme then you use ‘i’.'" To remind ELTA member about the value of collaboration, the ELTA chair also added a poster that had the message: “The most valuable resource that all teachers have is each other. Without collaboration our growth is limited to our own perspectives” –Robert John Meehan.

There was a string of posts with numerous members involved trying to plan for their school cluster and ELTA monthly meetings. This began in response to a query from the ELTA chair asking members. “how are you doing in your clusters?” in anticipation of a monthly meeting rescheduled for the following day. This elicited questions and complaints about the schedule and apologies for missing the meeting due to short notice. One of the PDC staff intervened on the forum apologizing for the short notice due to changes in financial policies affecting the timing of reimbursement for travel allowances to the meetings. The PDC staff then posted a short video clip called “Way to Success” which presented a message about the need to “push hard when you are faced with challenges” with a unisex character pushing a large, heavy ball up a hill, on their own. The following day, the ELTA secretary posted a short report on the meeting. The message was accompanied by photos of the nine members who attended. This final post elicited a few messages of thanks and encouragement from ELTA members who could not make it.

In addition to sharing and discussion of teaching and learning strategies and challenges, participants from all role groups (leaders, members, PDC staff) frequently posted messages of acknowledgements, congratulations for accomplishments, or motivational posters connected to positive learning values and attitudes. Other professional topics discussed within this sample WhatsApp forum included: General PD-professional teaching attitudes, broadening the network to other education partners; Ministry-TSC policies; professional ethics and standards; and work-related social-emotional issues**.** Some postings were unrelated to professional concerns (e.g., political or societal issues, current events, values and morals.

In summary, our brief review and analysis of WhatsApp postings confirms that the medium of social media can serve as a potentially useful forum for exchange of ideas about professional practice, in addition to its utility for communicating about PLN plans and events. As interesting as the professional practice posts are, this sample does suggest that most participants in the forum are contributing to it responsively, rather than proactively, with the majority of posts originating from PLN leaders or PDC staff. Clearly, the range of professional practice topics introduced could be more varied if more participants initiated lines of sharing and discussion themselves, rather than just being responsive to people perhaps perceived as having greater authority or expertise. This could be a reflection of the current state of participants comfort and familiarity communicating with each other about professional practices. It is evident, as well, that the WhatsApp forums serve a useful community building purpose of the PLNs, since they offer a way for members to interact beyond face-to-face meetings in clusters and at AKAM. For this initial review of WhatsApp data, we did not try to track what proportion of the members where participating and who was not, nor did we undertake a network analysis of who was communicating with who. Further research into the use and role of ICT and social media is recommended in future studies.

Chapter 4

PLN Leadership

RQ2. How do the leadership, management and support for implementation of professional learning networks of teachers and head teachers influence network activities and participant outcomes?

This chapter reports and discusses findings about leadership and management of the PLNs at the network association and cluster levels. The findings draw from interviews with PLN association and cluster level leaders and members, from interviews with PDC trainers who support the PLNs, and from our observations of meetings at the cluster and association levels. We begin with leadership and management at the overall network level. Then we examine findings about cluster level leadership. Although the findings on PLN leadership are presented separately for PLN leaders at the association level and cluster levels, it is appropriate to view these as co-leadership of the PLNs.

4.1.0 PLN Executive Committee and Association Leadership

Overall network leadership occurs at the level of each network association and at an inter-network executive group level. Each PLN has an executive group comprised of an association chair, a secretary, and a treasurer. The inter-network Executive Committee consists of the chair and secretary of each PLN (total of eight), and representatives from the PDC team that act as patrons to the PLNs. The networks are formally recognized as professional organizations in accordance with government policies, and operate in accordance with written constitutions that define the organizational structure, governance and election procedures (we did not examine these documents in this study). The inter-network Executive Committee is an informal group, and does not have a constitution as such. In this sub-section we review findings about the Executive Committee and about the work of network leaders. The accounts of leadership at both levels in our interviews were consistent among respondents across the four networks.

4.1.1 PLN leadership selection and preparation

Network association leaders are elected for two year terms by the members of each network in general elections held at and facilitated by the PDC patrons. Membership on the inter-network Executive Committee is automatic for the elected network chairs and secretaries, and changes as leadership changes in the PLNs. The Executive Committee has a chair and a secretary chosen by the members of the Executive. Some of the PLN leaders interviewed had served multiple terms.

There is no formally organized training for network leadership at either level. The original Executive Committee members reported that they had been advised about the expectations for their roles by the PDC patrons. More recently elected and appointed network and Executive Committee leaders said they had been coached informally about the expectations for their roles by incumbent leaders. Several suggested it would be advisable to organize a formal induction process for network leaders at both levels.

4.1.2 PLN Executive and network leader role and duties

We interviewed members of the Executive Committee and the chair of each network and asked specifically about the roles and duties of their roles and their leadership teams.

PLN Executive Committee

The inter-network Executive Committee was established at the initiative of the AKAM-PDC. In principle, the networks do not need a cross-association body to govern or facilitate their work. The existence of this group is partly attributable to the fact that subsidies for the PLNs come through the PDC from external sources to which the PDC is accountable. The PDC has formal responsibility for providing oversight and guidance to their work, as well as a vested interest in their success as extensions of the PLES outreach to teachers and school leaders. As reported in Chapter 1, the history of these kinds of professional associations within the Aga Khan Development Network can be traced to the teacher and head teacher development programs of the Aga Khan University Institute for Educational Development in Pakistan, where as many as eight different associations and an umbrella association were created (Ali Baber, 2005; Pardhan, 2007). Thus, there was a precedent for this model of network organization.

The Executive Committee convenes during the first week of each month on the AKAM campus. We asked members about the purpose and operations of the Executive Committee. As stated by one member the overall "purpose is to share what is found in the different PLNs to create a way forward together…There is a standard format for the agenda…Review the minutes, business arising, PLN reports, PDC reports" (KELG-EL6). The key agenda item is for representatives of each PLN to report on the activities within their various clusters over the past month. Each PLN chair needs to communicate with and obtain the minutes of cluster meetings from their network prior to the Executive Committee meeting. This happens routinely in the context of monthly association meetings that occur in the last week of each month prior to the Executive Committee meeting. Additional communication between network leaders and clusters happens mostly though social media (WhatsApp), text or telephone. Initially, cluster heads were expected to gather separately with their PLN leaders to talk about network-wide activities and plans. That does not routinely happen due lack of time for so many meetings (Executive Committee, cluster meetings, whole network meetings, network leader meetings) and the practical difficulties of transport.

The inter-network Executive Committee meetings are led by the Chair. He/she is responsible for establishing and communicating the agenda in consultation with the four PLN chairs, and with input from the PDC patrons. The agenda is texted to the members prior to the meeting. As noted, the main recurring agenda item is to provide and listen to reports from each PLN about what has been happening in their network clusters and network. With guidance and input from the PDC, the Executive Committee also takes responsibility for establishing a common schedule of network and cross-network meetings for each term and year, and for planning joint events, such as the annual PLN conference in conjunction with the graduation of new PLES program graduates in March, when new members are welcomed into the PLNs.

According to the Executive Committee members interviewed, the PLN sharing reports can lead to joint problem solving discussions and actions in response to particular issues in the PLNs (e.g., attendance), as well as to adoption of interesting activities reported by different PLNs in other networks. This kind of

exchange arises informally and spontaneously out of the network sharing, as illustrated in these anecdotal examples from interviews with Executive Committee and PLN association leaders.

> *Can you think of an example of something that you heard at the PLN Exec level that you took to the Cluster Level?* For example, I heard, at the PLN Exec meeting, someone talking about something called 'diorama' that can be used in different activities or themes. We could use the diorama strategy to think about making a house with different things found at home….toys, animals. I took that same topic to my school…and we made a house. I took this idea to our Central Cluster meeting. Some other members took this idea, but instead of building a house, they built a farm, because this fit better within the context in which they were teaching. (ELTA-T6)

> *Follow-up Q: Can you remember any problems that were discussed at the PLN executive committee that were useful to you and your school?*
> The idea of bringing the children together and talking to them. If we ID problems or challenges in a subject, we bring the children together and talk to them and uplift their standards. We talk to them about teaching them in that subject. Pupils from different schools come together in one place and are taught in those areas in which they have difficulties. (MTA-T2)

> We hear about both challenges and successes. Like, one group reported that one teacher was rarely active and the HT did not allow the teacher to leave that school. We talked through MELA and we said, we would try to ask the HTs to allow that teacher to come to their school, for the benefits of the students…MELA would act as a bit of a facilitator of the transfer. Being on the PLN Executive, you get to know about what many of the teachers of English and teachers of mathematics are doing….and you can bring these ideas back to MELA, as well. (MELA-EL7)

The Executive Committee itself does not establish formal inter-network professional development or school improvement goals and action plans for accomplishing those goals. The Committee does respond, however, to proposals from the PDC patrons to organize and deliver periodic cross-network workshops. The KELG head teachers, for example, collaborated in mobilizing workshops for Kwale teachers by ELTA and MTA members (there are no PDC trained teachers in Kwale). These events were supported with resources from the PDC for materials and transport. In our focus groups we asked specifically about coordination and coherence of activities across the networks, which we had not seen or heard much evidence of during our first two site visits. Responses confirmed findings from interviews and observations that beyond interactions in the context of PLN Executive Committee meetings (where PLN reports are shared), there is little communication or coordination happening between the school leader and teacher PLNs. A MELA member suggested that, "The relationship is really cordial. We know what they are doing, they know what we are doing, and I think we're moving toward the same goal". Another participant suggested that collaboration and coordination happens in cases where teacher PLN members are located in schools whose Head Teachers are PLN members, "They support one another, [for example] supporting the teachers need to go to meetings, etc.". No further ideas were shared concerning potential benefits/risks or challenges of cross-network coherence and collaboration

Apart from the network sharing and submission of cluster minutes, the Executive Committee does not engage in any systematic monitoring of PLN activities and accomplishments. Members of the executive committee reported, however, that the need for more systematic recording and reflection on PLN activities is being urged upon them by the PDC team, including recordkeeping tools to complement or replace conventional minutes of meetings. In the PLN Executive Committee focus group, we also asked about what is being done or could be done to provide evidence of the impact of individual or collective actions by PLN members linked to PLN activity. While Head Teachers, subject panels and PDC staff were named as actors involved in monitoring the implementation of PLN strategies, responses to these questions tended to confirm the relative absence of a formal (or otherwise structured) approach to monitoring the implementation and impact of PLN activities at the school or cluster level, beyond reporting back on professional experiences during cluster meetings (recorded in the minutes).

The need for and value of the inter-network Executive Committee could be debated. As long as the networks maintain a formal relationship with the PDC for recruiting members, for funding to support member participation in the networks (i.e., transport and tea allowances), and for resource and logistical support for major activities that involve the networks (e.g., annual conference, outreach to non-network schools), however, this group serves a useful function. It also serves as a tie to the PDC that legitimates the existence and work of the networks for the members as well as with local education authorities.

PLN association leadership

The primary venue for network association chairs and their leadership teams to interact face-to-face with cluster leaders and the general membership is at PLN monthly meetings on the last Saturday of each month during the school year. In anticipation of those meetings the association chairs communicate with their cluster heads to set the agenda for the meetings, including any matters arising from the Executive Committee meetings and the PDC. This communication happens mainly through WhatsApp, text messages or telephone. In KELG, the association leaders are not able to communicate via WhatsApp because of lack of smart phone connectivity across the rural county to support that application. Cluster leaders may text the chair primarily for utilitarian reasons such as meetings dates and attendance conflicts, and to share attendance records needed to obtain the transport and tea subsidies for their members.

The network chairs lead the meetings, typically adhering to the standard protocol described above. As in the Executive Committee, a major portion of the meetings is devoted to cluster reports from the field. This was confirmed in our observations of several monthly meetings. Some of the cluster leaders directly read the minutes of their meetings to their peers, while others reported more informally. We did not see examples of any extended large group discussion about activities reported, nor any problem solving around challenges identified and reported from any of the clusters as described by some in interviews. The monthly meetings that we observed in March may not have been typical. The meetings happened two days before the annual PLN conference, and the members of each association dedicated most of their meetings to planning and rehearsing their conference displays and presentations, rather than discussing common or individual cluster challenges, or planning other kinds of multi-cluster PLN activities. In interviews we were also told that sometimes the associations invite external speakers from the County education offices to inform them about changes in policies and about other government initiatives. We cannot confirm how regularly this type of monthly PLN activity happens. PLN leaders also talked about joint planning of outreach workshops for teachers and for head teachers in non-PLN schools at their PLN

meetings. Sometimes this happens in response to requests from the PDC, such as teaching methods workshops for teachers in Kwale by members of MTA and of ELTA. Sometimes this originates from the PLNs themselves, such as training deputy heads and senior teachers how to manage procurement of texts.

In summary, the monthly meetings certainly serve an important professional identity and community building function by bringing all the network members together to share and participate in discussion and planning for some association level and even cross-network activities, like the annual conference. These meetings extend the sense membership and participation in the networks beyond the school cluster level. The limitations of our data, both interviews and observations, prevent us from speaking with confidence about any potential professional learning benefits for the members arising from attending the meetings.

One interviewee talked personally about the value of network membership in terms of social welfare, not just professional growth and support. "Also, other times when we have come together as MELA is when a member was ill or dealing with a personal tragedy….we post these on the Wall on WhatsApp and give information to other members to visit. We also sometimes organize harambees to raise money to support our colleagues. This helps to bring us together, as well." (MELA-EL6) This kind of support was directly confirmed in a monthly teacher network meeting that we observed in our final site visit. Virtually the entire meeting was devoted to discussion and decision making about whether and how much financial support the members should provide when one of them experiences a death in the immediate family, such as a parent, a spouse or a child. The discussion was complicated by cultural issues in the local context, such as polygamous marriages and broken marriages, and trust among members. The details are not important for this report, but the fact the members actively debated this topic for an hour is, because it highlights a powerful indirect incentive for active membership in the network communities.

4.1.3 Challenges of network leadership

In our interviews with Executive Committee leaders and association leaders we asked them about the key challenges that the face and cope with in carrying out their leadership roles. The major issues named echo those reported in Chapter 3 (section 3.2.1) as inhibiting participation in cluster meetings, such as PLN member workload and other professional commitments in their schools, scheduling conflicts with County education events, non-cooperative head teachers, distance and transport to meetings, and insufficient economic incentives,. The PLN leaders see encouraging attendance, following up with members whose attendance lags, and problem solving around attendance issues is part of their responsibility as leaders at the association and Executive Committee level. This is an ongoing issue, not one that is resolvable with a single simple solution. Part of the reported rationale for moving monthly PLN meetings off the AKAM campus and into the schools is to make them more accessible to members, in addition to the stated intent to reduce dependency on the PDC for sustaining the PLNs. Similar arguments are used for rotating cluster meetings among cluster schools, rather than always holding them at the same site, even though the suitability of school facilities for those meetings can be variable. One school leader PLN chair reported that members of his PLN sometimes call him expecting him "to answer all their questions", questions that may extend beyond his expertise or resource capacity (e.g., requests for materials for cluster activities) to answer. In such instances the PLN chairs may need to consult directly the PDC patrons before responding. Another challenge, as noted above, is finding ways to document network activities, participation, and impact in ways that can be easily accessed for review and reflection.

4.2.0 PLN Cluster Leadership

This section begins with information about the selection of cluster leaders, and leadership turnover and succession. Then we consider what participating cluster leaders said about their preparation for their cluster leader role. This is followed by presentation and discussion of findings about what they actually do as cluster leaders and the challenges that they encounter in carrying out this role and responsibilities.

4.2.1 Cluster leader selection and succession

Each PLN cluster has a cluster chair and a secretary. These cluster leaders are periodically nominated and elected by the members of the cluster. The period of office for cluster leaders varies across the PLNs. MELA and KELG cluster leaders are chosen for two-year terms. KELG allows for someone to serve up to two consecutive terms. ELTA leaders are chosen for one year terms with no option for reappointment for a second term. This succession policy had only been formalized by the ELTA network the previous year (before terms were indefinite and erratic). Although MTA and its networks were organized while they were still being trained, the election of leaders occurred upon graduation of the first cohort in 2014. At the time of our interviews in March 2015 a general leadership turnover process in MTA had yet to occur. The members reported that the tenure for cluster leaders was uncertain, but would be formalized in a written MTA constitution that was being developed. KELG is the only PLN where members talked about contributing dues and about having cluster treasurers to manage cluster funds and bank accounts. Whether that is common in the other PLNs is unclear.

Cluster leader elections are normally called by the PLN network executive and coincide with the election of PLN executive committee members. The elections take place during a regular monthly meeting at AKAM-PDC. The elections are managed by the PLNs, however, PDC professional staff are on hand to monitor and mediate the elections as needed (this is less relevant at the cluster than at the network level). Although formal elections are held for cluster leadership selection, it is reportedly not uncommon for cluster chairs to be nominated and elected unopposed by acclamation. We interviewed 10 cluster leaders. Five said they were nominated and chosen unopposed to their current positions as cluster leaders.

The rationale given for annual leadership turnover in ELTA was to distribute leadership experience to as many members as possible. With only nine cluster meetings per school year, however, one year may be insufficient for someone in the role to develop and enact ‘leadership’ skills, as opposed to simply managing and facilitating routine cluster meetings and activities. The two-year MELA and KELG policies for cluster leaders have more potential for developing network management and leadership skills.

4.2.2 Cluster leader preparation

Cluster leaders from all the PLNs reported that they had received no formally organized orientation, training or induction, or coaching to enact their roles as cluster chairs when they were elected. As part of their PLES programs, however, MELA and KELG members were all trained in a variety of related skills associated with their roles as school leaders, such as how to conduct effective meetings, organizational planning protocols, and facilitating team decision making and discussions. Leadership skills development was not reported as a component of the PDC English and mathematics teacher programs.

Table 4.0. Teacher Cluster Leader Preparation		
	ELTA	**MTA**
Formal training and orientation	Maybe they had one (an induction program) and I missed (it). But I have not attended. (ELTA-T2)	After we were chosen each cluster head sat with (our PDC mentor) and he gave us the roles, that is, conducting cluster meetings. Then, in case of any member having problems, how to assist them. (MTA-T8)
Informal observation and mentoring	I had to learn from the previous head. Not that we sat and talked, but from what she was doing. So I felt I need to do what my predecessor did. (ELTA-T2) The former cluster leader went through everything. We used to have meetings. We'd see what she was doing. We got a lot from her when we were members (ELTA-T1) Preparation for cluster leadership came partly from my experience as secretary in ELTA and just the informal preparation of being involved in a number of voluntary experiences at the cluster and ELTA levels. (ELTA-T6)	My MTA executive chair, the former cluster chair prepared me. She told me how to get ready, what my roles would be as cluster leader. She encouraged me to be patient with my members and with those above. She prepared me with time management strategies. (MTA-T7)
Other leadership experiences	I also got ideas and tips from my own HT. I also learn a lot from the internet on how to be a good secretary or leader. (ELTA-T6) Apart from ELTA meetings there are many other meetings. So we have seen what a chair person does. (ELTA-T2)	

As illustrated in Table 4.0, preparation for their cluster head roles in the teacher networks occurs through informal observation of how their predecessors enacted the role, as well as the actions of PLN executive chairs at monthly association meetings. A few noted that the duties of cluster chairs and secretaries were similar to the routine duties of leaders in other organizations that they belong to. Some said they received some initial informal guidance about the role expectations and duties from an outgoing chair, from a PLN executive leader, or from their PDC mentors. This kind of initial orientation from experienced PLN leaders, however, was not generalized across the sample of cluster heads interviewed. In the absence of any systematized training, orientation or induction to cluster leader roles in the teacher networks, we wonder about the extent to which the people in these roles are simply managing the meetings and activities of their clusters, as opposed to providing or trying to provide some leadership in that context.

Preparation for cluster leader roles among the two school leader PLNs differs from the teacher groups. First, because they all had prior school leadership experience, managing and leading the clusters was not a new challenge in the same way that it has been for some of the teacher cluster leaders. Second, as illustrated in Table 4.1, leadership training, although not specific to cluster and network leadership, was included in the school leader training programs at PDC and was transferrable to the networks. There was no formal orientation, induction or training for cluster leadership in addition to that.

Table 4.1. School Leader Cluster Leader Preparation		
	MELA	**KELG**
Formal training	There is no training for cluster heads. (MELA-EL5) That doesn't take place. Honestly, I have not been given any guidelines like 'You are supposed to do this.' They just tell us if there's any need in our schools, address it. We have a constitution but I've never seen it. Someone needs to be there to shed light on what we're supposed to do as a cluster head. (MELA-EL2)	The AKAM training from the leadership unit provided some of that training. (KELG-EL5) I knew what to do as a chairman because of the training. Through the training I learned how to identify problems and to use our strengths. (KELG-EL7)

In the literature on school and professional networks, network or 'system leadership' has emerged as a focus of interest, discussion and research. This area of research that may be worth exploring by the PLNs and their patrons at AKAM-PDC with an eye towards the possibility of organizing and delivering some sort of ongoing training focused on network leadership for both the school leader and the teacher PLNs.

4.2.3 The role of cluster leaders

If one thinks of organizational leadership in terms of an individual or individuals who take on major responsibility for ensuring that an organization has clear goals and for taking actions to influence the behaviors and to develop the capacity of members of the organization towards the accomplishment of those goals (Leithwood et al. 2004), 'leadership' may be too strong a word to describe what cluster heads do. Our overall impression, as discussed later, is that decisions within the clusters about cluster goals and activities, particularly those that extend beyond specific cluster meetings, are shared amongst the cluster members. The job of cluster heads is more about managing and facilitating cluster meetings and activities, than about leadership per se. This is not a criticism, rather a comment on the interview and observation data. Indeed, efficient and effective management of cluster meetings and activities so that they are not experienced as wasted time, likely contributes to their sustainability on an ongoing basis.

In their research-based analysis of the power of networks for school improvement, Katz, Earl and Ben Jaafar (2009) speak of four key roles that formal leaders play in networks: (1) setting and monitoring the agenda; (2) encouraging and motivating others; (3) sharing leadership; and (4) building capacity and providing support. We modified those categories in light of our findings as follows.

1. *Setting the agenda and managing logistics*
2. *Communication and motivating others*
3. *Sharing responsibilities*
4. *Building capacity and monitoring improvement*

While the networked learning communities they describe are not exactly the same as the Mombasa PLNs, this simple framework offers a useful guide to presenting and discussing leadership within the PLNs.

In our interviews with PLN cluster leaders, we asked what role they played in organizing and facilitating cluster meetings and activities, who assists them, what they do to motivate member attendance and participation, recordkeeping, and the challenges of carrying out the cluster leader role. The questions and

responses mainly concern the role and duties of the cluster chairs. At a very basic level, the chairs report that they are responsible for scheduling the time and venue of meetings, communicating with members about the schedule and venue, setting the basic agenda of meeting topics and activities, making arrangements for material resources as needed, and making logistical arrangements like refreshments.

Table 4.2. Cluster Leader Role: Setting the Agenda and Managing Logistics	
ELTA I set the agendas of what we're going to discuss in the cluster meeting. I call each member and make sure they know we're meeting in a certain place at a certain time (ELTA-T1) The secretary and I sit down and come up with a topic for discussion and we communicate with the members. We normally communicate through phones. So my role is to organize, decide on the venue for the next meeting. I need to contact the members that we're coming to the schools for the cluster meeting and arrange things like water, teas and snacks. It's the responsibility of the leader. (ELTA-T2)	**MTA** I chair the meetings. I inform members ahead of time, using WhatsApp. The secretary assists by taking the minutes. We all come up with the agenda at the beginning of each meeting. We have a draft, but we review this at the beginning and then add to it with issues arising from the members. (MTA-T7) The cluster head is the time-keeper, sends messages and reminders about the meetings, gives the agenda, chairs the meeting. (MTA-T1)
MELA My role is to organize and make sure that everything is running smoothly for the development of the cluster and improving standards in the cluster. My secretary assists me. We organize and plan activities together. (MELA-EL5) You chair the meeting. You coordinate the contribution. You don't take sides if there are controversies. You make them vote if there is a disagreement. You call the meeting and you ensure the smooth running of that meeting. (MELA-EL2)	**KELG** The chairman, the secretary and the treasurer come together and come up with the program. That starts with the members. When we come together, we discuss and come up with a plan. (KELG-EL2)

As suggested in some of the comments in Table 4.3 and in Table 4.4 below, cluster heads do not set cluster meeting agendas independently. A general agenda for the year is established at the PLN Executive Committee level. The cluster agendas follow that, with flexibility for cluster level interests. Within each cluster meeting, members can modify the immediate agenda, and decisions are made collectively by the members about the focuses for the next meeting. It is more accurate to say that cluster heads are responsible for formalizing and communicating the cluster agenda from meeting to meeting, and for ensuring that the agenda is adhered to or facilitating revisions when the cluster meets.

The cluster heads emphasized their direct role in communicating with cluster members to encourage them to attend and participate in meetings, either through telecommunications or face-to-face. As reported earlier (Section 3.2.1 PLN Member Attendance) the motivation to be active in the PLNs is largely intrinsic (i.e., perceived benefits to professional practice and attitudes). Cluster heads intervene mainly to remind and urge people to come to meetings, and to follow up with those that do not.

Table 4.3. Cluster Leader Role: Communication and Motivating Others	
ELTA Before I set the agendas of what we're going to discuss in the cluster meeting, I call each member one by one and make sure they know we are meeting in a certain place and time. I send WhatsApp messages. Those that aren't on that, I send a text message. If they haven't responded I call them. (ELTA-T1) I play a role by welcoming them and as the leader, I am a role model. I make sure I keep time and this also keeps them motivated to work along with me. This is very important. (ELTA-T6)	**MTA** I chair the meetings. I inform members ahead of time, using WhatsApp. I also use the WhatsApp to inform members of other information that comes from the Executive or MTA levels. The members have owned it. They are all just asking when is our next meeting. They are very ready. I just give encouragement. (MTA-T7)
MELA I make advocacy to my people and indicate through phones that we're going to have a meeting. I text them to remind them of the dates and venues.(MELA-EL2) In (cluster name) when we have a date for the meeting and we post it on WhatsApp with the place and date. (MELA-EL4) Not all our members come. Members of older cohorts are leaving. We try to look for them. We call them and say please come to our meetings. Sometimes they come. (MELA-EL10)	**KELG** The members come willingly, but you always have to remind them of the importance. As human beings, you're pulled away, so you remind them. If they don't show up, I visit members after and share information about what they missed…and to be sure to come next time. (KELG-EL7) I text members. They don't use WhatsApp. (KELG-EL9) The issue of participation. It's good in the cluster. They normally discuss their issues and agree on what to do. On that I get good support from the other head teachers. (KELG-EL5)

The use of telecommunications, especially WhatsApp, is constrained for KELG members because of limited connectivity across the rural county. As previously reported in section 3.2.1, PLN Member Attendance, the active PLN participation among KELG and MTA members very high (88% MTA, 96% KELG graduates of their AKAM-PDC programs), in contrast to ELTA and MELA (about 50% each). As a result, the need for strategic action by cluster heads to encourage attendance is lower for the former.

We asked cluster heads with whom they shared responsibilities for managing and leading the clusters. Of course, they mentioned the cluster secretaries and for KELG the cluster treasurers. In addition, they talked about delegating and sharing responsibilities for running meetings and for taking the lead in carrying out some cluster initiated activities.

Table 4.4. Cluster Leader Role: Sharing Responsibilities	
ELTA I organize the cluster meetings. I assign duties, who will pray before we start the meeting. I rotate responsibilities. Sometimes I say 'OK, you're chairing the meeting and then I can sit back and relax.' (ELTA-T1) You can appoint anyone to assist (in leading cluster activities). I can say that 'So-and-so today you are the chair for this meeting'. Anyone can assist, not only the chairperson. (ELTA-T2) The members also assist. For example, Madame (name) who was a former chairperson of ELTA, is also in (cluster name). She helps in leading some activities. In January, she led a session on material development. Sometimes she helps with leading the meeting while I take notes for the minutes. (ELTA-T6)	**MTA** The male member of our cluster spreads information verbally to other cluster members who don't have WhatsApp, because they are in the same area. The secretary assists by taking the minutes. We have divided the roles in the cluster. One leads lesson development. One coordinates teaching workshops. One coordinates material development. We are distributing responsibilities and leadership. You don't do everything alone. (MTA-T7) If I'm not able to come, I appoint someone else ahead of time so that they can prepare themselves. I don't lead all of the activities. For example, if one of the members is really good at materials development the group would say that person should lead that activity. (MTA-T3)

Table 4.4. Cluster Leader Role: Sharing Responsibilities	
MELA	**KELG**
My secretary assists me. We organize and plan activities in our cluster. (MELA-EL5) In case you are not here, then somebody takes over to chair the session. You should not let the meeting fail because you are not there. (MELA-EL2) We don't change the overall leadership, but what we do change is who might be directing a certain session. I might take the lead on strategic planning. If someone is good at action research, they might take the lead on that. Same with benchmarking. (MELA-EL8)	The (cluster) is organized by the chair. He has three people who work with him as a committee…the secretary and two others who help organize activities. With different activities different members are given different responsibilities. I was given the responsibility of organizing the student government training. (KELG-EL1) Mr. (chair) leads the meetings. But many other members take the lead in different activities. For example, for composition writing one of our members is a national marker, so he leads those workshops or activities. The leadership of activities changes by activities. (KELG-EL3) Some logistical support from the secretary and treasurer. (KELG-EL5)

The basis for distributing leadership for particular activities is not described as random, nor based on volunteerism or favoritism. The common strategy is for the cluster heads and members to look for who within their group has the expertise or access to external expertise to lead particular activities.

Shared responsibility is not just about distributing management and leadership tasks. A key component of sharing responsibility is shared decision-making about cluster plans and activities with cluster members. We asked both cluster heads and members about cluster decision-making processes.

Table 4.5. Cluster Leader Duties: Shared Decision-Making	
ELTA	**MTA**
As chair I work together with the members. The main agenda comes from the members. They bring issues to discuss. We also might plan activities through the PLN Executive Committee and they are passed down to ELTA and MTA. Some ideas are passed down from the PDC that ELTA members have to work on. More of the ideas come from the members from different challenges they are facing so we can look for solutions together. (ELTA-T6) At the cluster level it is the cluster members for decisions about the scheduling, agenda and activities of cluster meetings, generated by the cluster head. When we meet we are supposed to come up with the agenda for the next meeting, so that when we go out to our schools we know what we are going to talk about the next time. (ELTA-T2)	My role is to coordinate the agenda and keep track of items under discussion. (MTA-T8) The chair leads the agenda and the members discuss the items together…standard meeting format. (MTA-T3) The chair leads the meeting. They encourage participation. They bring the meeting to order. Sometimes everyone wants to talk. They stick to the agenda. Sometimes you can drift, but the cluster leaders make sure it's on point and the objectives of the meeting are met.
MELA	**KELG**
Democratically. We rule by majority after having discussions. (MELA-EL2) Discussing and sharing with others. When I'm there I'm not standing there as a leader. You don't notice who is the leader. We all sit together and discuss. MELA-EL5) (Name) is the head, but she is not a dictator. We agree or agree to disagree. She asks what we think…a guider, a director. She also leads us to see if we are on the right track and at the right	The chairman calls for the meetings, but the activities it's the group members. We group members plan activities and the schedule when they will take place. (KELG-EL9) I take issues up at meetings as identified by members in advance. I lead discussion to move towards construction of solutions. (KELG-EL5) My main thing is to call the meeting. Give my point of agenda and allow others to add their own items. Then I create a

timing. (MELA-EL8) The first meeting of the year we discuss and come up with a strategic plan. The strategic plan is what guides us. (MELA-EL10)	situation where everyone contributes their thoughts. (KELG-E7)

As illustrated in Table 4.5, there was consensus across the four PLNs that decisions about cluster schedules, topics of discussion and activities were group decisions, not autocratic decisions made by cluster leaders. The role of cluster heads is to keep discussions focused on agreed upon agenda items, and to facilitate discussion to ensure widespread participation in discussions and decisions among members.

Building professional capacity within the network is the fourth key role that network leaders can play according to Katz, Earl and Ben Jaafar (2009). PLN cluster leaders and members did not explicitly identify building network member capacity as a responsibility or focus of leader behavior at the cluster or association levels. Support for development of the professional capacity (knowledge, skills, attitudes) of members and for building the professional capacity of educators to improve their schools is the main purpose of the PLNs. This is strongly illustrated in the findings on PLN goals, motivations, and activities and outcomes presented in Chapter 3 and in Chapter 5 of this report. Cluster leaders and members, however, did talk about efforts to track and strengthen the effectiveness of the networks through formal and informal monitoring and evaluation of the implementation and effects of PLN activities.

Table 4.6. Cluster Leader Role: Developing Capacity and Monitoring Improvement

ELTA	**MTA**
We have records of each discussion. We have minutes. We review them. We monitor. At the start of meetings we review what happened at the previous one and then we pull out new challenges and go through them. (ELTA-T1) The minutes of the meeting are recorded and kept. It's the secretary that does that. Before the ELTA meeting at AKAM we use the minutes to describe what transpired in our cluster meeting. (ELTA-T2)	We try to monitor. We usually take a photo, sometimes even short videos when the cluster is doing activities. We keep minutes for each meeting, including attendance. (MTA-T8) The secretary uses the ECoP tool and keeps the agendas, minutes, attendance and any other related material. The minutes and attendance recorded are used for payment from AKAM for travel allowance and for cluster tea and snacks. (MTA-T7)
MELA	**KELG**
If we fail, then we discuss it and go around again and go to 'Plan B' and we discuss it. 'Where did it go well? Where did it fail? What was the cause?' (MELA-EL2) Apart from the minutes that we're doing, we also record events and record the outcomes and reflections. We keep this in a file. We also capture clips to show this happened here. In WhatsApp we had some clips to show what was there. (MELA-EL2) If we have a workshop we make a follow up. I visit the schools. Or when we meet we discuss how each school is doing. I get the results from my colleagues during discussions. I get the means scores for subjects like English and composition. (MELA-EL5)	We take minutes at each meeting. You have to bring what you discussed at the last meeting and the members have to accept that it was true. Then from there, because we agreed to do something…so we have to do it. So that's one way that we monitor. We said we would do it. Was it done. What's the proof? (KELG-EL5) The secretary does the record keeping. The information helps us to know, to plan to act and to give back. I mean to report back on whatever we've done. We use it to see the impact of what we've done. Could we do better. And then we report back at KELG meetings on what we've done for that period of time. So that helps us review also. (KELG-EL7)

As illustrated in Table 4.6, all the PLNs report that they are rigorous in keeping minutes and other forms of records that document PLN cluster activities. This is a primary duty of the secretaries. Minutes and

attendance records serve a utilitarian function as the proof needed to get compensation for transport and for refreshments from the PDC. More importantly, the minutes of cluster meetings and activities serve as mutual accountability tools for the members themselves. Members know that minutes of prior meetings are reviewed at the start of each meeting, and that they are expected to report on follow through with any decisions and action plans in their schools. The process is replicated at the association level when clusters report on their monthly activities (confirmed in our observations of monthly meetings).

Cluster leaders with the two school leader PLNs talked about using PLN minutes and records as a basis for joint reflection on the successes, failures and ways to improve upon cluster activities implemented in their schools. While one might critique the database for reflection as largely anecdotal, we were impressed by the reported efforts to actively monitor and reflect upon the effectiveness of PLN initiatives. This is in addition to the school level action research and strategic planning activities among the school leader groups reported in Chapter 3. Norms of ongoing monitoring and reflection on PLN activities appears to be more prevalent in the school leader groups than the teacher groups. This may relate to the fact that the school leader groups plan and carry out more school-wide and multi-school initiatives in their clusters, whereas PLN work in the teacher groups tends to be narrower in focus and outreach, often limited to the members themselves or to small groups of peers in their schools or neighboring schools.

4.2.4 The challenges for cluster leaders

We asked the cluster leaders interviewed to talk about the main challenges they face carrying out this role.

Table 4.7. Cluster Leader Role: Challenges

ELTA	**MTA**
Reaching out to all the members is a challenge. Since program started this is the seventh cohort that is graduating. And now I have to reach out to all members. I don't have money to go out and look for them all. I'm expected to have fare to go and find them, but I can't. It's hard to reach and include them all. (ELTA-T1) Maybe coordinating the members, because you are very busy. And I don't have enough funds to put credit in my phone and speak to them. (ELTA-T2)	So for the challenge is the time we meet. The minimum time we meet is two hours. But sometimes we have traffic jams and people sometimes leave early to avoid the jams. It can take hour to get home after the meeting. We have families, and we still have to prepare for the classes next day. (MTA-T8) Challenge to make everyone feel comfortable. We are mixed up the old and the young. So, I have to go down and they have to come up to each other. We want to learn what they know. I believe there are things that her generation knows that I don't. Sometimes they could fear me, I've done a degree. (MTA-T8)
MELA	**KELG**
The major challenges for me as a cluster leader. The head teachers coming for meetings, sometimes it's hard. Sometimes they'll say they can't meet. The challenge now is commitment. Members of older cohorts are leaving. (MELA-EL10)	The challenges I face as the chairman. Especially when I call people for a meeting and they fail to come. I can't punish them. It's become a challenge. Another challenge is that because we normally have some money that I have to collect from members for the clusters to have activities move smoothly. It's become a challenge because I don't receive that money at the right time to organize these activities. (KELG-EL5) When you plan something and then the resources are limited. Some activities need resources to make them work. So when resources are limited you can't meet your goal. (KELG-EL7)

Cluster leaders from the two longest standing PLNs (ELTA and MELA) emphasized the challenge of communicating with and sustaining the participation of graduates from earlier PDC cohorts, as the

number of potential members grows with each cohort and as older members drop out. Leaders from MTA and KELG spoke less about the challenges of encouraging participation than about practical constraints of personal time and resources that hinder PLN work. One identified breaking down traditional cultures of teacher seniority as a challenge for teacher sharing in her cluster. Three cluster leaders said that there were no challenges, but all were newly appointed at time they were interviewed.

In this chapter we reviewed findings about leadership in the PLNs at three levels, the association, the cluster, and the cross-PLN Executive Committee. The associations and clusters have standard organizational structures including chairs, secretaries and treasurers, standard expectations for the formal duties of the individuals occupying these positions, and for leadership succession through elections. Members did report some concerns about leadership succession associated with micro-political issues of leadership tenure and cliques within their organizations (common to most organizations), though this did not seem to be a major impediment to the functioning of the PLNs. Another common issue raised across the PLNs was the absence of any formal training for network leaders in regards to their responsibilities for managing and facilitating network meetings and dealing with issues related to member attendance. Based on our analysis, we concluded that the main role of PLN leaders currently is to manage network activity at the different levels. We questioned whether this constituted 'leadership', and how leadership at the association and cluster levels might be enacted in a way that continues to respect the collaborative ethos of the networks, rather than a hierarchical approach. A final leadership concern relates to the purpose, structure and sustainability of the inter-network committee. We return to these topics in Chapter 7 in our discussion of PLN sustainability and in our recommendations to the PLNs in Chapter 8.

Chapter 5

PLN Participant Outcomes

RQ4: What impact do the activities and communication patterns of professional learning networks of teachers and head teachers have on growth in participant expertise and sense of professionalism?

Data for our analysis of professional learning network participant outcomes for teachers and head teachers include personal interviews and focus groups with PLN members recruited from the cluster meetings; personal interviews with trained teachers whose classrooms we observed and with head teachers in their schools; and our classroom observations of teachers who had participated in the English and mathematics in-service programs at AKAM-PDC and teachers who had not yet been enrolled in those programs. These data were supplemented by our focus group interviews in the final visit with other PLN members.

Broadly speaking, we looked for evidence of impact on PLN members' professional expertise (professional knowledge, skills, beliefs) and professionalism (self-confidence, commitment, collegiality). We begin with a report and discussion of findings about PLN impact on teachers in ELTA and in MTA. The second major section of this chapter examines and discusses findings about impact on head teachers from MELA and KELG. In Chapter 6 we consider what PLN respondents, the PDC staff and external stakeholders said about school effects, including student impact, beyond these individual outcomes.

5.1.0 Teacher Outcomes: Professional Practice

Teacher outcomes: professional practice (interview data)

In the interviews, we asked ELTA and MTA members what difference participation in PLN activities had made in their professional knowledge and skills as teachers. Teachers all highlighted multiple dimensions of impact and change in their classroom practice, and their responses were evenly distributed between English and mathematics teachers. These clustered broadly into four intersecting categories, as follows:

- Teaching strategies and materials
- Responding to student misbehavior and misunderstanding
- Differentiated instruction
- Lesson planning and preparation

Teachers had difficulty attributing reported impact on teaching and learning directly to participation in PLN activities. Rather, they talked about the effects of participating in cluster meetings and other PLN activities more in terms of reinforcing the use of ideas and practices learned originally in their training.

Table 5.0. Teacher Outcomes Professional Practice

	ELTA	**MTA**
Teaching strategies: small group work	"Previously I would have just taught the learners as a whole group. Now I put the learners in small groups and do a lot of collaboration. And I also change the groups around quite often, and I consider the gender. I also consider the abilities and I mix the bright and the weaker learners. I also learned that the	"I have learned even more since the training. For example, we were taught cooperative learning. We have now implemented it in our clusters through our sharing. We discuss it in our clusters and then we take it back to our classroom. When we put the students in groups and they share their ideas and

Table 5.0. Teacher Outcomes Professional Practice		
	ELTA	**MTA**
	learners can learn better when they are taught by their peers. That's why I use this collaboration method." (ELTA-T8)	work as a team…it builds their confidence." (MTA-T3)
Teaching strategies: use of teaching and learning materials	"Now see the necessity of using materials. Materials meaning you have to prepare your lessons and get all that you need in place, so that you program will run smoothly. (ELTA- T2)	"The other teachers come to see my classroom…They say 'this classroom is so beautiful' and many of them are now starting to make teaching materials. The head teacher gave me a trophy at the Prize Giving Day last year for materials development." (MTA-T12)
Teaching strategies: active learning methods	"I acquired a lot as a teacher of English on how we can have authentic communication… This is where you give children a chance to express themselves. They are free and they can express themselves and then from there they are able to share with members from the group. They learn a lot from each other." (ELTA-T) "I can now manage large classes because I like the choral drilling. When there are so many children in a class, some talk under the desks. But when you use the choral drilling technique then children must participate. I got this from PLN activities." (ELTA-T7)	"I don't just go to class and teach like I used to do. Now I go to class with materials. I try to engage more of my learners. I use cooperative learning. I have used cognitively-guided instruction. I try to develop three-dimensional materials to use in my class. I try to use songs. At the PDC we came up with 60 songs about math. We sometimes talk about these songs and remind each other in cluster meetings." (MTA-T5) "We don't teach math with a book and chalk. It has to be fun. We help the children learn with more activities. It has to be guided. We make the child to think. We don't think for them anymore." (MTA-T3)
Responding to student misbehavior & misunderstanding	(no references)	"I have changed my attitude towards pupils. (For example)…I have a student in my class who never used to come...and before I came to AKAM I would punish that student, not knowing more about the student...I called the child and we talked and I realized she had problems at home. And I encouraged her and now she comes to school. I have given her responsibilities and now she feels a part of us." (MTA-T7) "The way to handle children… Sometimes they are so rowdy and they get you upset, but I have learned to cool down my temper. Now I listen more to the children. I come down to them to see where they are stranded, instead of shouting. We talked about this in MTA cluster meetings." (MTA-T12) "Because of our experience with the training and with the PLNs, we have learned to be not so fast in judging. We have learned to listen more to the children, and even to think about it first before we make a judgment." (MTA-T11) "I used to be impatient with learners because they were not going as fast as

Table 5.0. Teacher Outcomes Professional Practice		
	ELTA	**MTA**
		the syllabus. I have learned to take time and to be patient with my learners, and to use different methods with learners who are taking a long time to learn things." (MTA-T4)
Differentiating instruction	"Before I went class with a lesson, but now I think of all of the students in my class. I'm not planning for 30 children. I'm planning for one child. When I'm planning I know I have to cater to all of the learners in my classroom…those who are visual (learners).. those who are 'word smart'… those who are body/kinesthetic…so that by the end of the lessons all the learners have gained something from me." (ELTA-T5)	"I don't go to class without arranging for activities to cater to all of the learners in class." (MTA-T3)
Lesson planning and preparation	"Now I can plan my lessons early and have all of the materials required. From the ELTA and the PDC we learn that it's very necessary to be prepared for your lessons." (ELTA-T2) "Now when I plan for the lessons I know that I have to cater for each child in the classroom, because I know all of my children." (ELTA-T5)	"I now use more detailed lesson plans…different methods of teaching that I never used to apply." (MTA-T7) "My attitude has changed. For example, I can't go to class without my lesson plan." (MTA-T3)

In terms of *teaching strategies*, teachers commonly talked about the *use of small group work*. While some described small group work as a classroom management strategy for teaching large classes, others emphasized the benefits of small group work for differentiating instruction and for promoting greater and more inclusive student involvement in their learning through teamwork. Teachers also commonly referred to the *development and use of teaching and learning materials* as a change in classroom practice.

Other than small group work and the use of teaching and learning materials, teachers talked about the implementation of teaching *strategies that engage students more actively in their learning*. These comments were more idiosyncratic than generalized across the sample of teacher respondents. As illustrated in Table 5.0, teachers are not only learning alternatives to traditional whole group methods of teaching, but also ways to enhance and improve traditional teacher-centered methods in the PLNs.

Many of the teachers interviewed emphasized that their *attitudes towards students as learners*, and their response to children who they previously might have ignored or treated as discipline problems had changed dramatically as a result of their training and interaction with peers in the PLNs. Rather than making assumptions and disciplining the students as they did in the past, teachers said they were *listening more to students* to understand the causes of problems in student learning and behavior, and taking action based on what they learn. This outcome was referenced mainly by MTA teachers, perhaps because they learned to recognize the value of having students explain their reasoning when solving math problems.

Another commonly reported teacher outcome of their PDC training and PLN participation is effort to reach and teach all children in their classrooms through *more differentiated instruction*. It was not clear in

the interviews specifically what kinds of teaching strategies teachers were employing to differentiate instruction, particularly in classes with large numbers of pupils. Clearly, however, the teachers report that they have experienced a change in mindset in terms of their professional responsibility for ensuring that all students are learning, as opposed to simply delivering a lesson.

Given the kinds of changes in classroom practice described (e.g., small group work, use of learning materials, greater variety of teaching methods, differentiated instruction), the PLN teachers emphasized that they now spent more time *planning and preparing for lessons*.

In sum, the teacher interview data provide clear self-report evidence of changes in classroom practice as a combined outcome of their training at AKAM-PDC and of their ongoing participation in PLN activities. These include changes from traditional teacher-centered large group instruction to teaching methods that are more student-centered and activity-based, including small group work and the use of learning materials; planning and implementing more differentiated instruction to accommodate variation in student learning styles and needs; taking time to listen to students with learning and behavior problems before taking action; and investing more time in lesson planning and preparation to incorporate these changes. It is not possible from these self-report data to say how expertly they understand and use these practices.

Teacher outcomes: professional practice (classroom observation data)

Table 5.1 provides an overview of classroom observation ratings of six ELTA, six MTA, and 12 comparison teachers in the same schools using the Classroom Observation Tool (COT) developed with PDC trainers for this study (see section 2.2.4 and Appendix 5). As explained earlier (section 2.2.4), the COT requires further validation, and would need to be applied to a larger sample of participants to enable more than visual inspection of the rating scores for obvious patterns of similarities and differences. The findings here are not presented with claims of statistical significance where variations are noted. There are, nonetheless, some obvious differences between the PLN teachers and the comparison teachers.

The scores presented in Table 5.1 are the average scores for the teachers observed (ELTA, MTA) and then the combined group of PLN teachers and comparison teachers (CDF). The comparison teachers were recruited from a sample of teachers who were participants in weekly "curriculum discussion forums" organized and facilitated by the PDC. They had not been participants in the 400+ hour PLES programs. The full set of ratings for each teacher observed are provided for reference purposes in Appendix 6.

Table 5.1. Classroom Observation Findings

COT COMPONENTS	ELTA (N=6)	MTA (N=6)	PLN (N=12)	CDF (N=12)
PART 1. CLASSROOM CLIMATE				
Child friendly(G)*	3.8	3.8	3.8	3.0
Teacher interest	3.5	3.8	3.7	2.5
Recognizing student work(G)	3.7	3.8	3.8	2.6
Positive discipline (G)	3.5	3.4	3.5	2.7
Lesson pace	3.0	3.9	3.5	3.5
PART 2. INSTRUCTIONAL & ASSESSMENT STRATEGIES				
A. DEMONSTRATIONS; EXPLANATIONS				
Clear explanations	3.3	3.6	3.4	3.2
Teacher modelling	3.5	3.5	3.5	2.8
Giving examples	3.1	3.6	3.3	2.9

Table 5.1. Classroom Observation Findings				
COT COMPONENTS	**ELTA (N=6)**	**MTA (N=6)**	**PLN (N=12)**	**CDF (N=12)**
B. INCLUSION &DIFFERENTIATED INSTRUCTION				
Differentiated instruction (G)	3.2	3.1	3.1	2.0
Inclusive language (G)	2.5	2.7	2.6	1.8
C.LEARNER ENGAGEMENT				
Group work (G)	3.8	3.6	3.7	2.4
Questioning strategies	3.3	3.3	3.3	2.3
Higher order thinking strategies	3.3	3.0	3.2	2.6
Student presentations (G)	3.3	3.4	3.4	2.8
D.DIAGNOSTIC & FORMATIVE ASSESSMENT				
Check prior knowledge	3.7	2.8	3.2	2.3
Check for understanding	3.2	2.9	3.0	2.5
Constructive feedback (G)	3.2	3.4	3.3	2.5
Lesson synthesis	3.5	2.8	3.2	2.0
PART 3. USE OF INSTRUCTIONAL RESOURCES **				
Learning materials & use (G)	3.5	3.0	3.3	2.2
Technology infusion (G)	**	**	**	**
OVERALL AVERAGE SCORES***	**84.5**	**81.6**	**83.1**	**62.4**

*(G) = any component that included gender responsive language in the rubric scales

** The *Technology infusion* item was not calculated due to the large number of NAs given by assessors

***The overall average scores are adjusted to take into Not Applicable ratings for a few teachers in some components. The formula for calculating the overall average score is the sum of the total scores for all components divided by the number of components scored, multiplied by 4 and then by 100.

There are few notable differences in the average component and overall ratings between the ELTA and MTA teachers. One exception is for 'lesson pace': the MTA teachers were consistently rated 4 for this component while the ratings for ELTA teachers varied from 2 to 3.5 (with only one 4). We cannot interpret this as a function of teaching mathematics versus English, because the CDF teachers all scored high on lesson pace as well, and that group included observations of both mathematics and English lessons. A second area of difference between ELTA and MTA teachers was for 'giving examples'. Again, the mathematics teachers scored higher on average (3.6 vs. 3.1) and the ratings for math teachers were more consistent (3 to 4). The ELTA teacher scores for this component were more variable, ranging from 1 to 4. The final notable area of differences between ELTA and MTA teachers was in diagnostic and formative assessment practices. The average ratings for MTA teachers were lower for 'check prior knowledge' and for 'lesson synthesis'. Inspection of the individual ratings (Appendix 6) shows that difference in average scores for these two components was largely attributable to two of math teachers.

The more substantial pattern of difference is between the PLN teachers as a group and the comparison group. The overall average score calculated for the PLN teachers was 83.1 as compared to 62.4 for the CDF teachers. The differences between PLN and CDF teachers were consistent across most of the teaching components assessed. The average ratings were 1 or more points higher for PLN teachers for nine of the 19 components assessed, and between .5 and .9 points higher for most of the others. The most notable differences between the PLN and comparison teachers, with consistently higher ratings for the PLN teachers (more than a full rating point difference on average), were for the use of 'group work' and 'questioning strategies', demonstrating 'teacher interest' and 'recognizing student work', 'check prior

knowledge' and 'lesson synthesis', and 'learning materials and use'. One component for which the two groups scored equally high was for lesson pace, which is perhaps not surprising since all experience external pressure for syllabus coverage, regardless of teaching methods. Relatively speaking, the most challenging area of practice for all teachers was for 'differentiated instruction' and 'inclusive language' (which assessed teacher receptivity to and use of local languages in the classroom). Even so, the average ratings were notably lower for the comparison group teachers in these two components of teaching. Although the rubrics in the observation instrument include assessment of gender responsive teaching for many components, differences related to that cannot be determined from the rating scores alone. In future, use of the COT assessors would need to draw that dimension of assessment out in their anecdotal notes. The classroom observation findings are consistent with teacher professional practice outcomes reported in the interviews in regards to the use of small group work, use of low cost learning materials, and teaching strategies to encourage active learning, student interest and engagement. The comparatively lower ratings for 'differentiated instruction' echo the lack of specificity previously noted in the way teachers talk about how they are differentiating instruction to accommodate the diversity of student characteristics and needs.

As explained, the teaching patterns observed for the PLN teachers cannot be interpreted strictly as an 'outcome' of their participation in the networks independent of their prior PLES training. Indeed, a major goal of the PLNs (section 3.1.0) was to enhance sustainability of practices that they learned during the PLES sessions and to help them adapt those practices to their normal school and classroom contexts. The fact that the ratings for nearly all components of practice assessed are relatively high (between 3 to 4 on a 4 point scale) for most of the PLN teachers, however, provides clear evidence that these teachers are in fact implementing what they learned in the PLES program. Given what is known from the teacher development literature about the importance of follow-up support for implementation of new teaching methods, it seems unlikely that the ratings would have been as consistently positive without the PLNs.

5.2.0 Teacher Outcomes: Professionalism

We asked the teachers interviewed how participation in PLN activities affected four dimensions of teacher professionalism: (1) their confidence as teachers; (2) their openness to collaboration with other teachers; (3) their commitment to teaching as a career; and (4) their thoughts about ongoing professional learning as a component of teachers' work. It is difficult to attribute the reported outcomes to teacher involvement in ELTA and MTA activities independent of their original AKAM-PDC training programs. It is more appropriate to think of PLN participation as reinforcing, sustaining and enhancing the impact of their initial training on teacher professionalism and their continuing work in schools. Some responses were uniquely, or mostly reported by women. Such findings, however, cannot be generalized as gender-based differences, because there are so few men in the teacher PLNs and in the interview samples.

5.2.1 Teacher confidence

Many of the teachers interviewed reported that their confidence as teachers had increased as a result of their participation in the initial training and in the PLNs. They talked about various ways in which this increased confidence manifests itself in their lives. Their comments about professional confidence intersected with other dimensions of professionalism, notably with communication and collaboration with colleagues and with beliefs about their own potential for ongoing learning (see 5.2.2 and 5.2.3 below).

Teachers reported increased confidence as teachers in terms of:

- Professional knowledge and skills
- Professional communication

Table 5.2. Impact on Teachers' Professional Confidence		
	ELTA	**MTA**
Professional knowledge & skills	This has really boosted my confidence. I was confident before, but now it's confidence plus. Now I know I need to have the objectives for the lesson and get them right. (ELTA-T7) I have confidence. I can tackle any problem pertaining to English as a subject. I'm open and free. (ELTA-T3)	It has given me more knowledge and skill to interact with learners. It equipped me with knowledge and how to deal with learners. (MTA-T3) I am a very confident teacher now. Especially when I look at the learners that I had when I was doing the course. The time takers that were there. I had to exercise great patience. Then I could see the impact through my learners. There is nothing more satisfying when a weak child that you've been trying to help improves. (MTA-T5)
Professional communication	It has helped improve my confidence. We are able to be good listeners, and now we can stand in front of people and talk and we can communicate…This is because of ELTA. (ELAT-T2) It's made me confident. I have confidence when I'm talking to my fellow teachers. I even feel like I could be a school head now. I've learned so much." (ELTA-T12)	It gives you a lot of confidence, because when you are sitting beside your colleagues and you start discussing the issues…and you get to share and you realize that you are doing it well. I gives confidence that you're on the right path (MTA-T11) I used to see myself as a teacher with no voice at the school. Now I am able to address, to stand in front of teachers and address them…and they are able to listen. I am able to be even sent out with the HT to present about the school. It has made me stand tall. (MTA-T1)

In terms of improvement and confidence in their professional knowledge and skills, the teachers talked not only about the confidence boosting effects of the acquisition and implementation of new knowledge and skills in teaching, but also of feeling confident in their ability to solve problems of teaching and learning in the classroom individually and collaboratively through interaction with colleagues in their PLNs. They also spoke of the sense confidence in themselves as teachers that comes from seeing positive effects on student learning of practices and ideas learned and implemented in training and in PLNs.

Generally, the teachers' comments seem to communicate that they have a greater sense of agency, an ability to control and impact how their students learn, which they attribute to participation in the PLNs. We note that these comments are uniformly framed in terms of their ability to adjust their teaching to the diversity of learners. They are more learner-centered rather than focused on change in curriculum content knowledge and teaching methods per se. That is, the growth in professional confidence stems from their improved sense of efficacy in reaching and teaching all students, not simply in the delivery of instruction.

The reported effects on teachers' professional confidence were not limited to teachers' who began their training at AKAM-PDC with little confidence in their professional knowledge and skills. At least two

teachers said that they were already confident teachers, but that their sense of efficacy had improved even more. We also note that all references to positive impact on professional confidence came from teachers with 11 or more years of experience in our sample. One might imagine that less experienced teachers would gain the most from participation in the PLNs, but the data suggests this is not the case. The finding that the professional benefits of participation in the networks extend to experienced teachers, and not simply to novice and low capacity teachers is a positive message for the value of the teacher networks.

Teachers associated their feelings of increased confidence with the opportunities provided in training and in PLN activities to engage in professional communication with colleagues and supervisors. The interaction of professional communication with confidence as teachers is complex. First, the very act of talking with other teachers about their classroom experiences and practices leads to greater clarity and certainty about what they do. Some teachers emphasized that communication with colleagues affirmed what they are doing and thinking. When other teachers value what you say and do that leads to increased confidence in one's actions and ideas. Others highlighted that they learned new ways of teaching and responding to challenges in the classroom through communication with other teachers, which in turn strengthened their sense of confidence as teachers. Much of this communication occurred through the opportunities to collaborate with colleagues in the PLNs and in associated schools.

5.2.2 Norms of professional collaboration and teacher leadership

The teacher responses suggest that active PLN teachers value opportunities for professional collaboration with other teachers not only because it boosts their confidence as teachers, but also that they have come to see teacher-teacher collaboration as a professional norm, what good teachers do! Notably, they spoke about school-based collaboration with other teachers, as well as collaboration within the networks. The

Table 5.3. Norms of Professional Collaboration and Teacher Leadership

	ELTA	**MTA**
Professional collaboration	I can say that my confidence has been helped a lot and I'm always prepared to work with any visitor, any teacher or any learner. Working together. (ELTA-T6b) For example, we have problems of marking compositions. I have 76 pupils and I have to give them two compositions a week. So sometimes we share ideas on how best we can help these pupils. (ELTA-T3	Before going to the cluster meetings I was very shy. After being part of the cluster my confidence in my own abilities and in working together with other colleagues in my school and across the cluster and larger PLN has really increased. When you have to share your own experiences and ideas in front of the other cluster members or at monthly meetings, it builds your confidence. (MTA-T15) Before I couldn't stand in front of a crowd and be free and even facilitate. But through that learning process, sharing, seeing others, I have developed a positive attitude and I can say I improved. (MTA-T9) (Participation in MTA) activities has taught me how to share with others. Before, whatever I learned was for me for my own good. But now I know that it's not for me. It's for the learner, and I can help learners by sharing with other teachers. (MTA-T4)

Table 5.3. Norms of Professional Collaboration and Teacher Leadership		
	ELTA	**MTA**
		When you are alone in the school and a challenge comes, you might think that maybe it is the children. But when you go out and share, you realize that it may be something that you are doing or not doing in your teaching practice. If children are behaving differently in other teachers' classes, what is it that they are doing differently. (MTA-T11)
Teacher leadership	We normally share what we have been learning or talking about in the clusters and they (other teachers in the school) accept them positively. Many of them adopt some of these ideas. (ELTA-T8)	It has brought great things because of mentorship. I can mentor my other co-teachers. I come and share what I have learned in the cluster meetings at AKAM. (MTA-T9) It has made me wanting to reach even more teachers to let them know. To encourage others. We even went as far as Kwale to mentor teachers in some of the rural areas. My confidence came in there, because I was able to mentor teachers who were even in higher grades (MTA-T1)

value of collaboration is partly about reinforcing their sense of efficacy in what they do in the classroom, but also about recognizing that they can learn through interaction with colleagues about how to solve challenges of teaching and learning in the classroom. They also talked about collaboration in terms of taking on teacher leadership for improving teaching and learning in their own and other schools. These activities and outcomes for teacher professionalism are interactive. Greater confidence in one's professional knowledge and skills creates more openness to communication and collaboration with colleagues. Communication and collaboration with colleagues, in turn, reinforces and strengthens teachers' professional confidence.

Although teachers from both MTA and ELTA talked about norms and practices of teacher collaboration as an outcome of their work in PLNs, references to collaboration were more frequent for MTA respondents (13) than teachers from ELTA (7). We cannot explain this with confidence. Membership in MTA clusters, however, begins while the participants are doing their PLES training, which may lead to the adoption of norms of collaboration in the network more quickly than for English program graduates.

5.2.3 Commitment to teaching and ongoing professional growth

The impact of PLN participation on teachers' confidence as teachers has contributed to a sense of greater commitment to teaching as a career or vocation. Some teachers said that participation in the training and PLNs transformed their sense of professional identity. They came to view themselves as professional teachers, whereas before they viewed teaching merely as a job that they took because they had no choice. Other teachers claimed that while they were already committed to teaching as a career when they entered the program and joined their PLN, their pre-existing commitment was reinforced and strengthened through these experiences. For both groups, greater commitment to teaching is expressed partly in terms of recognition and acceptance of the need for and value of continuous professional learning in their work.

Some teachers spoke of their commitment to teaching not just in terms of their acquired or renewed passion and joy for teaching, but also in terms of a deeper sense of professional responsibility for student learning.

Table 5.4. Commitment to Teaching and Ongoing Professional Growth

	ELTA	MTA
Commitment to teaching	I think I have become more responsible. It has given me more of a sense of responsibility. I feel I need to create time to be with them (the PLN members). This has built my commitment. It has also built my confidence as a teacher. (ELTA-T4) It has made a lot of change. I like teaching more than before. Now that I am able to communicate more fluently than before, I'm now able to prepare early. I now know that it's good to collaborate. I've come to love teaching more than before. (ELTA-T2) I wanted to be a nurse, but when I missed that I became a teacher as my last option because I had nowhere to go. But since I went to AKAM I'm even upgrading now. I'm taking a diploma in English as a subject, and I went through the course as a Key Resource Teacher. I just want to be teacher! (ELTA-T3)	And for commitment, it gives you an assurance that you as a teacher are the one in control. Most of the things that go on in your class are related to how you manage your class. You come back from the meetings realizing that 80% of it depends on your preparation, you interaction with the children, and it makes you very committed. (MTA-T11) It has changed my attitude to learn and enjoy the profession. Before I was there from morning to evening and I got tired and lazy and I was just there because I have no other choice. I have learned to love the profession. I enjoy it. Five years ago if you had given me the chance I would have worked any other place than being a teacher. (MTA-T4) I feel like I'm more committed. I don't just teach. I'm more an instructor to the children. There's this love and bond that you develop. Teaching becomes more of a calling, not just a job. (MTA-5)
Commitment to ongoing professional learning	Through this network I have learned that I don't have to know everything. Day-in-day-out you learn new things and new skills and new ideas. This has given me the urge to learn more and be better than what I was yesterday. (ELTA-T4) I'm more open and I'm always ready to learn. I don't want to be that person that knows everything. I think every person has a weakness, so when I'm corrected I take the corrections positively and I try to improve. (ELTA-T5) If I could get the chance for on-going or for further studies…I'm very eager to do it if the opportunity arises. Despite my age I really want to continue learning. (ELTA-T2) It has really helped identifying problems and how to solve them. When I have an issue in my class I know that there are so many sources: Google, ask peers, deputy and head teachers, (trainers) at the PDC. So I've learned problem solving skills. (ELTA-T5)	Learning takes place every day, every moment of every day. So I want to look at research before I deliver a lesson to improve the quality. My work with MTA has helped me better research information. I want to know more about what and how I'm teaching. (MTA-T6) We learn from one another that challenges about how children are doing and how best to help them are everywhere. And we are all solving these problems together. I know that there are other colleagues that can assist me if I have other challenges. (MT-T12)

The common sentiment that teachers see ongoing professional learning through the PLNs as an extension of their initial training is a significant outcome for teachers who are active in the PLNs, which has implications for their potential contribution more broadly to school improvement. In a famous study of school effectiveness in 78 elementary schools in the state of Kentucky (USA), Susan Rosenholtz described some schools as "stuck" and not making systematic efforts to improve teaching and learning, and others as "moving" where there was evidence of coordinated efforts by teachers and principals to become more effective (Rosenholtz, 1989). Teachers in stuck schools tended to say that they learned all they needed to know about teaching within the first few years after graduating from initial teacher training programs and getting a job, and reported little active involvement alone or together in ongoing professional learning. Teachers in the moving schools, however, reported that they were continuously learning to become more effective teachers, often in collaboration with their school peers, and viewed commitment to ongoing learning as part of their professional identity. Like the teachers in the moving schools, PLN teachers do not limit talk about professional learning to participation in formal in-service training events (e.g., workshops, conferences). They refer to ongoing professional learning and growth from a variety of sources: formal professional development events, collaboration with colleagues, peer observation and feedback, personal reflection and reading findings from research. As previously noted, they talk about ongoing learning not just in terms of awareness and knowledge of 'new' methods, but also as a strategy for solving persistent challenges of teaching and learning that they encounter in classrooms. Their beliefs in the need for ongoing professional learning extend beyond their personal growth to sharing and supporting the professional growth of other teachers in their schools and neighboring schools.

5.2.4 Teacher PLNs and school improvement (focus groups)

In our focus group discussions with ELTA and MTA members, we asked about how individual outcomes associated with PLN activities are or could be expanded to other teachers within the member schools and lead to school improvement. We were interested to hear examples from experience as well as what school level factors help or hinder this sharing. Responses aligned with what we heard in interviews, namely that individual benefits are extended to non-member teachers primarily through sharing at staff meetings, during meetings of subject panels, as well as informal interactions during breaks and after school hours. In one case, at a school with three ELTA teachers, they invited non-member teachers to observe their new practices in the classroom as well as introducing some team-teaching activities, finding "that even the non-AKAM trained teachers were able to do what we were doing". From these positive experiences these ELTA members developed and implemented a workshop to "talk about the emerging issues which come after the new practices", saying, "It's different from how we used to teach English. So you hear teachers talk about how much work it is, and that the students are involved, but they really realize you have to do this!" (ELTA, Focus Group). We also heard from some participants that they had been involved in outreach activities to other schools as part of a professional development initiative organized by the PDC.

When we asked ELTA and MTA members about professional community and collaboration in their schools and the enabling and/or constraining school-level factors that influence such collaboration (as well as the development and sustainability of such collaboration), responses confirmed interview findings that teacher PLN members have a strong orientation toward professional outreach and collaboration. In terms of challenges, participants identified lack of time and the "negative attitudes" (ELTA, FG) of some non-member teachers to learning new pedagogical strategies or to change more broadly, again aligning with interview findings.

5.3.0 Head Teacher Outcomes: Professional Practice

We interviewed 20 school leaders from MELA (14) and KELG (6). Most were head teachers, although school leader training at AKAM-PDC is open to deputy heads and senior teachers (3 deputy heads and one senior teacher in our sample). The MELA sample included interviews with school leaders where our teacher observations took place in addition to cluster member interviews. Additional school leaders took part in other interviews, but the 20 referred to here were asked specifically about PLN personal impact.

We asked what kinds of school management and instructional leadership practices they had tried to implement as a result of participation in PLN cluster meetings and related PLN activities. Participants cited growth and improvement in a variety of *school management practices* and *instructional leadership practices*. They highlighted their *use of strategic planning as well as action research* as tools for school improvement planning and for solving practical problems of management and challenges of teaching and learning. As with teachers, it was not always clear whether the reported changes were independently attributable to collaboration with other school leaders through PLN activities, or more to the support for implementation in the PLNs of what they learned through their initial training at AKAM-PDC.

Few of the head teachers interviewed referred explicitly to their *use of strategic planning and of action research* when asked about the impact of PLN work on their professional practice. As reported from our observations of school leaders cluster meetings, however, both of these practices were strongly evident in the talk and work of those attending the meetings. More broadly, in the interviews the head teachers gave examples of leading and taking action to address school concerns as a result of their involvement and sense of empowerment in their PLN. One KELG head, for example described how he acquired two water tanks for his school after hearing about an NGO in cluster meetings and contacting the organization. Another said he combined his new skills in strategic planning and action research to mobilize parents and succeeded in having a road that endangered children removed from the school compound.

School management practices were a frequently referenced professional learning outcome for head teachers. Several said that they had received little training to prepare them to become head teachers prior to the AKAM-PDC course. Most references in this area concerned modest improvements in basic managerial practices, such as *time management, running staff meetings, establishing schedules for implementation of school activities, supervising teacher attendance, and managing teacher conflict*.

Table 5.5. Head Teacher Outcomes: School Management

	MELA	**KELG**
Basic school management (e.g., meetings, school activity calendars)	"We had training on staff meetings which helped me. The procedures…minutes, setting the agenda, etc... Setting up policies…For example, when I came here there was no motto written anywhere… no vision, no mission. They were not displayed on the walls. Now they are displayed on the walls and in my office. I also learned about the school program. You cannot run a school without a program. What do you do when you get to school in the morning? You should have a program for the day. Arrival at 7am, then assembly, the first class from this time to that time. Who is in which class? Who is	"I've developed my time and people management skills. Meetings don't take as long. You ask them to bring their areas they want us to discuss. So they already know the agendas for the day. Time management…like I can work here, teach, meet the District Education Officer… A 'what-to-do list has really helped me, so that by the end of the day you can say 'I've done this and that and your find yourself moving.' (MELA-EL7b) "I have also gotten other leadership skills, such as how to conduct meetings. I now

Table 5.5. Head Teacher Outcomes: School Management		
	MELA	**KELG**
	on duty? That is important, the day-to-day programs. We also have long-term programs with opening dates, exams, etc. All of this should be programmed. Never like 'I think we might have an exam tomorrow.' " (MELA-EL4) Before I did not have time management and prioritizing before. And also the listening skills I did not have that. I used to get irritated at parents and intervene. But now I listen before I reply. And now I prioritize things when I go to school. (MELA-EL5)	have participatory meetings, where I am not going to talk, talk, talk to them." (KELG-EL1)
Managing teachers (e.g., attendance, conflict)	"Today there was a conflict between a senior teacher and another teacher. The senior teacher has to get the attendance to me by 10:00. He walked into a class and doesn't care if the person is teaching, he just wanted the attendance. I brought them together to hear all sides of the problem and discuss the event. After the senior teacher apologized we tried to develop ways to overcome the problem, including better planning of the senior teacher's rounds." (MELA-EL4)	"I make sure teachers go to classes on time, provide attendance sheets…accountability." (KELG-EL3) "Implementing an attendance record. This has improved teacher attendance. The attendance record idea was learned in PDC training, but also discussed at cluster meetings and implemented by head teachers in KELG" (KELG-EL9)
Delegation and sharing of management responsibilities	"Because I delegate duties I have many leaders in my school, which makes my work much easier. I am using my knowledge within the school. I'm trying to bring up congeniality and teamwork." (MELA-EL15) "What I can say is teamwork. I've really tried to let these teachers work with me. I've devolved most of the things to teachers. Not doing it all myself. For example, the head of department checks lesson plans now. Not doing it all myself. Initially, head teachers marked everything, but currently we've devolved to head of department to check those books. I trusted him. Panel meetings are organized by heads of panels. I'm informed of what they are doing, but they do it." (MELA-EL17)	

These data, while not reported by all the head teachers interviewed, highlight the importance of including basic management skills as a component of head teacher training programs, in addition to skills focused on school planning and on instructional leadership. Greater *delegation and sharing of school management* duties with teachers is a distinct dimension of PLN and training impact highlighted in MELA head teacher interviews. While some of this sharing relates to curriculum supervision, the emphasis is more on delegating the task of bureaucratic monitoring and supervision of teachers than on distributing leadership.

Actions to *improve parent relations and involvement* in managing school decisions and concerns are another reported area of impact of PLN activity and training on the professional practice of head teachers.

Table 5.6. Head Teacher Outcomes: Parent and Community Involvement	
MELA	**KELG**
On the discipline side the children used to be hard to control, not wear proper uniforms, answer teachers without respect…but at least now they wear the proper uniforms and they return for the afternoon classes. By talking with parents, talking to them the parents have that sense." (MELA-EL5) We have just started 'tuition' after school now. The tuition is funded by the parents. We informed them that we wanted to do this and they give the teachers some transport money. (MELA-EL3) Teaming up with the school Board of Management to ensure that our schools are fenced with perimeter walls…In (the cluster) we come together as head teachers at parent meetings at our school and give strategies to parents…and also working with the chief and local leaders to find the drug dealers. We are working together. (MELA-EL11)	There is a girls' secondary school that is being built close to our school. The idea came from the cluster meeting. We then went to the community. We talked about it to the community leaders and they took up the initiative with the cluster members. (KELG-EL1) As leaders, we have to make ownership of the activities being done in the school. The parents bring the kids to school, but they have to own the school. We have to bring the parents on board. So normally I encourage the parents when we do exams to follow up on how their children did. If it's a bad performance, the parents contribute to that. If they have a good performance, they're part of that in the same way. If parents don't give their kids time to study at home, they have to take responsibility for that. (KELG-EL9) Building relationships with stakeholders. The school used to be chaos. Teachers weren't accepted by parents. Parents beat teachers up, locked them in their classrooms. That's not happening since he's been there. His colleagues are asking him what he did. He responds that they learned how to deal with this from the AKAM trainings. (KELG-EL2)

As illustrated, some actions to strengthen parent involvement in addressing common school concerns are being taken collectively by head teachers across their cluster, not just in individual schools. Parental support can be mobilized to address concerns about infrastructure and facilities, student behavior, student learning, and even parent attitudes and behavior towards teachers in the schools.

In the interviews, the head teachers emphasized *change in instructional leadership practice* specifically in terms of *monitoring teacher compliance with curriculum and lesson planning expectations* (see school management practices above), of *organizing teachers' joint in-service* development for improvement in student results, and of *facilitating teachers' individual teacher development both through teacher collaboration and through classroom observation and feedback.*

Table 5.7. Instructional Leadership: Teacher Development
Organizing Teacher Development through In-service Training Having INSETs (in the cluster) for difficult curriculum, subjects like science, social studies and compositions in which students are not performing well. To have some workshops and bring facilitators in to give teachers strategies to help improve student performance in those areas… Benchmarking…visiting schools nearby and see what they are doing and share our learning. Joint INSET to try to create common exams within our clusters." (MELA-EL11) When we identify a challenge in an area it is reported to me and we work together on how we are going to sort out a particular problem in teaching and learning. For example, we are going to have a workshop on composition writing and we have identified two teachers who are very strong in teaching composition to support the development of teachers in English and Kiswahili on how to teach composition. (MELA-EL15)
Facilitating Teacher Development through Teacher Collaboration "Also in bringing teachers together. During break time, we come together now to take tea in the staff room. Then we can chat and share problems that are affecting us and we can come up with solutions." (KELG-EL3)

Table 5.7. Instructional Leadership: Teacher Development
"Sometimes if you call a formal meeting people get really tense talking about issues, but if it comes up very informally at tea time or at break time or at assembly, the discussions are often much richer and focused on the students. In this way PD begins to happen informally…bottom up, instead of the way it has been in the past, which is more top down. I'm just a team player. I'm not the major decision-maker." (MELA-EL8) We can also talk of peer mentoring. So if we have a teacher good in one area and they sit with another that is not quite as strong…And they peer mentor each other. (MELA-EL16)
Facilitating Teacher Development through Action Research, Classroom Observation and Feedback "I have done some action research when I was at (school). There was a math teacher who was not doing well in Class 8 so I wanted to know what the problem was, why were the children not performing well? I came to realize that the teacher was using the wrong methods of teaching. She only used the lecturing methods and she was not involving the pupils. We sat with the teacher and discussed and fixed the lesson plan with her and developed the materials together with her. At first she was resistant but then she accepted it and there was an improvement in that subject." (MELA-EL5) "I am a much better instructional and pedagogical leader…I have to realize every teacher is different and their classes are different and which approach will work best in their situation. For teacher assessment I have to think which approach will work best…direct clinical instruction, direct classroom observation…for some teachers you have to find a way so that they don't know you are really watching their lessons." (MELA-EL8) Observation…Going into the classroom... mid-term briefing…The action research where teachers are identifying their professional problems. They identify and work on them. (MELA-EL16) "I told the teachers I would visit their class and make a report. That is also what the government has brought now. The policy is we have to go and observe teachers. Before this policy was not there…no need to observe teachers. You look at what they're doing and what has to be corrected. The scores are sent to the county director and then to the TSC. This is what they now call teacher performance (appraisal). We are being trained on this by the county director." (MELA-EL3)

The interview excerpts cited for head teacher support for teachers' professional development are taken mainly from interviews with MELA head teachers. In our cluster observations, however, KELG head teachers also talked explicitly about organizing cluster level in-service training activities. Head teacher involvement in classroom observation was introduced as an instructional leadership practice in their AKAM-PDC training. As noted in Table 5.7, the government has since mandated a policy and procedure for classroom observation by head teachers. Policy implementation training by county education authorities was happening during the year in which we collected data for this study.

Actions to promote student use of spoken English and to limit the use of Kiswahili and local languages are a focus of instructional leadership particular to KELG head teachers. This stems from the rural context of schools in Kwale County. Local languages dominate communication in the home and communities outside of school, rather than Kiswahili or English. This stands contrast with the urban context of Mombasa, where both Kiswahili and English are commonly heard and spoken outside of school.

> "In the English Language policy…this came out of our cluster meetings. We gave all the teachers some small pieces of wood…discs. During the day, if students are caught speaking another language other than English they are given one of the discs. At the end of the school day, we get all of the students who have spoken Kiswahili or Mother tongue and we punish them. All of the subjects are tested in English, so we try to push them to speak English so that they can understand." (KELG-EL3)

While we do not condone the use of 'punishment' as a strategy for addressing the genuine concerns of teachers and their head teachers about strengthening student mastery and academic performance in English and Kiswahili, this response needs to be understood in the Kenyan education policy context. English is the common medium of instruction. Kiswahili is taught as a subject. The testing and accountability system is based on student mastery of these subjects, mainly English. School recognition and teacher advancement depends on student results on government tests. Student promotion does as well. This has not been a significant component of the training for teachers and for head teachers at the PDC. Effectively teaching in multi-lingual contexts in ways that positively support the use of local languages in addition to national and international languages is extremely complicated. Despite the progressive arguments for doing so, it does not seem reasonable to expect local teachers to invent how to do this effectively on their own with minimal resources, professional training, and policy support. At best we would argue that local educators would benefit from exposure to more ways to positively value and build upon local language use.

The aims of the PLNs are broad, but basically focus on developing and improving the professional knowledge and practices of individual members and on improving the quality of their schools. For school leaders, this includes improvements in school management and leadership practices, as well as improvements in the quality of teaching and learning practices and outcomes at the school level. School leader focus group participants were asked to reflect on the balance in the PLNs between efforts to strengthen school management versus efforts to improve teaching and learning. The need to attend to both school management and teaching and learning dimensions of school improvement processes was confirmed by all focus group participants. Some responses to this question in the school leader focus groups opened up a side of many head teachers' work which we had not directly addressed in our interviews, namely that they often have teaching as well as administrative responsibilities.

> These are connected, because as Head Teachers we have to teach and at the same time with have to practice leadership. And when we meet in our groups, we discuss both. Because we look at the challenges that we have as leaders and as teachers. We balance both. We teach and we also have to do office duties. When we are meeting in our groups, we share and we share about what is happening as leaders, the challenges, and we also share the problems we have with our students, with the learning processes, what's going on, and what difficulties we are having. (KELG, FG)

We did not hear or see evidence of much interaction and communication between the head teacher and teacher groups in relation to the head teachers' roles as teachers. This might be an area worthy of future consideration in discussions about collaboration across the networks.

5.4.0 Head Teacher Outcomes: Professionalism

We asked the school leaders (mainly head teachers) interviewed how participation in PLN activities affected three dimensions of their professionalism: (1) their confidence in their ability to effectively manage the school and to lead improvements in teaching learning; (2) their thoughts about ongoing professional learning as a component of head teachers' work; and (3) their career commitment as a head teacher or in other education leadership roles? The questions about impact on school leader professionalism were asked in the cluster member interviews, but not in the in-school interviews with

head teachers. The number of respondents was about equal for MELA (4) and for KELG (5). As with teachers, head teacher comments about increased confidence, commitment and learning overlapped.

5.4.1 School leader confidence

The school leaders talked about sources of increased confidence in their ability to manage and lead associated with their participation in the PLNs, and about the effects of that confidence. Collaboration in the PLNs, for example, strengthens their confidence, and as a result of that confidence they are more willing to take risks in addressing challenges they face in managing and leading their schools.

Table 5.8. School Leader Confidence

	MELA	KELG
Professional knowledge and skills	I'm confident that I can do something new at school. You change due to the training…a big change. I'm happy that I'm practicing what I learned from the training. Even with my previous training from college, I learned some new things here that are helping me as a HT (MELA-EL3) I am much more confident now. I was given the post of a senior teacher eight years ago, but I wasn't inducted. So the PLES and the cluster meetings have given me the tools and the knowledge and techniques around school routines and role of the head teachers. Whether the head teacher is there or not, I can manage. (MELA-EL8)	When I was appointed as HT in 2010 I actually didn't know what to do. The government appoints you but you're not given any orientation. I was a matter of trial and error, but even when you fail, you don't know why you failed…That continued for years… But now I have the tools for leadership gained from AKAM and the PLN. So now I have the confidence. I know where to begin and I know where to end. (KELG-EL2) PLN has really helped me because when I was appointed as HT in 2011, I had not undergone any training on management or leadership. (KELG-EL9)
Communication and collaboration with teachers	My confidence is much better now. Now I look more for the gifts and talents of the teachers and where to best place them, based on where they can best contributed. I also now include teachers in this process, in identifying where they can contribute best. (MELA-EL8)	I'm very confident that I can deal with teachers…for example, convincing them of the value of participating in professional development. I've been able to convince teachers to work extra hard…extra time. They are ready to serve others. (KELG-EL2) In previous years I was not able to face teachers and tell them what to do. Now, I feel much more confident and have built a much better rapport with the teachers, because of the cluster group and the knowledge I got from training. (KELG-EL3) I sometimes try to help my teachers if they have a problem. If they have a problem we talk, we share, and then I make suggestions for how the teacher can handle it. It's not like I have all the knowledge, but I'll suggest other ways that they can handle it. (KELG-EL4)
Communication and collaboration with peers		I'm not afraid of speaking out. Whenever I have a challenge or something I don't get, I am ready to speak to my friends. I start with my critical friend and if he cannot help me then I go out to the larger group, the

Table 5.8. School Leader Confidence		
	MELA	**KELG**
		cluster. So it's improved my openness. (KELG-EL2) Before I was working alone. Since joining the cluster we come together. We share ideas and learn new things, gain more skills, learn how to deal with special cases and challenges. (KELG-EL3) When we meet with our colleagues we have to show what we've done. And what change or improvement, however small, has happened and celebrate that. Rome wasn't built in a day. So however the improvement is made, we have to recognize it. (KELG-EL9)

Head teachers feel more confident about their professional knowledge and skills. For some, PLES training and PLN participation has validated and improved existing practices. Others talked about the confidence building effects of learning new management and leadership practices. They claimed that they had received little formal preparation for their roles as school leaders from local authorities.

While the interview sample is small, the benefits for head teacher confidence associated with peer collaboration in the PLNs were emphasized more by KELG than MELA members. Active membership in KELG includes 96% of those who took part in training at the PDC (49% for MELA). Collegial support through the PLN may be more strongly felt in the isolated rural context of Kwale. Head teachers as a group placed less emphasis than teachers on communication with colleagues about professional practices as an indicator of increased confidence than on solving problems through collaboration.

KELG participants talked of greater confidence in their engagement in instructional leadership work with teachers. Respondents from MELA did not emphasize this in response to the question about PLN impact on their confidence as school leaders, but instructional leadership for teacher development was strongly evident in their comments about impact on their professional practice (see Table 5.8). This may reflect the fact that we did not ask about confidence in the school-based interviews with MELA head teachers, but we did ask about their instructional leadership work with teachers in their schools.

Head teachers, like teachers, said that participation in the training and PLNs had strengthened their commitment to their careers as school leaders. Notably, this was a common theme among deputy heads and senior teachers who have taken part in the training and attend PLN cluster and monthly meetings. Several of the head teachers spoke about stronger career commitment arising from the sense of empowerment and accomplishment associated with setting and achieving school improvement goals.

Table 5.9 School Leader Commitment to Career and Ongoing Learning		
	MELA	**KELG**
Career commitment as school leader	Before I didn't imagine I could take that leadership role and become a head teachers. Now, give me that letter that I'm going to become the head teacher of X school. I have no issue…Now I am ready. (MELA-EL8) I'm regretting that I got the position of head teacher too late and AKAM taught me too late. If I was given the knowledge earlier I could have done better work sooner. But I hope to be a head teacher for many more years. (MELA-EL3) I don't intend to leave here because I'm comfortable and I have dreams. I want the asbestos roof to be removed. I want to see the perimeter wall done. I want to see the infrastructure of the school improving, and I want to see the mean score of the school improving. To do that I need more than one year here (MELA-E4)	Before I lacked the training and the regular support from one another. This support has really made a change. I am now seeing myself becoming a head teacher. Two years ago I was still saying that I can't be a head teacher because I lack the experience, but now I am confident enough. (KELG-EL3) It has given me a passion for the job. Passion that I should work for results. I'm not just going to work, doing the job and learning. Now I have a passion because I ask 'what have I achieved?' I must achieve. I keep journals where I reflect. I have a vision. I also try to make others, like my teachers, to have a vision. (KELG-EL9) We have developed a strategic plan for the next five years for this school. We launched it, and every year I need to be checking it to see that there is a change in the school. And I am seeing the school is growing and it is because of those interactions and steps that I have taken. Even if I don't climb the ladder further than this, each time I do something different it adds something in me and motivates me to keep going. (KELG-EL1)
Commitment to ongoing professional learning	Before if PD was taking place it was going on unconsciously. It wasn't important to think about at that time. Now, I want to keep learning and learning and I want to go on. I want to have fulfillment. (MELA-EL8) Learning is there every day. You learn new things every day. Someone can give you an idea that will help you in your school. (MELA-EL3)	As an individual I should be moving a step ahead. We have learned this. I see that I should, as an individual, continue to take more trainings. (KELG-EL9) KELG is about 40 people and some of them are more senior than myself. And so we learn. We discuss. There are no biases. (KELG-EL8) It has helped even the teachers to accept me as their leader. Because I'm the first one to be ready to participate in PLN activities on weekends, they see that and think 'Why can't I?' So I model. (KELG-EL2)

The head teachers reported that they now saw professional learning as an ongoing dimension of the professional work, and associated ongoing learning with multiple sources – e.g., training events, interaction with colleagues, personal reflection. One claimed that his visible involvement in the PLN motivated teachers to become more engaged and commitment to their own development.

During interviews, we heard quite a bit about the collaboration going on between schools in a cluster, but during focus groups we asked school leaders about collaboration with other school clusters across the PLN, and about collaboration with school leaders and schools that are not PLN members. To gain a

better understanding we asked for examples from experience, the extent to which such inter-school collaboration is desirable, as well as the obstacles to such collaboration and possible strategies for addressing such obstacles. Responses confirmed that the primary form collaboration takes is between schools in a cluster and not across clusters, or with non-member schools. One MELA member stated, however, that when planning inter-school activities, all schools in the zone will be invited, not just schools that have PLN members. The participant expressed that including non-member schools in inter-school competitions, for example, is desirable because "the intention is to assist the child" and moreover that, "for those schools that have not had the chance to go for additional training, when we involve them, they also get what we have learned from AKAM, and they try to apply it to assist their children in their schools. So it's very beneficial" (MELA, FG). In another example, MELA members organized a stress management workshop and they invited head teachers of schools in their zones (including non-member schools) to identify (non-member) teachers to participate. Less formal collaboration was said to happen across schools and with non-member head teachers informally, for example, by phone or drop-in visits, where challenges are discussed, questions raised and knowledge shared.

Chapter 6

PLN School Context and Effects

RQ3. What interventions associated with the activities of professional learning networks do participating head teachers and teachers enact in their home schools, and what is the impact of these interventions on the knowledge and practice of their school-based peers?

This chapter presents and discusses findings about the organizational context and the effects of the PLNs at the school level as reported in interviews with PLN members. We asked specifically what head teachers were doing to support the implementation of professional activities and practices initiated by PLN teachers in their schools in our head teacher and teacher cluster member interviews (21 sources). We asked school leaders and teachers more generally about school-level organizational factors known through international research to affect school improvement activity and outcomes, including: school improvement goals, support for teacher learning, support for and openness to teacher collaboration, and school leader support for teachers' work in the classroom. These questions were included in our school-level interviews with head teachers and observed teachers (both PLN teachers and comparison teachers) (20 sources). These data are examined in the first half of this chapter. In the second half we examine what participants had to say about the impact of their PLN work on student learning in their classrooms (teacher interviews) and schools (teacher and head teacher interviews).

Analysis of these data is complicated by variation in the concentration in the number and type of PLN members in the schools. In Kwale, KELG school leaders are not accompanied by graduates of the AKAM-PDC English language and mathematics teacher programs, in contrast to their MELA counterparts[9]. In Mombasa County we sorted the data to see if there were any differences in the ways the respondents talked about both classroom and school-wide effects depending on the configuration of PLN members in the school (H/T + one teacher; H/T + two or more teachers, H/T no teachers, one or more PLN teacher but no trained H/T). As noted in chapter 3, PDC leaders have deliberately embarked on a recruitment strategy to increase the concentration of trained teachers and leaders in schools over time. Most of the interviewees, however, were from schools with at least two PLN teachers and a PDC-trained head teacher, so we were unable to fairly assess the findings for differences by PLN concentration.

6.1.0 School Organizational Context

6.1.1 School context: Head teacher support for teacher PLN activity

PLN teacher capacity to take actions to influence teaching and learning beyond their individual classrooms is largely dependent on what school head teachers do to support PLN-related activities in their schools. We asked head teachers what they do to support PLN-related teacher activities in their schools. Because the PLES programs for English and mathematics teachers are limited to teachers in Mombasa schools, these data are limited to responses from MELA school leaders. We report these data less as an

[9] The Aga Khan University Institute for Educational Development (East Africa) is based in Dar es Salaam, Tanzania. AKU_IED(EA) implements is involved in several teacher development initiatives in Kwale separately from AKAM-PDC. We did not investigate the overlap between those initiatives and KELG led schools.

"outcome" of school leadership training, than as a key organizational factor affecting PLN-related activity at the school level by teachers.

Head teacher and teacher accounts of what school heads do to support PLN-related teacher activity in their schools clustered into four broad categories, as follows

- Support for PLN participation
- Resources for PLN activities
- Encourage use of new teaching methods
- Facilitate teacher collaboration

Table 6.0 Head Teacher Support for PLN-Related Teacher Activity		
	School Leader Cluster Interviews	**Teacher Cluster Member Interviews**
Support for PLN participation	They may need (my) permission to go to another school to make a resource. (MELA-EL6) When you send teachers to the PLN you are already supporting them. They keep on learning, so when they come back to school that support needs to continue. (MELA-EL18)	My HT is very cooperative. He would never say 'No', no matter how many times we are asked to go to the PDC. He will ensure there is a substitute teacher to handle your class if you are leaving. (MTA-T1)
Resources for PLN activities	In most cases they will tell me when they have their meetings. If they need manila paper or to print their minutes, we sometimes allow them to use our printing machine. If they need teaching aids. I they need any kind of materials, we give them what we can afford. (MELA-EL7)	The HT is not trained but she is very supportive. When we tell her that we have a meeting coming up she will say 'Is there anything that you need?' She will take an empty classroom and get some writing materials. (MTA-T3)
Encourage new teaching methods	You can see the change in individuals because I knew them before they went to training. Without people reminding them what they have learned or experienced they will always stop at a certain level. So it is my duty to remind them 'How come you are stopping?' (MELA-EL15) If she has a plan in the class and if she needs time or materials we try to support her to accomplish what she wants. Say she had an English class and then a math class –back to back following it, but she needs the two lessons to accomplish what she wants to. I would give her those two classes back-to-back for English and then she will cover the math material another day. (MELA-EL8)	She provides the materials for us, the manila papers, the stationary and materials we require to make our teaching aids. (MTA-7)
Facilitate teacher collaboration	When they come back from these meetings, they come to me and brief me on what has happened and then we look for a day to have a small INSET with the teachers so they can share new teaching strategies and ideas. (MELA-EL14) I have provided an opportunity for the ELTA teacher to empower other teachers. I appointed her as head of the	When a teacher has any issue he has allowed us to ask teachers to step in for us, especially with topics that are difficulty or that we can`t handle well. He encourages fellow teachers to help us if they are capable. (CDF-T2)

Table 6.0 Head Teacher Support for PLN-Related Teacher Activity		
	School Leader Cluster Interviews	**Teacher Cluster Member Interviews**
	English panel. So she meets with English teachers and they share. She also monitors how the other teachers are implementing the curriculum.(MELA-EL18)	

At a basic level, *head teacher openness to and support for teacher PLN members to participate in PLN cluster meeting and other PLN-related activities* is an essential form of head teacher support for the teacher networks. Although much of the teacher PLN teacher activity occurs after the regular school day and/or on weekends, that is not always the case; sometimes teachers need to leave schools early or during regular working hours to participate in PLN meetings and activities elsewhere. Head teachers help by granting permission to leave and by arranging coverage for their classes. Occasionally, they are asked to let teachers host meetings in their schools. In some schools where the head teachers were not members of the school leader networks, teacher PLN members said that enlisting head teacher support of these kinds was a challenge to their active involvement in their networks. This issue was corroborated in teacher comments about attendance in our cluster observation findings (section 3.3.2).

MELA head teachers identified three major ways in which they provide *instructional leadership* to support the activities of PLN English and mathematics teachers in their schools, first by *providing resources (e.g., materials, space)* that teachers need to enact these activities. Second is by *encouraging PLN teachers to practice new instructional methodologies* they learned in the PLES training and through their network activities. Third is by encouraging and *facilitating collaboration* between PLN teachers and with other teachers in their schools. This is commonly described in terms of head teachers' expectations and arrangements for PLN teachers to share what they are learning through their training and network activities with other teachers. Some head teachers talk about enabling peer coaching or mentoring between PLN teachers and others. These types of instructional leadership support for the school-level activities of PLN teachers were mentioned by school leaders, but not by PLN teachers themselves. In our more general questions about head teacher support for school improvement at the school level, however, teachers as well as head teachers highlighted these kinds head teacher supports. We also note that school leader emphasis on providing material resources, and even participating in classroom materials development activities, was only highlighted by female head teachers. We cannot explain this difference.

In sum, our findings suggest that head teachers play a key role in legitimizing and supporting the work of network teachers in their schools. This begins with their receptivity and support (approval, resource materials, time) for network teachers to take part in PLN activities. It extends to endorsing the use of new teaching methodologies associated with the initial training and network activities of PLN teachers, including direct interventions to facilitate opportunities for PLN teachers to collaborate and share what they are learning with other teachers in their schools. Without support from head teachers, it seems less likely that network teachers would sustain their use of new methods or engage in outreach to other teachers. The potential school-level benefits of teacher participation in professional learning networks is enhanced by training provided to head teachers through the PDC in-service program for school leaders.

6.1.2 School context: General leadership and support for school improvement

We asked about the development and use of school improvement plans, head teacher support for teacher development and teacher collaboration, and direct support for teachers work in the classroom. The responses highlighted multiple ways in which head teachers reportedly lead and support school improvement, including: leading the development and use of school improvement plans; providing for the acquisition and development of teaching and learning materials; encouraging teacher participation in professional learning activities; enabling professional collaboration among teachers; engaging in classroom observation and feedback to teachers; analyzing student assessment results with teachers to track success and identify needs for improvement in student learning; promoting parental involvement; responding to student discipline issues; managing school finances; addressing school facilities' needs; and dealing with human resource concerns (support for weak teachers; teacher motivation).

Overall, the interviews yielded a positive picture of general leadership and support for school improvement from head teachers in schools associated with PLN teacher and school leader work. We did not identify any salient patterns of difference across the schools sampled in these interviews. While we acknowledge that these data are anecdotal and that the findings do not provide an in-depth review of head teacher support in the areas highlighted, our general conclusion is that the PLN teachers overall are working in schools where their work and the work of other teachers is well supported by head teachers. This may reflect the screening process used by PDC staff to select candidates for teacher and school leader training, which may privilege the selection of participants from more positive school contexts than might be the case in other Mombasa schools. The findings for school leader PLN outcomes (Chapter 5 Section 5.3.0 and 5.4.0), however, also suggest that the positive head teacher orientation to and support for school improvement in general, as well as their support for the work of PLN teachers, is partly attributable to what head teachers gain from their PDC training and the school leader networks.

6.2.0 Student Effects

We asked teachers about the impact of their involvement in the PLNs on student participation and learning in their classrooms. We asked more broadly about school level effects of PLN members (both teachers and school leaders) on student participation and learning in their schools. Overall, the respondents highlighted the following categories of impact on student participation and learning:

- Learning behaviors (active learning, group work, materials use, peer tutoring, student voice)
- Student engagement (enjoyment, interest, participation, discipline and attendance)
- Student performance (mean scores, English language proficiency)

We begin with student effects in PLN teacher classrooms, using the teacher interview data. Then we examine the reported school level effects, drawing from both teacher and school leader interviews. It is significant that teachers do not talk about student effects independent of their use of non-traditional pedagogical methods introduced in their initial training at the PDC. One major student outcome is that *students are learning in different ways* than they did before. Teacher participation in professional networks alone does not lead to the adoption and implementation of much change in the classroom. Participation in the PLNs reinforces and supports implementation of new teaching methods acquired in training. Second, teachers attribute behavioral evidence of *greater student engagement (interest,*

enjoyment, participation) in learning to the use of these non-traditional instructional methods. This in turn leads to perceived *improvements in student academic performance*. The sequential causal logic is teacher training, implementation support through teacher networks, changes in teaching and learning methods, greater student engagement, and ultimately, improvement in student learning outcomes.

Table 6.1 Student Effects Classroom (Teacher interviews)		
	ELTA	MTA
Student learning activities	In the Lower Primary they really like these learning materials. They keep touching and reading and they learn a lot from working with these materials. (ELTA-T4) ELTA has helped. I encourage my students to speak in English, also how to work in groups, how to make materials. (ELTA-T9) They're coming up. They're learning. They never used to share. But now teamwork. They always work in groups. When they have problems they're open to share and to help one another. (ELTA-T3)	(The lesson plan and materials we developed) involve learners so much in the learning process. More exploring on their own. They are set free to learn. (MTA-T12) The children are friendlier with me, and if they have questions they ask. If they don't know how to solve a problem they feel free to ask me. They share more in the class. They say what they've learned and help each other. (MTA-T4) Before going to the cluster meetings we did not do any grouping of students and didn't use any materials. After MTA we are now developing groups according to their abilities and interests, and are using lots of locally developed material to get students involved in their own learning and to help them understand concepts. (MTA-T15)
Student engagement	Truancy has decreased. There used to be a lot, the boys who loved to run away in the afternoon. Now it has stopped. It has made learning interesting, so learners like what they see and have. With our child-friendly approach they are now more open and ask teachers questions. (ELTA-T7) In training we learned that students should talk 70% of the time in the classroom, and teachers on 30%. When we implemented this strategy we found that students become more creative. They speak more and discuss more. (ELTA-T5)	It has made my lessons very interesting, especially the group work and peer-teaching. This coming from MTA. (MTA-T7) The learners have started enjoying the learning, because when they are using the materials they all start interacting. (MTA-T9) The different activities that we give the children, it makes learning be more learner-centered. They learn through discovery. It makes learning fun. Children that didn't participate before are participating now." (MTA-T5)
Student performance	Academic performance is coming up, although with public schools there are many challenges. Children are often kept at home until 7 years old, and they come to primary school because it is free. So you can imagine the challenge. (ELTA-T3)	The math results are improving. (MTA-T4) Their skills improve when they engage with one another. (MTA-T9) The kids are learning better because of use of different materials. (MTA-13)

We also asked the ELTA and MTA teachers from Mombasa about their perceptions of school-level impact on student learning as a result of their participation in the networks. They called attention to changes in teaching methods in their schools that they attribute to sharing and collaboration with teachers not trained at AKAM-PDC, as well as to perceived school-wide effects on student performance.

Table 6.2 School-Wide Effects (Teacher interviews)		
	ELTA	MTA
Teacher collaboration (sharing, workshops)	Here it doesn't but in some it does. I go to class with a lesson plan and prepared, but others just go with a book and a piece of chalk." (ELTA-T3)	When we have meetings at schools we share knowledge. We normally have time to discuss our challenges at our school level. When we share that I tell them how I handle it and so the teachers gain some insight. So even those teachers that don't attend PDC still gain knowledge. (MTA-T5) All teachers who have gone to ELTA and MTA they have been developing workshops and share ideas with the other teachers at the school (MTA-T15) When we have cluster meetings we share what we have been doing in our classrooms. When we come back to our schools and share with other teachers… They ask you to share some of the ideas. They copy from you and they keep on improving on their learning processes. (MTA-T9)
Student performance	It helps the students to learn, but it is not the same for everyone. (ELTA-T9) We compare schools in ELTA. The results come back in January. At clusters we're trying to compare. The cluster heads are going to have a meeting where we'll share why some schools are doing better than others and what we can do to lift up some of the schools. (ELTA-T4)	There is a school effect. The academic level of the school is improving. The mean score is improving from 200 now it's heading towards 300. Even for math it's improving. After every test we get the numbers from each subject and we rank them. Math is the highest ranked. The ranking has improved. (MTA-T4)

Teacher claims about school-wide PLN effects on teaching and learning should be interpreted with caution. We interviewed a relatively small sample of PLN members in each network, and their experiences may not generalize to all members and their schools. References to teacher collaboration as a school-wide PLN effect on teaching and learning were more commonly reported by MTA than by ELTA teachers. This may relate to the fact that MTA cluster meetings began while those teachers were involved in training, not just after graduation. As illustrated in Table 6.2, even within our sample some ELTA members did not report general effects on teaching and learning in their schools. This seems surprising because at the time of the study there were six cohorts of PLES graduates in ELTA and the schools, versus only two cohorts associated with MTA. One might have expected more reference to school wide effects from ELTA members due to their longer presence in the schools. On the other hand, their statements may be a more accurate reflection of school wide effects precisely because they have been around long enough to genuinely make such an appraisal, in contrast to recently graduated MTA members. The positive comments about classroom and school effects on teaching and learning should also be viewed in light of the fact that we interviewed "active" PLN members, who by their participation are likely to comment favorably on the benefits of training and of PLN membership. We did not obtain independent evidence of student performance trends in schools associated with the networks.

School leader comments about school level effects of participation in the PLNs are linked to what head teachers were doing together across their clusters to improve student learning, as well as to what teachers

were doing in the classroom individually and through sharing and collaborating with other teachers. As illustrated in Table 6.3, the school leaders interviewed talked more about perceived impact on school-wide student performance of PLN work and the training than the teacher PLN members.

Table 6.3 School Effects (School leaders)		
	MELA	**KELG**
Student learning activities	Learning has become more interesting and real. Now the learning is more than just book-centered. It is also practical. This is helping the learners a lot. Two areas are really doing well in this school—English and math. We need more programs for science, social studies and Kiswahili. (MELA-EL15)	There is this issue of competition (debate and storytelling) that was brought up in the school cluster meeting. We have started at Standards 1, 2 and 3 and they are ready to start in the competitions in Term two. We have already done the school level competitions and we have identified some that will go and some who are unable. We also using this to plan for remedial programs to help improve their level in reading. (KELG-EL1) There has been some increased student participation, particularly through the introduction of more debates and quizzes. Also through the use of strategies like the discs (to encourage English language use) (KELG-EL1)
School climate and student engagement	Through the training and the PLNs I see that the environment around here has changed me and the way the teachers and learners relate. You don't just have to be a disciplinarian to improve student performance. It is important to build the relationship between the teacher and the learners. (MELA-EL8) It's having very positive effects. The most important part of this is the learner and we've managed to create a child friendly environment. We have created a free environment. We have reduced the gap between teacher and student. (MELA-EL6) Student participation and learning has increased. Because of some new strategies for handling student discipline the students are more occupied in the learning activities and are finding the learning more interesting. Better strategies for planning are also helping to make the activities more interesting and child centered. (MELA-EL12)	
Student performance	It has increased their participation, their performance. Discipline cases have gone down. Their mean scores have gone up. All eyes are on the ELTA teacher to see how the PLES and ELTA cluster work is making a difference. (MELA-EL8) Very big impact. There is an upward trend in overall performance. Especially	There have been improvements in the English scores over the past two years. We see much more material development and believe this is assisting student learning. Also with the introduction of the disc, we see that noise making in class has been minimized and the students' use of English is increasing. (KELG-EL3

Table 6.3 School Effects (School leaders)		
	MELA	**KELG**
	in English (MELA-EL18) Increased student performance. The mean score has improved quite a bit over the past two years. I have a lot more children who can read, and I think this is because of the teachers' participation in MTA and ELTA and MELA. This increase in mean scores is happening not only in the classes of teachers in the PLNs, but also in other classes, because of the sharing of ideas and teaching strategies. (MELA-EL11) We initially focused on the top performers, but now we have adjusted our focus to bringing everyone up to a minimum score. We want to improve all students. So we offer remedial classes. (MELA-EL6)	

The differences between the reported PLN effects on teaching and learning by MELA and KELG school leaders are related to the fact that KELG school heads do not have AKAM-PDC trained teachers in their schools, and that the collaborative initiatives reported by KELG heads across their school clusters were more commonly focused on improving English language performance than on other subject areas.

Chapter 7

System Context and Sustainability

RQ5. What policy, organizational and contextual issues and factors influence the implementation and sustainability of inter-school professional learning networks?

In this chapter we examine what participants in this study said about the influence of school system-level policies and other external influences on the implementation of the PLNs, as well as more general factors affecting the sustainability of the networks as sources and support for continuous professional learning. These data draw from our interviews and focus groups with PLN members, as well as from interviews with the AKAM-PDC leaders and external education authorities from Mombasa and Kwale Counties.

7.1.0 School System Influence on PLN Implementation and Sustainability

In interviews and focus groups we asked PLN members and leaders, as well as PDC staff and external stakeholders, about the role and influence of government policy and officials on PLNs. We also inquired about the alignment between PLN priorities and activities and those of the government.

Overall, participants tended to have a favorable view of PLN-government relations. Helpful system factors were mentioned by more participants (48) than hindering system factors (34), although they were not very about specific about ways in which government policies and authorities either help, constrain or otherwise relate to the work of the PLNs. One MTA teacher, for example, suggested simply that government officials "encourage us because they want learners to improve" (MTA-T4). Supportive contact with county Curriculum Support Officers (CSOs) was frequently mentioned as helpful. CSOs are reportedly invited and attend some monthly PLN meetings to provide information about government initiatives and to be more aware of what the PLNs are doing and the challenges they are addressing. Indirectly, the experience and voice of the school leader PLNs feeds into regular meetings of school administrators convened by county education authorities and KEPSHA. As reported in one external stakeholder interview, "In the county government we normally have planning days where we include them. Initially we did not have that but now we have those common days where we share challenges and experiences in educational areas and projects, as well as discussing the way forward" (EX-10).

The second most frequently mentioned helpful system factor in the focus group interviews concerned the perceived complementarity between the work of the PLNs and government policies and priorities.

> They [PLN work and government policy] are married. The practices I do in class is actually what the school-system or government requires of me. For example, we have these child-friendly schools and you find that the only way that you can achieve this is by implementing the practices that we learned at AKAM. They fit so well! So what I practice in class is basically what the school needs from me. An example, take enhancement of literacy, this is a common factor that needs to be done throughout Kenya. And from what I learned in AKAM, I have to nurture a reading culture. So, the

> implementation of library is not just for me, but for the students and the government – it's a government policy! (ELTA member, Focus Group)

In another example a KELG member stated, "I tend to think that the PLN activities are looking at the government policies at the school level and they are trying to complement them. They are trying to ensure that that the government policies are successful in the school. So, they are assisting the implementation" (KELG member, Focus Group). MELA members were the most likely to highlight the perceived alignment between PLN and government policy and practice. The reported complementarity between PLN activities and government policy and school improvement initiatives was not strongly evident in the individual interview data and in our cluster meeting observations. Coherence of PLN activity with external policy and program initiatives appears, as well, as a sustainability challenge for the PLNs in the final sub-section of this chapter. Some PLN members spoke less about issues of alignment of PLN work with government policies and programs than about conflicting and competing schedules for PLN activities and other external professional events.

PLN members from both school leader and teacher networks did not universally share positive perceptions of coherence and compatibility with government education policies and priorities. For example, some concern was mentioned in interviews and in the ELTA focus group about the government mandated early literacy program, TUSOME, as being a more teacher-centered program, in contrast with the child-centered pedagogical strategies promoted by the PDC. A similar tension between PLN work and government policy and programs came up during a focus group with MTA members, discussing the pedagogical approach of a recently mandated government sponsored primary level math program. Two school leaders and one English teacher spoke about the exam-oriented and academic performance-driven schooling system in Kenya as being problematic and in conflict with their (and their PLNs') educational values. For example, "Our education system is exam oriented. So, we find that we plan activities but we can't carry them out because it's being looked at as though we're wasting the valuable time of our children. So, if we take them out, they're missing other activities" (KELG-EL9). And finally, the Free Primary Education Policy was singled out by a few school leaders as causing challenges in terms of parental support and availability of resources, which in turn leads to problems at the school-level, with spill over to support of PLN initiatives, such as developing school library resources and reading cultures..

Although no one suggested that government funding should be provided to directly subsidize the PLNs (see sustainability challenges below), some interviewees commented that government resources allocated to schools (human, material, financial) were typically designated to support government sponsored initiatives, suggesting that it was difficult to free up school resources for PLN sponsored initiatives. "I don't think anybody else is helping them in the PLN activities. Of course, they get support and resources from system authorities for their own programs, like textbooks for TUSOME and tablets from the TAC Tutors, Microsoft computers…different stuff, but not for PLN [specifically]" (PDC-5). Our observation data from school leader cluster meetings (section 3.3.3), however, indicate that once they are on board, school leaders apparently do have flexibility within their school budgets to support some PLN initiatives.

7.2.0 Sustainability of the PLNs

We asked PLN members, leaders, and AKAM-PDC leaders whether they thought the sustainability of the teacher and school leader professional learning networks was dependent upon ongoing support from the

PDC, and to comment on the reasons for their responses. We also asked the external stakeholder about their views on PLN sustainability. These questions yielded a rich set of data and findings on PLN sustainability from 40 different interview sources (133 references coded under theme of "sustainability") distributed evenly across the four PLNs and external interviews (PDC, education authorities). The individual interview data are complemented by discussions in the focus group interviews.

We begin with a review of participant comments about dependency on PDC support for sustainability. This is followed by an examination of their views on the internal capacity of the PLNs to continue, and by presentation of reported challenges to sustainability drawn from the interview and focus group data.

7.2.1 AKAM-PDC support

The PLNs originated as an extension of the AKAM-PDC outreach program for graduates of the PLES programs for English and mathematics teachers and for school leaders as described in Chapters 1 (section 1.30) and 3 (section 3.2.0). In their inception the PDC trainers intervened deliberately to provide guidance in the leadership and activities of the PLNs and to provide a modest level of resources (e.g., transport and tea allowances, meeting space at AKAM) to enable and support their existence and work. Over time, direct intervention in the management and implementation of the PLNs has been gradually and intentionally reduced in order to lessen dependency on the PDC for sustainability. At the time of our study, PDC trainers did not attend cluster meetings, though they did continue to drop in as observers at monthly meetings. They did participate in monthly meetings of the cross-PLN Executive Committee responsible for managing the PLNs overall and planning major collaborative activities (e.g., annual schedule of meetings, PLN leader elections, annual conference). They continued to ask PLNs to submit attendance data and records of their activities, as these were required for disbursement of transport and tea allowances to participants, and also for PDC accountability to external agencies that were the source of funds for the economic incentives. In September 2016, the venue for monthly meetings shifted from the AKAM-PDC campus to school sites. The annual conference and welcoming of new cohorts of graduates into the PLNs continued on campus.

In the interviews participants talked about three dimensions of ongoing support from the PDC.

- Legitimization and recognition of PLN work
- Monitoring and facilitation of PLN activity
- PLN funding and resources

Different PDC trainers are designated as patrons or mentors to each PLN in keeping with their role in the PLES training programs (e.g., mathematics, English, school leader). At the time of our investigation the PLN patrons were not involved in cluster and monthly meetings in a hands-on way, though they do participate in the cross-PLN Executive Committee meetings each month. PLN members and leaders, however, highlighted the continuing importance of PLN ties to the PDC in terms of *legitimating and publically recognizing PLN plans and activities* internally and with education authorities. They talked about positive influence of the link to and supportive involvement of the PDC on member motivation and ongoing participation. They attributed this in part to a sense of accountability arising from *active communication with the PLNs and monitoring of PLN activities* by PDC staff.

Table 7.0 PLN Sustainability: PDC Support			
	Teachers (ELTA & MTA)	**School leaders (MELA & KELG)**	**Others (PDC leaders & external stakeholders)**
Legitimization and recognition of PLN work	With ELTA we're just teachers like me. So when you say "You need to provide this and this and this" and we already have our problems and domestic issues, and if I raise these problems to the school even the HTs will withdraw their support. I don't think ELTA can work without the help of PDC. (ELTA-T3) I'm telling you the PDC is like a heart in somebody's body. We can't move without them. We really depend on them. It would be hard to without them. (MTA-6)		Even when you ask the PLNs to run an activity on their own or make a decision, they still want to come back to us at the PDC to check to see if it is OK. Their confidence is growing, but they still want support. (PDC-3)
Monitoring and facilitation of PLN activity	The PDC keeps us updated and keeps us moving. The fact that someone somewhere is waiting and counting on me makes me want to work more. (MTA-T2) Some of the PDC members make an effort to attend cluster meetings. This makes members feel like there is a follow-up that is still being made. And finally we receive a lot of encouragement in the ongoing support. (MTA-T5)	Due to a lot of pressure they normally remind us. We're often so busy we can't think of the meetings and dates, but they remind us. (MELA-EL3)	We used to have meetings at the PDC every other month, but now we have them out there. We used to be heavily involved in their meetings. It used to be mandatory for me to be there, but now it's not. I can just do a spot check to make sure that they are there and look at their minutes and decide if something is doable or not. We are trying to let go. (PDC-1)
PLN funding and resources	I think that the support from the PDC is very important, particularly the financial support. Money motivates people to come to meetings and to stay involved. Some people come from very far away. Without the support, participation might drop. Even the material support helps us a lot. Individual teachers can go to the PDC and get materials support like manila paper. (ELTA-T6) No we don't depend on the PDC. We have our own meetings in our school. And we could contribute for our own tea. We don't have to depend on them. (ELTA-T5)		

Interviewees from the teacher clusters (ELTA and MTA) were more likely to identify the *continuation of funding and resources* as important for sustainability than school leaders. This could be due to the fact that ELTA and MTA teachers have little access to and control over other resources to fund cluster and PLN level activities, unlike head teachers who can access school funds (consistent with school leader cluster findings reported in Section 3.3.7). In Section 3.2.1 we reported that perceived benefits to professional practice and attitudes were the primary motives for active participation in the PLNs and that participation allowances for transport and tea were not a key motivational factor. It appears however, that discontinuation of that funding could have a negative impact on sustainability, at least for some teachers. A few teachers highlighted access to material resources related to teaching and learning at the PDC.

7.2.2 PLN capacity

Participant comments about the internal capacity of their PLNs to become independent and self-sustaining were generally optimistic. The literature on organizational capacity and capacity building often frames capacity in terms of human capital, social capital, and material capital (O'Day, Goertz & Floden, 1995; Spillane & Thompson, 1997)). With this in mind, participants in our study spoke about the PLNs' internal capacity for sustainability in terms of:

- Human capital (network ownership, confidence, skill and commitment)
- Social capital (network participation, membership and leadership)
- Material capital (network resource capacity)

The perceptions about PLN capacity were not evenly distributed across the PLNs or interview groups. Across the four PLNs, KELG and MTA members spoke most optimistically about the sustainability potential of their networks. This seems consistent with the high level of active membership in KELG and in MTA reported in section 3.2.0. and described in the analysis of cluster meeting topics and activities (section 3.3.0). ELTA members, on the other hand, did not highlight their network's capacity for sustainability. This finding may reflect the comparatively lower level of active membership in ELTA (section 3.2.0), as well as ongoing resource dependency on the PDC noted above. MELA members also had less to say about sustainability of their network. Comments about membership and about resource capacity were more strongly identified as a sustainability factor by PDC staff and external stakeholders.

Table 7.1 Sustainability: PLN Capacity

	Teachers (ELTA, MTA)	**School leaders (MELA, KELG)**	**Others (PDC leaders & external stakeholders)**
Human capital (ownership, confidence, skill, commitment)	We can even go further to run more workshops and continue to share ideas among our group members. We have already started doing workshops with our own schools, and we are planning to hold workshops for teachers in other schools in the clusters. (MTA-T7)	I say that if there was anything that was good, it is the training that we had. If we're able to follow what we were given, not get tired, then the clusters will continue. Because what is needed to make it continuous is exactly what we have within ourselves. I don't think that if the PDC went away that we would fail. (KELG-EL7) It will continue, because we are assisting one another. It is really helping each school. According to me, whether the	Their confidence is growing, but they still want support. When it comes to implementation they still want support. We still need to help them get structures that are working and can sustain their interactions. (PDC-3) With the kind of empowerment of the associations they can organize their own internal training…short courses, in-service courses, get donor help…Now the facilitators are amongst them. (EX-1)

Table 7.1 Sustainability: PLN Capacity			
	Teachers (ELTA, MTA)	**School leaders (MELA, KELG)**	**Others (PDC leaders & external stakeholders)**
		PDC is there or not, KELG will have to move. We're moving. Each HT still believes how important KELG is. (KELG-EL4)	
Social capital (membership and participation, leadership)		We have come together as a group because we now say "It is us"…It is like a club. So we have to stay together and move together. We've started it and it should not stope just because AKAM stops supporting us. (KELG-EL9)	For MTA one of the lessons we learned from the other groups was the importance of building synergy or teamwork right from the start of the course, and not wait until they were nearing graduation. (PDC-3) You require social skills, because these are social networks. You need to be able to identify different needs. KELG has to deal with people from a whole county, plus you have differences in context and socio-economic class. You need social skills to handle this. (PDC-6)
Material capital (resources)		KELG is here to stay. We are making financial contributions from the members to help support the continuation of KELG. There is a registration fee for new members and we also have term fees every three months. (KELG-EL6) We are thinking that cluster activities of KELG should continue after the PDC leaves. We have discussed that. In fact, the group that was doing material development proposed that we do material development together and fundraise to support those activities (sell the materials to raise money). (KELG-EL8)	There should be affiliation fees for members. For example, in order to become a member of MELA you should pay a registration fee of say Sh200. Then pay a monthly affiliation fee of at least Sh200 a member. By the end of the year, quite a substantial amount of money would be collected to support the association. (EX-1) The HTs could chip in because they know that this has value for both individuals and schools. We also feel that the school management boards need to be sensitized on this so that they will give support. (EX-8)

In terms of human capital, both PLN members and external sources spoke about the confidence and professional knowledge gained in the training and networks for PLNs to act as teacher development and school improvement leaders in the education system. They highlighted the professional capacity of the PLNs to organize and deliver in-service training to disseminate what they have learned to educators within and outside their schools as positive sustainability factor. We have concerns about the level of expertise in understanding and use of teaching methods introduced in the PLES training and reinforced in the networks, which we address in our recommendations in Chapter 8.

In terms of social capital, the interviewees emphasized the importance of developing an *esprit* and norms of teamwork in the PLNs as a key to their sustainability. This is not just a group norm, but also factor in

how cluster and PLN leaders are facilitating teamwork across the schools and membership. As noted elsewhere in this report, the strategy in MTA of inducting new members to the network while they are still in training appears to have had positive effects on the strength of social capital amongst its members.

In the external stakeholder interviews and in the focus groups we also asked about the possibility of opening PLN membership to teachers and principals who have not completed the AKAM-PDC professional development courses. There was no consensus, except that extending membership to others would have to include some kind of screening and induction process to create a common platform of knowledge and norms for belonging to the PLNs, as illustrated in the following external stakeholder comments.

> I think opening up is good, but opening up also needs criteria. If most of the members have gone through the course we are peers. I think they should also be of the same standard. That person who is below will learn something, but maybe they will not speak the same language. (EX-8)

> I think opening it up to people who have not undergone the course would be a disadvantage because the level of understanding would differ. Unless you are talking about the graduates would act like resource teachers for the others. It could be done, if teachers who have undergone training initiate or induct others at the cluster level. (EX-9)

> Yes, it should be opened up to other teachers and HTs so they can learn. (EX-2)

Responses in our focus group interviews were mixed concerning the question of allowing non-trained teachers or school leaders to join the relevant PLNs. Participants indicating that this would not be desirable suggested that without training, engaged participation would be difficult for newcomers:

> I think the idea is bad recipe, it will bring a lot of problems in the sense that those that we're bring on board won't know anything about us, what we know. For others to come to understand how it came to be formed and the purpose of it, I think some of them may not take it very seriously and now the time for the meeting will be changed to a full training! To bring in non-members, those that have not undergone the training will bring a lot of confusion and ideas that we have not been trained to pursue. (MELA, FG)

Others suggested bringing in untrained newcomers could help grow the PLN and contribute funds thereby helping ensure the sustainability of the association. KELG and ELTA members said that this was already happening to some extent in their clusters, with untrained head teachers and teachers attending some meetings. Another participant suggested, "We need to move together. So that's why we should open it up. It's the success of the kids that we are interested in. Everyone should benefit. So even if they are not trained, you can still bring them on board" (KELG, FG). An MTA member urged a "strategic" approach to including non-trained individuals into PLNs, saying that while opening up membership "is a good thing… this can only happen after we've strengthened our clusters". This individual further suggested that untrained newcomers could participate in meetings, first as non-members, and once they received a bit of training and experience with the PLN, they could be considered for full membership.

In terms of material capital, members from some of the PLNs (notably KELG) and external sources talked about the value of establishing systems of ongoing membership fees to help sustain the PLNs and fund their activities. This is already happening in KELG (our data are unclear about what the other PLNs are doing or planning to do in that regard). It is evident that establishing and managing membership fees is simpler for the school leader PLNs because head teachers can draw from their school budgets, rather than from their pockets. The potential for collecting membership fees in the teacher PLNs is more challenging if that money has to come out of the members' pockets. As suggested in one of the interview excerpts, it might be possible to negotiate a system whereby schools are sponsoring teacher participation in the PLNs through their head teachers and the school budget, with the expectation that the sponsored teachers are contributing professionally to teacher learning and school improvement through the PLN.

During focus groups, we followed up on the question of PLN sustainability going forward, if the AKAM-PDC's involvement in the associations was reduced. We were interested to hear ideas for a model that would help ensure the sustainability of the PLNs in Mombasa and Kwale. Ideas shared concerning elements of a model that would help ensure PLN sustainability echoed what we heard in interviews, namely, fundraising through income-generating activities (e.g., production and sale of teaching resources); collection of monthly (or annual) contributions from members; fundraise within membership to support PLN events on a case-by-case basis, as necessary; ensure that meetings are held regularly and are well organized and productive; cultivate collaboration across PLNs; ensure democratic elections and leadership turnover; and, solicit funds from relevant NGOs and government, where possible. To solicit external funds, we were told that associations had to register formally with the government, and so this was a step that each PLN could or has already taken. We also heard of the importance of PLNs developing constitutions that will guide their activities and help manage money and contributions.

7.2.3 PLN sustainability challenges

Many of the participants in our individual interviews with PLN members, the PDC staff and external stakeholders talked about one or more challenges to sustainability of the PLNs (22 sources). Most of these challenges have already been highlighted in this chapter and elsewhere in the report. Clearly, sustainability of the PLNs depends on the perceived *ongoing professional benefits* for professional practice and professional beliefs of PLN membership for the PLN members and their schools as highlighted and illustrated in Chapter 3 (sections 3.1.0, 3.2.0, 3.3.0) and Chapter 5 (sections 5.2.0, 5.3.0). *Workload* and competing demands of PLN members' professional and personal time (section 3.2.1) is an issue that will not go away, and has to be offset by the perceived and real benefits of membership. The importance for PLN leaders of maintaining *ongoing communication* with members about PLN meeting and activities through mediums like WhatsApp without depending on reminders and other messages from the PDC, and of following up with members whose attendance slacks has also been highlighted here and in previous chapters (Chapter 4, section 4.1.3). One participant suggested that if a member misses two or three meetings in a row, they are in danger of drifting away from active involvement. PLN leaders at the cluster level need to do this monitoring of attendance and follow-up in collaboration with other active members. Of course, finding ways to sustain funding to support PLN activity through membership fees and fundraising activities represents another challenge discussed in the preceding section of this chapter.

Three challenges to sustainability of the PLNs not highlighted elsewhere in this report *are group dynamics within the PLNs, official reward for participation in the PLNs as a form of educator*

professional development, and *integration of the PLNs with other school system organizations*. The topic and issue of group dynamics within the PLNs was highlighted mostly by PDC mentors. One key source of contention has to do with the system of recruitment to the PLNs based on annual cohorts of graduates from the AKAM-PLES programs. In some cohorts this has resulted in members identifying and interacting more with their cohort group members than with the PLN in general. Some of the founding cohort groups have had difficulty ceding leadership and control to newer graduates and members. Group dynamics issues associated with PLN recruitment practices and leadership would likely become even more prominent if PLN membership were opened to educators beyond those formally trained in AKAM in-service programs. Other group dynamics issues relate to the persistence of traditional professional norms in the education system, such as inhibitions on valuing equal voice and participation between more and less experienced teachers, and replacing traditions of competition between schools and teachers with norms of collective responsibility and sharing and learning together for the mutual benefit of all.

Integration of the PLNs within the wider realm of education system policy and practice (see preceding sub-section 7.1) is clearly a sustainability issue, although it was not highlighted in our interviews as much as we expected, and when it was, it was mainly in our interviews with external stakeholders. This may partly reflect the ongoing relationship, legitimation and professional and financial support (albeit reduced) from the PDC. As long as that relationship is integral to the identity and work of the PLNs, school system integration may not be felt or experienced as a serious threat to PLN sustainability by members.

A key focus of potential for integration is with *government policies that recognize and reward educators' ongoing professional development*. At present there is no official recognition given to participation in the networks and the professional learning arising from that (see PLN participant outcomes Chapter 5). This is related not just to school system recognition of PLN participation as having professional learning value, but also of some mechanism for providing official endorsement for participation in in-service training events provided by the PLNs to other schools and educators in the system. Of course, there are practical issues to resolve that have to do with certifying and documenting the quality of professional learning in the PLNs and in professional learning events they organize for other educators and schools. School system recognition of the PLNs as a legitimate venue for ongoing professional learning, according to some participants, might also have a positive influence on the level of active participation in the PLNs.

The relationship between PLN activity and government policies and programs for the continuing professional development of school administrators and teachers was not identified in our interviews and focus groups as having a major impact on the work of the PLNs. It is identified, however, as a significant unresolved area of linkage with implications for sustainability of the PLNs. The arguments for official recognition of PLN participation as a form of ongoing professional learning are framed in various ways:

- acknowledgement of the absence of many other professional development opportunities for teachers and head teachers;
- satisfying government policy requirements for ongoing professional learning;
- evidence to be considered in hiring and promotion; and
- a lever to influence head teacher support for PLN related work of teachers.

Participant comments sometimes did not clearly distinguish between recognition for training programs at AKAM-PDC and for the professional activities of the AKAM-supported professional learning networks.

MELA and KELG members suggested that official recognition and accreditation of PLN work as a kind of professional development could compensate for what they perceived as insufficient provision of professional development opportunities in the school system. “There are many new pedagogies and the teachers are not getting regular and good refresher courses/workshops for teaching and learning” (MELA-EL11). Another angle on this linkage is the potential utilization of the PLNs as follow-up support contexts for implementation of government sponsored professional learning activities.

Others suggested that PLN activities can be included in the portfolios required of teachers by the government every three years, showing their professional development work. Suggestions for what evidence might be mobilized in support of recognizing the professional development benefits of PLN membership included comparing the national exam performance of schools (between those with PLN members and those without) as well as comparing schools in terms of disciplinary cases: “The schools where the teachers are trained at AKAM, we are experiencing fewer discipline cases in terms of absenteeism, professional misconduct… those things that are common in those that have not been trained in this PLN” (MELA, FG). An ELTA member suggested that documenting and sharing PLN-led workshops and similar activities could also provide further evidence of the value of PLN participation. Another suggestion was to use classroom observation data as evidence of professional development (MTA). The feasibility of these suggestions is uncertain, but the idea of integrating evidence of ongoing learning (not just PLN membership) into required professional portfolios seems worthy of discussion

It was generally agreed – by external stakeholders and PLN members themselves - that PLN participation should not only be formally recognized by the government as professional development work, and but that it should be accounted for in hiring and promotion processes. Participants argued that PLN work should be recognized because it is complementing the work of the government and supporting the implementation of government professional learning goals for teachers and educational leaders: “It should be recognized because that is helping the government improve the head teachers” (EX-2), and, “The AKAM certificate should have the same weight – it would be a source of motivation to PLN members. It’s improving our schools, so why isn’t it recognized? It should be there when people are looking for proficiency – it should add marks and encourage people to get trained and improve themselves.” (EX-8).

Official recognition and accreditation of professional programs delivered by the PDC and of the professional activities of the PLNs could also be a positive influence on head teacher willingness to support PLN-related activity in their schools (e.g., release time, coverage, resources). This is particularly relevant for members of the teacher PLNs insomuch as much their participation in PLN activities and outreach depends on the support from their head teachers... Several teachers spoke of having conflict with head teachers or deputy head teachers, saying that some would not support PLN meetings or activities. Others suggested that government could do more to raise awareness among head teachers of the PLNs and their work. One of the external stakeholders we spoke with from the government suggested,

> Some HTs don’t analyze the PLN activities critically to understand how and where they fit in with the government program. The AKAM policies are in line with the government policies – they reinforce and support ministry of education policies and programs. Some HTs look at it as if it’s extra work or a new program, rather than understanding how

> PLNs fit in to their work. That's why some don't take it seriously. If they understood it better they would embrace it. (EX-4)

Support from head teachers is, of course, not a major issue in schools where school leaders have participated in the AKAM PLES school leader course and are members of MELA and KELG.

Some interviewees suggested that AKAM could work with the government to revise policies both in regards to formal of AKAM-PDC programs and of PLN membership and professional activities.

> We are in discussion how to give the PLN currency. The last time we were in discussion with them (we were told) that we need to develop a Memorandum of Understanding, so that once you reach 900 hours of educating with your colleagues, Teachers Service Commission (TSC) can give you a certificate. We are still negotiating with the TSC…we need to now unpack what qualifies as 'professional learning'…For example, a teacher can go and observe another teacher for 30 minutes how do we keep track? For teachers we think that will be our card. If they know that once they accumulate 900 hours they will get a certificate they will go for it. (PDC-5)

While comments in the focus groups and interviews indicated broad-based agreement that the government should recognize PLN participation as a form professional development, there were two dissenting views:

> I don't think it's just the recognition that teachers should seek. It's the education that's more important. We're getting knowledge that we are using with our students, so it's not necessary that we get recognition, for promotion and the like. The knowledge and empowering our teachers and students is more important [than getting a promotion]. Someone could get a promotion (without PLN involvement) but still not know what's going on. (ELTA Focus Group)

Similarly, a KELG member said, "I should also say the knowledge is more important than a promotion. Another thing to be noted, is are you using the knowledge? You can have a PhD or masters, but still not apply your knowledge. If you can share it with another person, apply it with them, you're really helping".

A second school system integration issue concerns the relationship between membership in the PLNs and in other professional organizations. This is most notable for school leaders who are members of MELA and KELG, but also of their regional units of the Kenya Primary School Head Teachers Association (KEPSHA). Teachers did not talk about membership in other professional associations. For head teachers, the issues noted were mainly expressed in terms of coordinating meetings so that they were not expected to be in two places at once. They did not talk about coherence and coordination between the PLN goals and activities and other priorities and expectations coming from system authorities or other professional organizations. This is something that we observed, however, in some cluster meetings. KELG members in one cluster planned an interschool training to support the implementation of a new government mandated policy and structure for student governance in schools. In our final visit, plans for attending a monthly MELA network meeting were disrupted by mandatory training for implementation of a new teacher evaluation policy by government authorities. In one ELTA meeting, cluster members

talked briefly about integration of the teaching practices learned at AKAM with the government mandated primary school literacy program. We are not suggesting that the PLNs should simply turn into implementation arms of government policy. Nonetheless, from a sustainability perspective, the relationship of the PLNs, their goals and activities to government initiatives and to the priorities and actions of other professional groups in the education system deserves explicit and strategic discussion.

Chapter 8

Reflections and Recommendations

We conclude this report with a set of reflections on our findings, and recommendations for potential directions and actions that the PLNs, the AKAM-PDC and other education stakeholders with an interest in strengthening the networks as professional learning and school improvement organizations might take. The recommendations do not identify specifically "who" might be responsible for taking action in these ways. The future of the PLNs does not depend on the actions of any one actor or group. It requires collaboration and coordination across education role groups and levels within the education system. Thus, readers of this report are invited to consider these recommendations in light of what they might do from the vantage point and authority of their particular positions within the education system.

Professional Learning

1. ***Deepening teacher learning and expertise*.** Our findings provide strong evidence that teacher participation in the PLNs has significantly influenced teacher implementation of teaching and learning methods introduced initially in their PLES training – small group work, development and use of low cost learning materials, student-centered learning activities, classroom strategies for diagnostic and formative assessment of student learning, openness to understanding and responding to student misunderstanding and misbehavior, and a greater awareness and disposition towards differentiating instruction based on student characteristics and learning needs. They recognize the change, and their colleagues in schools (other teachers, head teachers, supervisors) acknowledge the changes in practice. Nonetheless, we have concerns about the extent to which participation in the PLNs has contributed to further development of teacher expertise in the use of these methods. We heard for example, about challenges encountered in the use of small group learning methods, such as ensuring that all students participate in and benefit from small group activities, but we did not hear about how teachers were learning to address those challenges in the real contexts of large classrooms. Cooperative learning experts Barrie Bennett and Carol Rolheiser (1991), for example, identify multiple ways in which teachers can create positive interdependence in small learning groups to maximize the likelihood that students will work together. Elsewhere, Bennett lists eight practical problems reported by teachers implementing the seemingly non-complex cooperative learning strategy of Think-Pair-Share (Bennett & Anderson, 2017). In our interviews and observations of teachers and PLN meetings we heard about ongoing use of key teaching strategies that distinguish them from other teachers, but not much about ongoing professional learning towards deepening expertise in their use. The PLNs provide a context in which problem solving, experimentation and professional learning for the contextual adaptation and use of specific teaching strategies could be exploited more intentionally.

2. ***Strengthening the bias for action towards learning***. The purpose of the PLNs is not just to support the implementation of professional practices that teachers and head teachers are exposed to through formal professional development experiences in AKAM-PDC or other externally sponsored in-service training programs. They also provide a context in which teachers and school leaders can identify challenges of practice that they encounter in their classrooms and schools, and together generate, implement and reflect upon the impact of local solutions to those

challenges. We heard about and saw this happening in both the school leader and teacher PLNs. That said, we found less evidence, particularly for the teacher PLNs, of members actually gathering information and reflecting upon the results of their efforts to solve the challenges. We distinguished between what we characterized as a strong 'bias towards action' in the PLNs that is not accompanied by as strong a 'bias towards learning' from those actions. This is another direction of thinking about how to strengthen the networks as professional *learning* networks.

3. ***Balancing learning of innovative practices with improvement in traditional practices*.** Some of the work of PLNs is focused on supporting the implementation of "new" practices for the teachers and school leaders involved, as noted in item number one. Other work is focused more on helping teachers and school leaders incrementally improve their skills in implementing traditional practices. All traditional practices are not bad, but educator expertise in their use may be weak. The caution is when traditional practices may need to be challenged, rather than strengthened. We saw some evidence in our observations and interviews of PLN activities focused on supporting the use of questionable practices, for example, punishing student using languages other than English in the classroom, or sharing alternative ways of large group recitation. Of course, what is regarded as 'questionable practice' is a matter of local perspective and is debatable. We believe that the PLNs can and do provide a context for strengthening the use of innovative practices and well as enhancing the use of traditional practice, but that part of the discussion should always be to question and problematize the use of those beliefs and practices.

4. ***How to support more action research on a wide-scale basis.*** Participants in both the school leader and the teacher PLES programs at the AKAM-PDC are introduced to the theory and practice of 'action research' as part of their training. In the school leader PLNs we heard about examples of head teachers initiating and carrying out action research studies with their teachers. We did not hear about this happening in the teacher PLNs. It is easy to say that teachers should and can engage in action research individually and collaboratively. It is difficult to make that happen, and it comes at a cost. Even in highly resourced contexts like Ontario (Canada), small scale local action research by teachers is only happening on a large scale because of a government program that provides small competitive grants to teachers individually or in small groups to carry them out (Campbell, Lieberman & Yashkina, 2013). The government and Ministry of Education in Kenya is unlikely to mobilize and support a large-scale initiative of this sort (though some African countries have, such as Guinea—Schwille et al 2001). It might be possible for PLNs in collaboration with the PDC to seek external funding to support teacher and head teacher action research projects as a strategy for strengthening professional learning through the networks.

Knowledge Mobilization

5. ***Banking and mobilizing knowledge about what works***. Related to items one to three is the importance of coming up with practical ways in which different "solutions" and the results of trying them out (positive, negative, uncertain) can be banked for reference and for sharing with other teachers and school leaders, perhaps on a WhatsApp board or the PDC website. The ultimate aim and value of the PLNs is not just to benefit the members but the education system.

To this end, establishing a mechanism and publically accessible "space" for documenting and storing what they are learning through their professional activities seems desirable (e.g., how to address the challenges of small group work in large classes, how to help 'time takers' learn more efficiently). This would not only serve as a valuable resource for members of the networks and for teachers and school leaders who have newly joined the networks, it could serve as a professional resource for educators in schools and classrooms outside the networks. Otherwise, any learning that occurs in PLN activities will be limited to the small number of participants in those activities in the moment of those activities and subject to the fragility of long-term memory.

6. ***Strengthening the professional learning potential of outreach activities***. We were impressed by the evidence that the teacher and the school leader PLNs are actively reaching out to other classrooms and schools to share what they have learned, or to involve them in ongoing professional learning activities led by PLN members. This is a positive outcome for the PLNs and for the education system. Our concern, however, has to do with how it is being shared. The PLN teachers completed professional development programs that lasted a full year and over 400 hours, and that included not just theory but practice with feedback and coaching from expert trainers, and other high impact professional learning strategies. To expect that what they have learned can simply be transferred to other teachers through verbal presentations or one-shot demonstrations in their schools, strategies like gallery walks that display their use of practices, or posting visual images and short text messages on WhatsApp is naïve. Other teachers may pick up and use some ideas and practices at a superficial level, but not with deep understanding and expertise. In their outreach activities to non-PLN members, classrooms and schools, the PLNs might benefit from further professional learning about principles and strategies of effective professional learning (Timperley et al, 2007), accompanied by problem solving about how those strategies could be practically enacted in their outreach work. Otherwise, they risk the danger of repeatedly introducing innovative practices to their colleagues in ineffective ways.

Network Leadership and Organization

7. ***Investing in network 'system leadership' training***. We witnessed variability in how well different PLN clusters were functioning as venues for genuine professional learning. It is tempting to attribute this to variability in leadership skills at the cluster and network levels, but that would be inappropriate, since decisions within the PLNs about what they do and how are clearly shared decisions, not solely the role of formal leaders. That said, cluster and PLN leaders interviewed all spoke about the about the absence of any formal training and induction when they take on the roles of cluster and network leaders. This of particular concern for the teacher PLNs, where we found less evidence of leaders utilizing group leadership skills and planning tools reported and observed in the school leader PLNs. There is a literature on 'system leadership' focused specifically on leadership in networks (e.g., Katz, Earl & Ben Jaafar, 2009). This is an area worth exploring with help from the AKAM-PDC. Ideally, system leadership training would be carried out by professionals with successful experience in actually leading networks.

8. ***School networks as an alternative to individual networks*.** Positive things are happening in the PLNs as individual networks. Not much is happening between and across the networks, although many schools have concentrations of members from more than one network. The PLN 'Executive

Committee' facilitated by PDC faculty currently serves as an informal bridge between the networks. We think cooperation between the networks could be strengthened. One possibility could be to reconfigure the school leader PLNs as school networks rather than individual leader networks, and to strategically affiliate the teacher networks in a formal way to the school networks. This could have the advantage of stimulating and enhancing coordination and coherence in goals and activities across the networks. Modest membership fees for the networks might be collected at two levels, the school and the individual. This could help the teacher networks access school network resources as needed to support teacher network activities.

Integration with the School System

9. ***School system recognition and reward for PLN participation.*** The professional motivation for joining and remaining active in the PLNs would be enhanced by formal recognition and accreditation of participation in the PLNs, and perhaps of professional learning events (e.g., workshops) delivered to other educators through the PLNs. This is a discussion worth pursuing by PLN leaders in collaboration with AKAM-PDC and appropriate education system authorities (e.g., Teachers Service Commission). The findings from this study, however, suggest that the professional learning benefits of being a member of a PLN are not guaranteed, and that this can vary within a PLN and its clusters. The arguments for this kind of recognition would be strengthened by focused attention in the PLNs to the first five recommendations in this list. This discussion could address procedures for accrediting in some way certain forms of professional learning activities associated with the work of the PLNs, as well as the kinds of evidence of learning that individual members could incorporate into professional portfolios required professional purposes in the system (e.g., professional development policies, compensation policies, hiring and promotion processes).

10. ***Expanding membership in the PLNs***. Expanding and sustaining membership in the PLNs is an issue raised by PLN members. As long as the PDC continues delivering and graduating teachers and school leadership from the PLES programs, the membership could grow incrementally by 30-50 members per year. As noted for ELTA and MELA, membership sustainability is not guaranteed, and it becomes a practical challenge for PLN network and cluster leaders to continuously reach out to and communicate with members whose attendance lapses. There seems little point in simply assuming that all PLES alumni are *de facto* members of the PLNs for life. Consideration might be given to free membership during school the year following graduation as an incentive to join and participate, after which continued membership would require some modest membership fee that would also provide some internal funding to sustain the PLNs. A second issue is the criteria for entry into the PLNs, and whether that should continue to be restricted to graduates of PDC-affiliated programs for teachers and school leaders. Given that the sustainability of these programs themselves is dependent upon external funding that cannot be guaranteed, and that recognition and support for the PLNs within the education system depends upon their relationship with other stakeholders beyond AKAM, we believe that serious discussion about alternative paths to entry and membership in the PLNs should be undertaken.

11. ***Partnering with the education system.*** The interface between the PLNs and the government and other stakeholder organizations in the education system is mediated in large measure through its

relationship with AKAM and its PDC. The long-term sustainability of the PLNs as professional organizations will require them to develop and strengthen their own relationships with other organizations in the system. This is already happening informally between the school leader networks and organizations like KEPSHA. We heard less about communication and cooperation between the teacher networks and other external organizations, such as the Teacher Service Commission, County education authorities, or local teachers colleges. We think that that the PLNs could take leadership themselves to develop more intentional and focused relationships and partnerships with a wider range of other actors in the education system, perhaps by initiating some sort of multi-stakeholder partnership working group to collaboratively discuss ways in which the PLNs can contribute to teacher development and school improvement as members of the education system, as well as how those partnerships could contribute to the sustainability and effectiveness of the PLNs. Care needs to be taken, however, to ensure that the PLNs do not lose their commitment to addressing the practical challenges of practice in member school, classroom and community contexts. Their survival should not depend upon them becoming the 'implementation arm' for external initiatives and priorities. This is a balance that will need to be continuously monitored and negotiated in order to preserve the integrity of the original vision the PLNs as vehicles for continuous professional development and school improvement.

12. ***Strengthening professional community in schools.*** Findings from international research on inter-school professional learning networks in education consistently demonstrate that the potential for learning and for school improvement is greater when participants in those networks are linked to strong professional communities in their home schools, rather than participating as individual professionals (Katz, Earl & Ben Jaafar, 2009). In effect, the networks become what have been called "networked learning communities." An important direction for development of the PLNs as contributors to continuous professional learning and school improvement would be to work collaboratively with schools and school system authorities to strengthen the presence of professional learning communities in schools associated with the networks. This is not simple, and has implications for education policy, particularly policy governing teacher working conditions and contracts, that go beyond the authority of the PLNs themselves. This recommendation is something that would need to be acted upon collaboratively with system authorities.

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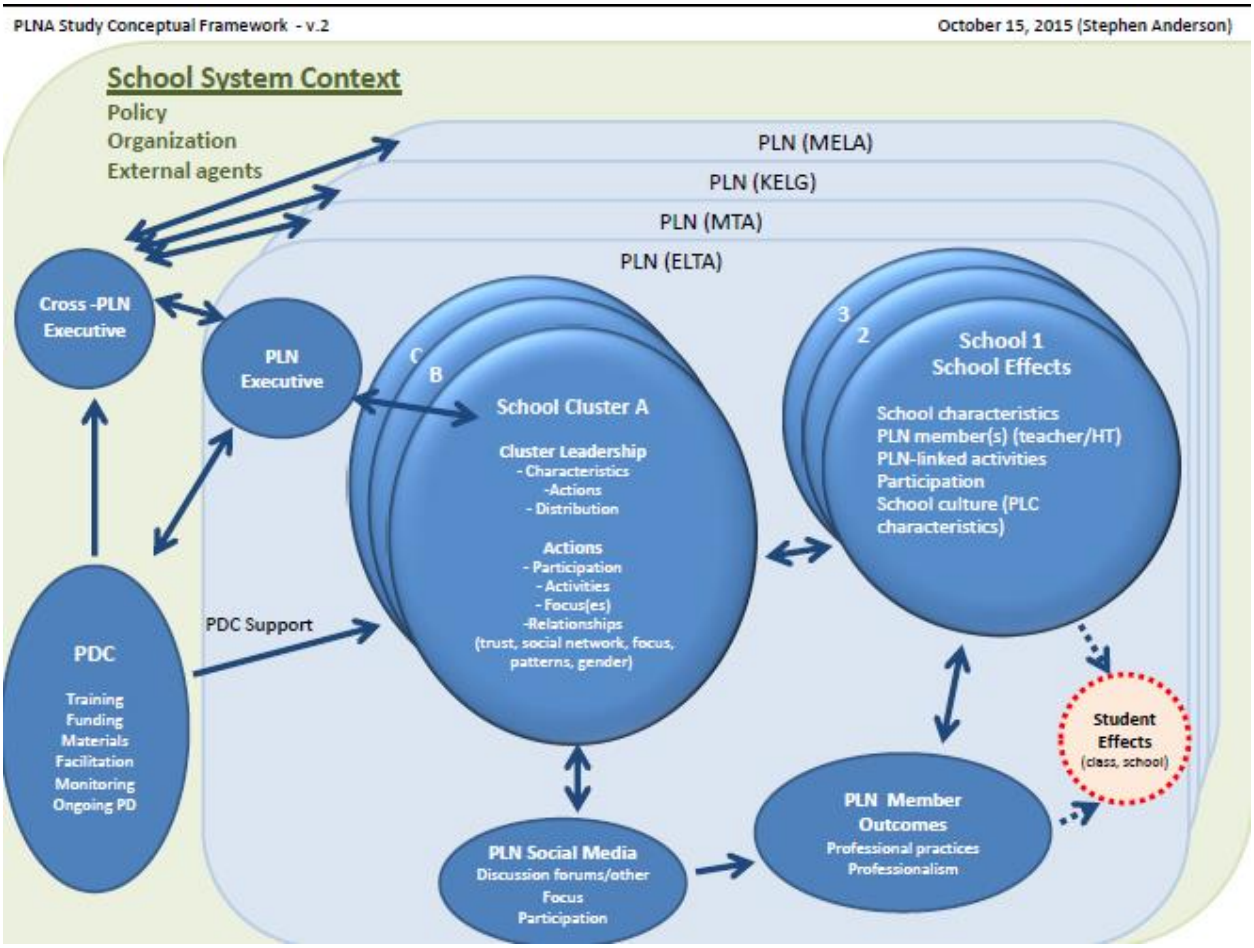
Appendix 1
CONCEPTUAL FRAMEWORK



Appendix 2
INDIVIDUAL INTERVIEWS

Teacher Cluster Member Interview

Participant background

1. What school are you from and how long have you been there? What is your position?
2. How many years teaching (and administrative) experience do you have?
3. When did you graduate from the PDC and how long have you been a member of (name of PLN)?
4. What roles have you played in the PLN (always use name of PLN)...member, head, secretary, executive

PLN purpose

5. What do you see as the main goal or goals of the (PLN)?
6. What expectations, if any, are communicated to you about your membership and participation in (PLN)? How are those expectations communicated?
7. Why do you think some graduates don't become active members of (PLN)?

PLN cluster and large group activity

8. How often does your (PLN) cluster meet? What influences the frequency of meetings?
9. How regularly do you attend cluster meetings? What motivates you to attend? Obstacles to attendance?
   – Compare attendance of other members?
10. What kinds of topics or issues are addressed in cluster meetings?
    – Probe for range of topics, change over time
11. What are the major kinds of activities that occur at (PLN) cluster meetings?
    - Probe for variety of activities with illustrations
12. How do you see the level of openness between (PLN) cluster members to share and discuss challenges for student learning and teaching? Variability and change in openness?
13. How would you compare male and female participation if the cluster? How would you describe the interaction between male and female members?
14. Do you attend whole group meetings of (PLN)? What happens at whole group meetings of (PLN)? (probe for illustrations)

PLN cluster leadership

15. How are decisions made about the scheduling and activities of the PLN cluster meetings?
16. Who organizes and leads the (PLN) cluster meetings and activities? What do these leaders actually do in the meetings?
17. Does leadership in (PLN) cluster activities change over time or by topic or activity? If yes, how does it change and why?
18. How are cluster leaders chosen? How frequently change? Variation in effectiveness?
19. Who plans and leads the (PLN) large group meetings?

PLN on-line activities (OPTIONAL-complete only for those using the on-line forums)

20. Do you participate in on-line discussion forums associated with the PLN? (ask follow-up questions ONLY if they participate in the forums)
21. Scope of (PLN) member participation? What do you talk about? How are the discussions managed?
22. *What connections are there between online discussion topics and PLN cluster meeting activities?*
    - *Probe: direction of influence*
23. What benefits, if any, do you experience from the on-line discussion forums?
24. What do you see as the comparative value of cluster meetings versus online activities?
25. What circumstances help or hinder participation in the on-line discussion forums?

AKAM-PDC role in clusters

26. What role does the PDC play in supporting and facilitating the implementation of PLN cluster meetings and activities? Has this changed over time, and why?
    -probe: for variety of and illustrations of PDC interventions in PLN activities (e.g., funding, materials, incentives, monitoring…. training)
27. In your view, is sustainability of the PLNs dependent upon ongoing involvement of the PDC in the PLNs? If yes, in what ways? If no, then why?

Government role and influence (adapt for private school governance)

28. What school system policies help or are obstacles to the work of (PLN)?
29. Are school system authorities from the CDO or TSC or other government units (e.g., County Support Officers) involved in any way in the work of (PLN)? How and with what effects?

School characteristics and PLN interventions

30. How would you describe your school in terms of its performance? The student population and community it serves? The experience and quality of teachers? Facilities and resources?
31. Who else in your school belongs to a PLN association (English and math teachers, head/deputy head teacher)?
32. What kinds of professional activities and practices do you do try to implement in your school as a result of your participation in (PLN) meetings and activities?
    -probe hard for specific illustrations
33. Do you work together with other teachers to implement (PLN)-related teaching and learning activities in your school? In what ways? What factors affect collaboration with other teachers in the school?
    - Probe for specific illustrations
34. How do the actions of the head teacher help or hinder your efforts to implement (PLN)-related ideas and practices?
35. How do you see the level of teacher openness in your school to work together on addressing challenges of student learning and teaching? What are the challenges to building professional trust and collaboration among teachers in your school?
36. What school system policies and actions of school system authorities help or hinder the implementation of (PLN)-related activities in your school?

PLN member impact

37. How has participation in (PLN) activities after graduating from the PDC influenced your own professional knowledge and skills as a teacher? To what do you attribute those changes?
    - Probe for variety of professional practice outcomes
    - Probe for explicit examples of change in knowledge/beliefs, skills, materials etc.
38. How has participation in PLN activities affected on your confidence as a teacher to identify and solve problems in student learning and teaching? Please explain?
39. How has participation in PLN activities affected your level of openness to professional collaboration with other teachers?
40. How has participation in PLN activities affected your thoughts about professional learning as an ongoing component of teachers' work?
41. What difference, if any, has your participation in PLN activities had on your commitment to teaching as a career and to working as a teacher in your school?
42. What difference, if any, is your participation and that of other PLN members in the school having on the professional practices and beliefs of other school personnel? Indicators?

Student effects

43. What changes, if any, do you think that your involvement in the PLN has had on student participation and learning in your classroom? Indicators?
44. What changes, if any, do you think that the involvement of educators from your school has had on student participation and learning at the school level? Indicators?

Head Teacher Cluster Member Interview

Participant background

1. What school are you from and how long have you been there? What is your position?
2. How many years teaching (and administrative) experience do you have?
3. When did you graduate from the PDC and how long have you been a member of (name of PLN)?
4. What roles have you played in the PLN (always use name of PLN)...member, head, secretary, executive

PLN purpose

5. What do you see as the main goal or goals of the (PLN)?
6. What expectations are communicated to you about your membership and participation in (PLN)? How are those expectations communicated?
7. Why do you think some graduates don't become active members of (PLN)

PLN cluster and large group activity

8. How often does your (PLN) cluster meet? What influences the frequency of meetings?
9. How regularly do you attend cluster meetings? What motivates you to attend? Obstacles to attendance? (- Compare attendance of other members?)
10. What kinds of topics or issues are addressed in cluster meetings? (Probe for range of topics, change over time)
11. What are the major kinds of activities that occur at (PLN) cluster meetings? (Probe for variety of activities with illustrations)
12. How do you see the level of openness between (PLN) cluster members to share and discuss challenges for student learning and teaching? Variability and change in openness?
13. How would you compare male and female participation if the cluster? How would you describe the interaction between male and female members?
14. Do you attend whole group meetings of (PLN)? What happens at whole group meetings of (PLN)? (probe for illustrations)

PLN cluster leadership

15. How are decisions made about the scheduling and activities of the PLN cluster meetings?
16. Who organizes and leads the (PLN) cluster meetings and activities? What do these leaders actually do in the meetings?
17. Does leadership in (PLN) cluster activities change over time or by topic or activity? If yes, how does it change and why?
18. How are cluster leaders chosen? How frequently change? Variation in effectiveness?
19. Who plans and leads the (PLN) large group meetings?

PLN on-line activities (OPTIONAL-complete only for those using the on-line forums)

20. *Have you participated in on-line discussion forums associated with the PLN? (ask follow-up questions ONLY if they participate in the forums)*
21. *Who participates and what do you talk about? How are the discussions managed?*

22. *What connections are there between online discussion topics and PLN cluster meeting activities? (Probe: direction of influence)*
23. *What benefits, if any, do you experience from the on-line discussion forums?*
24. *What do you see as the comparative value of PLN cluster meetings versus online activities?*
25. *What circumstances help or hinder participation in the on-line discussion forums?*

AKAM-PDC role in clusters

26. What role does the PDC play in supporting and facilitating the implementation of PLN cluster meetings and activities? Has this changed over time, and why? (-probe: for variety of and illustrations of PDC interventions in PLN activities (e.g., funding, materials, incentives, monitoring….training))
27. In your view, is sustainability of the PLNs dependent upon ongoing involvement of the PDC in the PLNs? If yes, in what ways? If no, then why?

Government role and influence (adapt for private school governance)

28. What school system policies help or are obstacles to the work of (PLN)?
29. Are school system authorities from the CDO or TSC or other government units (e.g., County Support Officers) involved in any way in the work of (PLN)? How and with what effects?

School characteristics and PLN interventions

30. How would you describe your school in terms of its performance? The student population and community it serves? The experience and quality of teachers? Facilities and resources?
31. What kinds of school management and instructional leadership practices have you tried to implement in your school as a result of your participation in PLN cluster meetings (and discussion forums)? (Probe for illustrations of both management and instructional leadership practices).
32. What school system policies and other external factors help or hinder the implementation of PLN-related activities and practices *related to your role as head teacher in your school?*
33. How many PDC-trained English and mathematics teachers are there in the school?
34. In what ways have you supported the implementation of professional activities and practices initiated by PLN teachers in your schools? What are the challenges? (Probe for illustrations)
35. How do you see the level of teacher openness in your school to working together on challenges of teaching and learning in your school? Obstacles to building trust and collaboration among teachers?
36. What school system policies and actions of school system authorities help or hinder the implementation of *(PLN)-related activities by teachers in your school?*

Student and teacher effects

37. What changes, if any, do you think that your involvement and teacher involvement in the PLN's has had on student participation and learning in your school? Evidence? (Probe for individual classroom effects and school-wide effects)
38. What difference, if any, do you think that PLN participation is having on the professional practices and beliefs of teachers in the school? (Probe for PLN teacher effects and non-PLN teacher effects)

PLN member impact

39. How has participation in (PLN) activities influenced your own professional knowledge and skills as a head teacher? (BEFORE/AFTER)
40. How has participation in PLN activities affected your confidence as a head teacher to effectively manage the school? Please explain? (BEFORE/AFTER)
41. How has participation in PLN activities affected your confidence as a head teacher to effectively lead improvements in teaching and learning in the school? Please explain?
42. How has participation in PLN activities affected your thoughts about professional learning as an ongoing part of head teachers' work? (BEFORE/AFTER)
43. What difference, if any, has your participation in PLN activities had on your career commitment as a head teacher or in other education leadership roles? (BEFORE/AFTER).

Student effects

44. What changes, if any, do you think that your and your school's involvement in (PLN) activities has had on student participation and learning? Indicators?

PLN Leader Interview

PLN leader background

1. What school are you from and how long have you been there?
2. How many years teaching and administrative experience do you have?
3. When did you graduate from the PDC and how long have you been a member of (name of PLN)?

PLN leader role

4. What do you see as the main goals of the PLN?
5. When did you become chair of the (name of PLN) executive committee? How were you appointed as chair?
6. Who are the other members of the executive and how were they chosen?
7. What does the PLN executive group actually do? What do you do in your role?
8. What preparation and support have you received for your role as a leader of (PLN)?
9. What are the major challenges for carrying out the role and responsibilities of the PLN leader role?

PLN leader communication and activities

12. How do members of the (PLN) executive communicate with each other? (meetings, phone)
13. What do you talk about? What kinds of decisions do you make on behalf of (PLN)?
14. How does the (PLN) executive communicate with cluster leaders and members and for what reasons?
15. How is the schedule and agenda of the monthly (PLN) meetings decided?
16. What happens at monthly meetings and what role do you play there?
17. Does (PLN) have a long term "plan" of action for the PLN? If yes, please explain?

Participation and other challenges

18. How are the challenges, if any, for active participation in (PLN) at the association and cluster levels? Variability by cluster? Variability by cohort?
19. How would you compare and describe male and female participation in the (PLN)? Indicators?
20. What role do the PDC and its leaders play in supporting the work of (PLN)?
21. What influence do government policies and officials have on the work of (PLN)?
22. What do you see as the major challenges to the work and sustainability of (PLN)?

PLN executive committee activity

23. Who are the members of the PLN executive committee?
24. What was the process for appointing you as a member of the PLN executive committee?
    What is the term of PLN executive committee members?
25. What is the purpose of the PLN executive committee?

26. What preparation and support have you received for your role as a member and chair of the PLN executive committee?
27. How are decisions made about the scheduling, agenda and activities of PLN executive committee meetings? Uses of data to inform decision-making?
28. What actually happens at executive meetings? Topics? Process?
29. Who leads the PLN executive meeting activities? Does anyone assist, and in what ways?
30. How would you compare and describe male and female participation in the PLN executive committee and in the clusters?
31. How would you compare the participation of representatives from the different PLNs?
32. PDC leader role in the work of the PLN executive?
33. What influence does the PLN executive have on what happens in the different PLNs? Or vice versa?

Cluster and school monitoring and effects

34. What role and responsibilities, if any, does the PLN executive committee have for monitoring what happens in the PLN meetings? Please explain? How is that information used?
35. What role and responsibilities, if any, does the PLN executive committee have for monitoring and assessing the impact of PLN activity on PLN members and their schools? Please explain? How is that information used?

Classroom Teacher School Interview

Reflections on observed lesson and planning process

1. If you had to self-evaluate this lesson…. what grade would you give yourself (A, B, C, D)? Please give some examples to substantiate your grading.
2. How would you improve your lesson?
3. How does the lesson I observed, compare to the way you normally plan and deliver this class over the past week?
4. What connections, if any, are there between the lesson I observed and any **school – wide goals and plans** for improvement in teaching and learning?

Connections to AKAM PD and PLN activities

5. What PD programs offered by AKAM-PDC have you taken part in and when? Who are the other AKAM trained teachers or administrators in this school?
6. What connections, if any, are there between the lesson I observed and the **training you got in the PLES program OR other PD programs offered by the AKAM-PDCE**? For example, in planning, teaching methods, materials, student activities, assessment? Is there anything else?
7. **(ONLY ELTA/MTA teachers)** - What connections, if any, do you see between the lesson I observed you teach today and your participation in ELTA or MTA at the cluster or association level?

Professional Support and Communication

8. In what ways, in any, do teachers collaborate in this school on matters of teaching and learning? In what contexts? With who (not limited to work with AKAM trained teachers)? Activities? Obstacles to building collaboration? Examples?
9. Who do you turn to for advice and help on issues of teaching and learning? These may be colleagues other than those trained by AKAM, and may include people from either inside or outside the school. Why these people?
10. Can you give me examples of recent help/advice seeking? About what? With whom? How you communicated with each other?
11. Do any of your colleagues come to you for advice to support challenges in teaching and learning? Who? Why? How? Examples?
12. What role does the head teacher play in leading and supporting teachers' work in the classroom? Who else plays a significant role in guiding and supporting teachers' work?

School characteristics

13. How would you describe your school in terms of its performance? Student population and community it serves? The experience and quality of teachers? Facilities and resources? Challenges?

Student effects (For ELTA/MTA teachers)

14. What effects, if any, do you think that your involvement in ELTA/MTA has had on student participation and learning in your classroom? Evidence?
15. What effects, if any, do you think that the involvement of educators from your school in the AKAM supported professional associations (ELTA, MTA, MELA) has had on student participation and learning in your school? Evidence?

Teacher impact (For ELTA/MTA teachers)

16. What difference has participation in ELTA or MTA activities made in your professional knowledge and skills as a teacher?

- Probe for variety of professional practice outcomes
- Probe for explicit examples of change in knowledge/beliefs, skills, materials etc.

17. How has your participation in PLN activities affected your confidence and commitment as a teacher?

18. How has your participation in PLN activities and that of other PLN members in the school affected the professional practices and beliefs of other teachers in the school? Evidence?

Head Teacher School Interview

Participant background

1. How long have you been a head teacher at this school?
2. How many years of experience do you have as an educator and what other positions have you held?
3. Do you belong to a PLN (MELA)?
    a. If yes…., when did you graduate from the PDC and how long have you been a member of (PLN)? Do you consider yourself an active member? Explain.
    b. If no…. what do you know about MELA – its purpose, activities, membership??

School characteristics

4. How would you describe your school in terms of its performance? Student population and the community it serves? The experience and quality of teachers? Facilities and resources?

5. What do you see as the major challenges for strengthening the quality of teaching and learning in this school?

School management and leadership

6. What kinds of school management and leadership practices have you tried to implement in your school *that relate to your participation in the PLN?* (MELA members ONLY)

-probe for illustrations

7. Does the school have school-wide goals and plans for school development and improvement? Explain what they are and how they were developed?

8. What school system policies and action of school system authorities help or hinder the implementation of PLN-related activities related to school management in your school?

Teacher development and professional community: general

9. As head teacher what role do you play in leading and supporting teachers' work in the classroom? Who else from inside or outside the school plays a significant role in guiding and supporting teachers' work? Explain.

10. In what ways do teachers in this school work together on matters of teaching and learning? Contexts? Participants and processes? Examples?

11. How do you see the level of teacher openness in your school to working together on challenges of student learning and teaching? Obstacles to building trust and collaboration among teachers?

Probe: gender issues that affect teacher-teacher interaction and collaboration

Teacher development and professional community: PLNs

12. How many AKAM-PDC trained English and mathematics teachers are there in your school?

13. In what ways do you support teacher implementation of PLN-related activities and practices individually and together?

- Probe for illustrations

14. What school or school system-level factors help and hinder the ability of teachers to improve the quality of teaching and learning?

Social networking

15. Whom do you turn to for advice on challenges that you experience in managing and leading the school?

–Probe: who, why, how examples (PLN cluster group, education authorities, others)

16. Do other head teachers ever come to you for advice about challenges they face in managing and leading their schools?

-Probe: who, why, how, examples

Teacher and student effects

17. What effects, if any, do you think that involvement of educators from your school in the PLNs is having on teachers in the school? Evidence?

-PLN teachers

-other teachers

18. What effects, if any, do you think that involvement of educators from your school in the PLNs has had on student participation and learning in the school?

-Probe: at the individual classroom level? Evidence?

-Probe: at the school level? Evidence?

PDC Leader Interview

PDC leader background

1. What are the primary responsibilities of your current role in the PDC?
2. What responsibilities do you have for supporting the activities of the PLNs?

PLN goals

3. What do you see as the main goals of the PLNs and their school clusters?

PDC support for PLNs

4. What role did the PDC play in the initial creation of the PLNs? How were you involved?
5. What financial and other types of operational assistance (e.g., space, materials) does the PDC provide on an ongoing basis to support the work of the PLNs? Change over time?
6. What involvement do you and your PDC colleagues have in managing the PLNs and their school clusters?
   Probe: making decisions and plans for PLN activities and topics?
   Probe: selection of cluster heads and PLN executive committee leaders?
7. What involvement does the PDC have in leading or supporting PLN executive and school cluster meetings? Your role in those meetings with the PLNs that you work with?
8. Beyond initial training programs for PLN members, what kinds of professional development does the PDC provide in response to the ongoing work and needs of PLNs for professional support? Examples? Your participation?
9. Are all the PLNs and school clusters functioning equally well? How is PDC support to the PLNs differentiated, if at all, for different PLNs and school clusters? Please explain?
10. What would you highlight as key skills and knowledge that you and your PDC colleagues need to effectively support the implementation of school-based PLNs?

PLN and school monitoring and effects

11. What role does the PDC have in monitoring what happens in PLNs and school cluster meetings? Please explain? How is that information used?
12. What role does the PDC have in monitoring the impact of PLN activity on participating members and their schools? How is that information used?
    -Probe: impact on teacher/head teacher professional expertise
    -Probe: impact on teacher/head teacher career commitment
    -Probe: School effects on teaching and learning

PLNs and gender

13. How do you see gender issues coming into play in the work of the PLNs?
    Probe: As a topic for discussion and intervention in student learning?
    Probe: As a factor affecting interaction among PLN members?
    Probe: As a factor affecting leadership within the PLNs and school clusters?

PLN implementation and sustainability factors

14. What do you see as factors internal to the PLNs and school clusters that significantly help and hinder implementation of PLN activities and goals? Examples and evidence?
15. In your view, is sustainability of the PLNs dependent upon ongoing involvement of the PDC in the PLNs? If yes, in what ways? If no, then why?
16. What school system policies and other external factors significantly help and hinder PLN activity and goals? Examples and evidence?
17. What kinds of resource and professional support for the PLNs are available and provided by school system authorities and other external agencies?

PLN on-line activities

18. What involvement, if any, do you and your PDC colleagues have in the organization and implementation of the on-line discussion forums among members in the PLN?

Conclusion

19. Is there anything you would like to add to what you've said that would help us better understand how the PLNs are working and their impact on PLN members and schools?

Online discussion forums (WhatsApp)

20. How are you using these? Benefits/Challenges? Would we be able to get access to these to view the types of topics/issues that are being discussed to support PLN activities?

External Stakeholder Interview

Introduction

As you may recall, a few years ago the Professional Development Centre (PDC) at the Aga Khan Academy Mombasa established several professional associations for alumni of its core training programs for elementary school English teachers, math teachers, and for head teachers. These are the: English Language Teachers' Association; Math Teachers' Association; Mombasa Educational Leaders' Association; and Kwale Educational Leaders' Group.

New members are invited to join the associations each year following their graduation from the training programs, with each association meeting on an ongoing basis in large group and school clusters.

A team of researchers from OISE, University of Toronto, with the support of PDC staff, are conducting a study, funded by AKF's SESEA program to find out what these groups are doing, what the benefits of participation are, and what the challenges are for sustainability.

Informed consent (if they are willing to sign) Share the Ministry doc and Country director documents that approve the study.

Participant Background

1. What is your current position? How long have you been in this role? Previous positions held within the education sector?

2. In what ways have you come to know about the activities and members of the Aga Khan supported teacher and head teacher associations in Mombasa and/or Kwale?

Purpose and Functioning of Professional Associations

3. What do you see as the main purpose of these Professional Associations?

4. Please describe for us your understanding of what the teacher and head teacher associations and their associated school cluster actually do (i.e., agenda-setting, strategy development and implementation, monitoring, professional development, etc.)?

5. Please describe for us what communication and interactions you have actually had with the teacher and head teacher associations at the association and or school cluster levels? Contexts? Frequency? Purpose of your interaction?

6. What potential or actual benefits do you think that membership in these teacher and head teacher association bring to the participants and to their schools?

7. What do you see as some of the main challenges facing these teacher and head teacher associations in terms of effectively supporting their members and other educational leaders and educators in school improvement efforts?

8. In your view, what role do you see the associations playing in terms of responding to County or Government priorities in the education sector?

9. How might the Government connect with and support the work of the professional associations?

10. Should participation in these teacher and head teacher associations be formally recognized as "professional development" in government human resource policies and procedures? How would that work?

11. Direct support for the Professional Associations by the Aga Khan PDC is gradually being reduced and will eventually stop all together. We are interested to know your thoughts on their sustainability. As the Professional Associations continue independently, what do you think the criteria for membership should be? What relationship do you see (and/or would like to see) between other teacher and head teacher professional organizations (e.g., teachers' union, others)?

Appendix 3
FOCUS GROUP INTERVIEWS

Teacher Focus Groups

PLNs and school improvement.

From our interviews and classroom observations we know that active ELTA and MTA members are experiencing individual professional benefits from their participation in the PLN cluster meetings and PLN level activities. It is not all that clear to us how those individual outcomes are or can be expanded to other teachers within the member schools and lead to school improvement? Can you share any examples from your own experiences? What school level factors help or hinder this sharing?

PLNs and challenges of practice

In cluster meetings, we observed participants naming and sharing challenges of practice in student learning and teaching. Sometimes these conversations led to suggestions among peers about how to solve those challenges. We did not, however, hear about follow-up on the implementation of these kinds of suggestions individually or as group. Can you share any examples from your own experiences? What are the obstacles to implementation and follow-up on suggestions for solving problems of practice at the cluster and school levels? What could be done to address those obstacles?

PLNs and professional community in member schools

One of the messages from research on teacher professional learning networks is that the potential for follow through and impact at the school level is strongly dependent upon the strength of professional collaboration in the schools. What school level factors help or hinder professional collaboration in your schools? What difference, if any, does teacher participation in the PLNs make on the development OR sustainability of professional collaboration in your schools.

PLN activities and integration/collaboration with school system priorities and external support

One debate about teacher professional learning networks is whether they should be primarily sites for teachers to solve problems of practice that they themselves identify in their work in the classroom, or whether network activities should focus on responding to school system priorities and initiatives. What is the balance between school system-focused and teacher-based needs in the work of your clusters and PLNs? What are the pros and cons of focusing your PLN work on needs and challenges of practice defined externally by the school system authorities versus those defined by members? In what ways might the relationships between the School Clusters/PLNs

and government priorities and support be strengthened in order to benefit all parties for the pursuit of improved teaching and learning?

PLN Sustainability

We heard a number of mixed messages about the potential for sustainability of the PLN model in schools in Mombasa and Kwale, if **AKAM**'s involvement in the PLN associations was reduced. IF you could design a model that would help to ensure the sustainability of the PLN associations in Mombasa and Kwale, with decreased support from AKAM, what elements would be included in the model? Why are they important? Should membership in the PLNs continue to be limited to AKAM trained teachers?

Gender issues as a focus of PLN work

The SESEA funders are very concerned about whether and how gender issues are being addressed in all SESEA supported initiatives, including the PLNs. In our observation of cluster meetings and in our review of PLN cluster and monthly meeting minutes, we haven't seen any mention of gender issues related to student learning, teacher relations, or leadership. What do you think we should be saying about the relevance of gender issues to what you are doing in the PLNs, and how they are or are not addressed?

PLNs and Professional Development (optional)

Membership and participation in PLN association and cluster activities is not officially recognized and rewarded as a form of professional development by school system authorities. What actions could be taken and by who that would strengthen the argument that teacher work in PLNs and their clusters deserves that status? How could evidence of the benefits for teachers and students be demonstrated?

Head Teacher Focus Groups

PLNs and school improvement.

The aims of the PLNs are broad, but basically focus on developing and improving the professional knowledge and practices of individual members and on improving the quality of their schools. For school leaders, this includes improvements in school management and leadership practices, as well as improvements in the quality of teaching and learning practices and outcomes at the school level. What can you say about balance in your PLN between efforts to strengthen school management versus efforts to improve teaching and learning? Should priority be given to one or the other? Are they connected?

PLNs and challenges of practice

In cluster meetings and PLN minutes we observed participants identifying and making plans for collective action within the school clusters for a variety of challenges. Sometimes these related to common concerns about teaching and learning (e.g., composition writing). Sometimes about school leadership (e.g., training deputy heads to perform their duties better). Sometimes about school resources (e.g., school libraries). We did not hear a lot about the *RESULTS* of actions taken individually or as a group on improving what is happening in schools. What is being done or could be done to provide evidence of the impact of individual or collective actions by PLN members linked to PLN activity.

PLNs and collaboration with other schools

From our cluster meeting observations and minutes we know there is collaboration going on between the schools in each cluster. What can you say about collaboration with other school clusters across the PLN, and about collaboration with school leaders and schools who are not members of the PLN? Can you provide examples of collaboration across clusters and with non-PLN schools? Is that desirable? What are the obstacles to that kind of inter-school collaboration and how can they be addressed?

Head teacher and Teacher PLNs

The AKAM-PDC has supported the creation of both school leader and teacher professional learning networks. In our cluster observations, interviews and review of PLN minutes we don't see much overlap between what the school leader PLNs are doing in their clusters and schools and what the teacher PLNs are doing. What can you say about the relationship between the work of head teacher and teacher PLNs? Can you share any examples from your experience? What are the pros and cons and challenges of seeking greater communication and coordination in the work of school leader and teacher PLNs?

PLN activities and integration with school system priorities

One of the debates about professional learning networks is whether they should be primarily sites for participants to identify and solve problems of practice specific to their workplaces, or whether network activities should focus on responding to school system priorities and initiatives. What is the balance between school system-focused and school-based needs in the work of your clusters and PLN? What are the pros and cons of focusing your PLN work on needs and challenges of practice defined externally by school system authorities versus those defined by members? In what ways might the relationships between the School Clusters/PLNs and government priorities and support be strengthened in order to benefit all parties for the pursuit of improved leadership, teaching and learning?

PLN Sustainability

We heard mixed messages about the potential for sustainability of the PLN model in schools in Mombasa and Kwale, if **AKAM**'s involvement in the PLN associations was reduced. IF you could design a model that would help to ensure the sustainability of the PLN associations in Mombasa and Kwale, with decreased support from AKAM, what elements would be included in the model? Why are they important? Should membership in the PLN be limited to AKAM trained school leaders teachers?

Gender issues as a focus of PLN work

The SESEA funders are very concerned about whether and how gender issues are being addressed in all SESEA supported initiatives, including the PLNs. In our observation of cluster meetings and in our review of PLN cluster and monthly meeting minutes, we haven't seen any mention of gender issues related to student learning, teacher relations, or leadership. What do you think we should be saying about the relevance of gender issues to what you are doing in the PLN, and how they are or are not addressed?

PLNs and Professional Development (optional)

Membership and participation in PLN association and cluster activities is not officially recognized and rewarded as a form of professional development by school system authorities. What actions could be taken and by who that would strengthen the argument that head teacher and teacher work in PLNs and their clusters deserves that status? How could evidence of the benefits for teachers and students be demonstrated?

PLN EXECUTIVE FOCUS GROUP **(Mixed teacher and head teacher)**

PLNs and challenges of practice

In cluster meetings and PLN minutes we observed participants identifying and making plans for collective action within the school clusters for a variety of challenges. Sometimes these related to common concerns about teaching and learning (e.g., how to handle "time takers", composition writing). Sometimes about school leadership (e.g., training deputy heads to perform their duties better). Sometimes about school resources (e.g., school libraries). We did not hear a lot about the *RESULTS* of actions taken individually or as a group on improving what is happening in schools. What is being done or could be done to provide evidence of the impact of individual or collective actions by PLN members linked to PLN activity.

PLNs and collaboration with other schools

From our cluster meeting observations and minutes, we know there is collaboration going on between the schools in each cluster. What can you say about collaboration with other school clusters across the PLN, and about collaboration with teachers, school leaders and schools who are not members of the PLN? Can you provide examples of collaboration across clusters and with non-PLN schools? Is that desirable? What are the obstacles to that kind of inter-school collaboration and how can they be addressed?

PLN activities and integration with school system priorities

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Head teacher and Teacher PLNs

The AKAM-PDC has supported the creation of both school leader and teacher professional learning networks. In our cluster observations, interviews and review of PLN minutes we don't see much overlap between what the school leader PLNs are doing in their clusters and schools and what the teacher PLNs are doing. What can you say about the relationship between the work of head teacher and teacher PLNs? Can you share any examples from your experience? What are the pros and cons and challenges of seeking greater communication and coordination in the work of school leader and teacher PLNs?

PLN Sustainability

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Gender issues as a focus of PLN work

The SESEA funders are very concerned about whether and how gender issues are being addressed in all SESEA supported initiatives, including the PLNs. In our observation of cluster meetings and in our review of PLN cluster and monthly meeting minutes, we haven't seen any mention of gender issues related to student learning, teacher relations, or leadership. What do you think we should be saying about the relevance of gender issues to what you are doing in the PLN, and how they are or are not addressed?

PLNs and Professional Development

Membership and participation in PLN association and cluster activities is not officially recognized and rewarded as a form of professional development by school system authorities. What actions could be taken and by who that would strengthen the argument that head teacher and teacher work in PLNs and their clusters deserves that status? How could evidence of the benefits for teachers and students be demonstrated?

Appendix 4
PLN CLUSTER MEETING OBSERVATION GUIDE AND SUMMARY FORM

Date:		Location:			
Cluster Name:					
Cluster Leader Name:					
Researcher:					
Duration :		Start time:		End time:	
Number of participants by group:		Women		Men	
Teachers					
Head teachers					
PDC staff					
Other (please specify)					
TOTAL:					
# of members absent (ask cluster leader for this information)					
Themes/topics/areas covered during the cluster meeting:					
Approximate amount of time spent per activity (in minutes):					
Administration/rule setting/ planning:		Storytelling/sharing experiences:			
Jointly analysing and reflecting on experiences:		Discussing new strategies/solutions to address issues:			
Other (please specify):					

THEME 1: ORGANISATION, LEADERSHIP AND MANAGEMENT

Guiding Questions:

- How is the cluster organised? (physically and socially)
- Who is undertaking the logistical and administrative work to organise the meeting?
- Who is directing the meeting and what is the nature of this leadership?
- To what extent does the leadership of the cluster seem to be distributed amongst other members? (level of hierarchy in the cluster)
- Who is providing formal and informal professional leadership in the cluster?
- To what extent is the cluster is building on previous knowledge and continuing previous discussions? (Is it continuous process or does the meeting seem like it is a "one-off," discrete event?)
    - Are there agenda points/action points/updates to be reviewed from the last cluster meeting?
    - Are items discussed at the meeting related to the previous cluster meeting?

THEME 2: CLUSTER PURPOSE, DISCUSSION AND ACTIVITIES

Guiding Questions:

- What is the focus of the meeting?
    - To what extent is the meeting focused on student learning?
    - Is there an explicit focus on shared problems of learning
- Are there clearly established goals/objectives for the group, such as "improvement in X"?
- What types of issues/problems are discussed in the cluster?
    - Is there an explicit focus on shared problems of learning?
    - To what extent are problems of ongoing practice/locally relevant problems of practice discussed?
- What is the origin of the problems/issues being discussed in the cluster meeting? Are the issues being discussed originating from the teachers themselves or the PDC/cluster leadership?
    - *(Important to differentiate between support for the implementation of concepts learned in the PDCs and **new** learning and changes in professional practice)*
- What kind of collaboration is evident in the PLC meeting?
    - What activities do the cluster participants undertake during the meeting?
        - Storytelling? Aid and assistance? Sharing? Joint work?
    - What level of reflective practice is evident?

THEME 3: RELATIONSHIPS/SOCIAL PATTERNS

Guiding Questions:

- What is the level of openness and trust among the participants?
    - How open do participants seem? Do they open themselves up to criticism, admit to making mistakes, ask for help?
- How equally do men and women participate in the cluster meeting?
    - What is the nature of women's participation in the meetings?

    - Are women given an equal % of time to talk?
- Are there other relationship patterns based on age, ethnicity, religion, experience, socio-economic class, school, level/grade of instruction or other difference which are visible?
- What is the socio-emotional environment of the meeting like?
    - How do teachers interact before the meeting starts and after it finishes?
    - Do teachers tend to congregate into small groups, or do people seem to move throughout the meeting/interact with everyone?
    - Are there informal discussions about problems of practice occurring before and after the "official" meeting?
- How do cluster members communicate with each other?
    - Who speaks to whom and for how long?
    - Who initiates the conversation?
    - How do people use their bodies and voices?

Appendix 5
CLASSROOM OBSERVATION TOOL

Classroom Observation Tool (AKAM-PDC) (to be used with Appendix A and B)

Collaboratively Developed by: M. Drinkwater (OISE); E. Kiforo (AKAM-PDC); Howard Omukami (AKAM-PDC) ADAPTED FROM Multiple Sources including: AKU-IED, 2009; Anderson & Nderitu, 1999; Park, 2012) – Version 13-June 17

Look For	Comments
PART 1: CREATING THE CLASSROOM ENVIRONMENT; CLASSROOM MANAGEMENT	
Creates an inviting, child-friendly learning environment for both girls and boys	
Teacher interest and enthusiasm	
Recognizing and celebrating learner work and contributions from both girls and boys	
Constructive approaches to discipline for both girls and boys	
Lesson pace/timing	

PART 2: INSTRUCTIONAL AND ASSESSMENT STRATEGIES	
A) DEMONSTRATIONS; EXPLANATION (Clear; Authentic/Relevance; Subject-specific language; Level of the learners*, both girls and boys)*	
Explanation (clear, appropriate, level, language)	
Demonstration	
Application (clear, appropriate, connected to experience)	
B) INCLUSION AND DIFFERENTIATED INSTRUCTION (Learning Styles; Gender responsiveness; Language choice for teaching and learning)	
Differentiated and gender equitable instruction responsive to learner characteristics and learning needs	
Use of gender responsive language & Mother Tongue to enhance inclusion, engagement & comprehension	

C) LEARNER ENGAGEMENT & QUESTIONING STRATEGIES (Critical, Creative, Collaborative, Gender Responsive)	
Pairs/group work (gender considerations)	
Uses a variety of questioning strategies (Closed-ended; open-ended; varied thinking levels; percolation time; well-distributed; consideration for both girls and boys)	
Use of instructional strategies that engage learners in higher-level thinking (critical, creative, collaborative)	
Gender-equitable involvement in learner presentations	

D) DIAGNOSTIC AND FORMATIVE ASSESSMENT	
Check learners' prior knowledge relative to lesson content (inclusive of girls and boys)	
Checking for understanding for both girls and boys, throughout the lesson	
Constructive feedback & support for both girls and boys	
Lesson synthesis and checking for understanding	
PART 3: USE OF INSTRUCTIONAL RESOURCES (Gender responsive; Culturally relevant and appropriate learning materials; Wide variety and use of learning materials; Use of technology to support learner learning)	
Learning materials (level, appropriate, relevant, locally available, equitably distributed and responsive to gender).	
Technology infusion that supports learning for both girls and boys	

APPENDIX A: Participant Demographics and Background Information Form (to be completed by the participant prior to the Classroom Observation)

(*adapted from AKU-IED tool No. 08b*)

SECTION A		SECTION B	
School Name: School Cluster: Type of School (Public/Private:MIXED/ SINGLE SEX); Other (specify);	_____ _____ _____	Duration of class	From_____ To_____
Class/Grade: Subject: Topic: Sub-topic/Learning area:	_____ _____ _____ _____	Gender of teacher	1=Male 2= Female
Date			

SECTION A		SECTION B	
Name of the teacher Academic qualification: Professional qualification: Teaching experience: Date of graduation from PLES: Other PLES or PD programmes (details):	_____ _____ _____ _____ _____ _____ _____	Learners Sitting Class size	1= Enough seats/benches for all; 2= Children squeezed 3= Some children sit on the floor; 4= All children on the floor Boys_____ Girls_____ Total_____

APPENDIX B: Scoring Rubric for Classroom Teacher Observation (to be completed following Classroom Observation and Teacher Interview) (v14-July 5)

Using the Rubric as an Assessment Tool: **On the basis of the *look-for* descriptions below, please circle the appropriate box for each criterion.**

Scoring levels:

4=Excellent (vizuri sana , 3=Good (nzuri/vema), 2=Fair (inafaa/inaridhisha), 1 =Unsatisfactory (Haitoshelezi), and N/A=Not Applicable

	4	3	2	1	N/A
PART 1: CREATING THE CLASSROOM ENVIRONMENT; CLASSROOM MANAGEMENT					
Creates an inviting, child-friendly learning environment for both girls and boys	Teacher creates a child-friendly atmosphere of respect, trust, and openness where teacher and learners, *both girls and boys*, are all part of a collaborative learning community.	Teacher creates an atmosphere of trust and openness where learners' views, *both girls and boys* are encouraged, however value was only given to some.	Teacher creates an atmosphere of openness but only some of the learners' views were encouraged.	Teacher dominates the class and *both girls and boys* are fearful and hesitant to contribute or ask questions.	
Teacher interest and enthusiasm	Teacher always demonstrates interest and enthusiasm in teaching.	Teacher occasionally demonstrates interest and enthusiasm in the lesson	Teacher rarely demonstrates interest or enthusiasm in the lesson	Teacher shows little or no interest or enthusiasm in the lesson	
Recognizing and celebrating work and contributions from both girls and boys	Teacher consistently recognizes *both girls and boys* during the lesson; posts updated their work in the classroom	Teacher sometimes recognizes *both girls and boys* during the lesson; some posting of up-to-date work.	Teacher rarely recognizes *both girls and boys* during the lesson; showcase out-of-date learner work.	Teacher never recognizes *both boys and girls* learners during the lesson; no learner work posted in class.	
Constructive approaches to discipline for both boys and girls	Portrays excellent class management skills. Uses praise effectively. Deals with inappropriate behavior positively, re-directing undesired and re-enforcing desirable behavior accordingly.	Portrays good class management skills. Uses praise and deals with inappropriate behavior positively.	Uses general praises and/or struggles with managing inappropriate behavior	Does not praise effectively and/or uses harsh criticism	

	4	3	2	1	N/A
Lesson pace/timing	Well managed and allocates enough time for each section. Does not rush through or lengthen the lesson to complete the plan. Adapts quickly and appropriately when faced with disruptions to lesson plan	Allocates inadequate time to some sections. Rushes through or lengthens the lesson to complete the plan. Able to make some adjustments, when faced with disruptions.	Time allocation is not practical or well managed and either completes before or struggles to complete the plan.	Misses part of the lesson due to poor time/change management	
PART 2: INSTRUCTIONAL AND ASSESSMENT STRATEGIES					
A) DEMONSTATIONS; EXPLANATION (Clear; Authentic/Relevance; Subject-specific language; Level of the learners, *both girls and boys*)					
Explanation (clear, appropriate, level, language)	Explanations are contextual, clear and concise, using subject-specific language (vocabulary) appropriate to level and age of the learners.	Explanations are clear and the subject-specific language (vocabulary) used is appropriate to the level and age of the learners.	Explanations are provided however are not very clear; inappropriate use of language (including subject-specific language) e.g., is not age and contextually appropriate.	Explanations are unclear and confusing.	
Demonstration	Teacher clearly models (or has learners model) the activity for learners.	Teacher models the activity less well for learners.	Teacher models the activity incompletely for learners.	Teacher does not model the activity for learners.	
Application (clear, appropriate, connected to experience)	Several relevant and clear examples of subject-specific topics; learners explain concepts in their own words; multiple representations of concepts/ideas; application of knowledge to practical tasks; see/explain relevance the daily experiences of the learners.	Few relevant and clear examples linked to the lesson that children can relate to their daily life.	Not enough or clear examples relating to their daily life	No examples or examples not linked to the lesson	
B) INCLUSION AND DIFFERENTIATED INSTRUCTION (Learning Styles; Gender responsiveness; Language choice for teaching and learning)					
Differentiated and gender equitable instruction responsive	Teacher demonstrates significant differentiated and gender equitable	Teacher demonstrates some differentiated and gender equitable modes of instruction	Teacher demonstrates limited differentiation of instruction responsive to learner	Teacher does not differentiate instruction responsive to learner	

	4	3	2	1	N/A
to learner characteristics and learning needs	modes of instruction responsive to learner characteristics and learning needs.	responsive to learner characteristics and learning needs.	characteristics and learning needs.	characteristics and learning needs.	
Use of gender responsive language & Mother Tongue to enhance inclusion, engagement & comprehension	Teacher regularly uses local language and/or allows learners to use mother tongue to express understanding.	Teacher occasionally uses local language and/or allows learners to use mother tongue to express understanding.	Limited inclusion or use of mother tongue within the lesson by teacher or learners.	No use of mother tongue in lesson.	
C) LEARNER ENGAGEMENT & QUESTIONING STRATEGIES (Critical, Creative, Collaborative, Gender Responsive)					
Pairs/Group work (gender considerations)	Teacher consistently organizes learners into pairs or groups (gender considerations).	Teacher frequently organizes learners into pairs or groups (gender considerations).	Teacher occasionally organizes learners into pairs or groups (gender considerations).	Teacher did not organize learners into pairs or groups.	
Uses a variety of questioning strategies (Closed and open-ended; varied thinking levels; percolation time; well-distributed; consideration for both girls and boys)	Teachers use a wide variety of questioning techniques, including closed and open-ended; varied thinking levels; percolation time; well-distributed; consideration for both girls and boys).	Teachers employ some forms of questioning, including closed and open-ended; varied thinking levels; percolation time; well-distributed; consideration for both girls and boys).	Teachers demonstrate limited used of questioning techniques.	Teacher does not use questioning throughout the lesson.	
Use of instructional strategies that engage learners in higher-level thinking (critical, creative, collaborativ	Teacher uses a variety of activities to deepen critical, creative, collaborative thinking and engagement.	Teacher uses some activities to deepen critical, creative, collaborative thinking and engagement.	Teacher rarely uses activities to deepen critical, creative, collaborative thinking and engagement.	Very few activities to deepen thinking and learner engagement.	

	4	3	2	1	N/A
e)					
Gender-equitable involvement in learner presentations	Teacher always provides opportunities for gender-equitable involvement in learner presentations.	Teacher sometimes provides opportunities for gender-equitable involvement in learner presentations.	Teacher infrequently provides opportunities for gender-equitable involvement in learner presentations.	Teacher does not provide opportunities for gender-equitable involvement in learner presentations.	
D) DIAGNOSTIC AND FORMATIVE ASSESSMENT					
Check learners' prior knowledge relative to lesson content (inclusive of girls and boys)	Teacher demonstrated strong familiarity with all learners' level of understanding, abilities and learning needs and plans the lessons accordingly.	Teacher demonstrates some familiarity with learners' level of understanding and ability, and includes some adaptations/modifications in the lesson to meet learner learning needs.	Teacher is somewhat familiar with most learners' level of understanding and ability but does not modify lessons as needed.	Teacher does not understand or acknowledge different levels of learner understanding or ability and does not modify lessons.	
Checking for understanding for both girls and boys, throughout the lesson.	Consistently incorporates diverse forms of diagnostic and formative assessment with individuals and groups to check for understanding to meet each learner's learning needs.	Occasionally incorporates diverse forms of diagnostic and formative assessment with individuals and groups to check for understanding.	Teacher rarely uses on-going assessment strategies to meet each learner's academic needs.	Teacher does not use on-going assessment strategies to meet each learner's academic needs.	
Constructive feedback & support for both girls and boys	Teacher consistently spends time in a meaningful way interacting and supporting both girls and boys and/or learning teams.	Teacher frequently spends time in a meaningful way interacting and supporting both girls and boys and/or learning teams.	Teacher occasionally spends time in a meaningful way interacting and supporting both girls and boys and/or learning teams.	Teacher did not spend time in a meaningful way interacting and supporting both girls and boys and/or learning teams.	
Lesson synthesis and checking for understanding	Teacher always involves students in a synthesis of the lesson and summary of key learnings. Provides a final check for understanding.	Teacher does a synthesis of the lesson and summary of the key learnings. Provides a final check for understanding.	Teachers does a brief summary of lesson, but limited checking for understanding.	No summary or final wrap up to the lesson.	

	4	3	2	1	N/A
PART 3: USE OF INSTRUCTIONAL RESOURCES (Gender responsive; Culturally relevant and appropriate learning materials; Wide variety of learning activities; Wide use of learning materials; Use of technology to support learner learning)					
Learning materials (level, appropriate, relevant, locally available, equitably distributed and responsive to gender)	Uses and equitably provides a variety of relevant and safe learning materials in line with content delivery (locally available, culturally relevant and appropriate to the level of the learners, considering gender and inclusion).	Uses/provides relevant and safe learning materials appropriate to the learners.	Common learning materials used and reflect limited inclusion	Materials used/provided are not appropriate/relevant to the level; does not reflect inclusion; No extra learning materials other than textbook	
Technology infusion that supports learning for both girls and boys	Teacher consistently employs a variety of educational technology to deliver content knowledge and engage girls and boys in lesson objectives.	Teacher occasionally employs a variety of educational technology to deliver content knowledge and engage girls and boys in lesson objectives.	Teacher rarely employs educational technology to deliver content knowledge and engage girls and boys in lesson objectives.	Teacher never employs educational technology to deliver content knowledge and engage girls and boys in lesson objectives.	
Scoring guide	**Part 1: _____ (Max = 20)** **Part 2: A) _____(Max = 12) B) _____(Max=8)** **C) _____(Max =16) D) _____(Max=16)** **Part 3: _____(Max=8)** **TOTAL (Parts 1-3) = _____(Max=80)**		**# of items observed: _____** **(If ALL items observed =20)** SCORE = TOTAL (Parts 1-3) / # of items observed x 4 = _____ SCORE (out of 100) = _____		

Participant signature: **Date:**

Observer signature: **Date:**

Appendix 6
CLASSROOM OBSERVATION FINDINGS: INDIVIDUAL

ELTA

COT COMPONENTS	T1	T2	T3	T4	T5	T6	TOTAL	AVG SCORES
PART 1: CLASSROOM CLIMATE								
Child friendly (G)*	4	4	4	3	4	4	23	**3.8**
Teacher interest	3	4	4	3	4	3	21	**3.5**
Recognizing student work (G)	3	4	4	3	4	4	22	**3.7**
Positive discipline (G)	3	4	4	3	4	3	21	**3.5**
Lesson Pace	2	3.5	3	2	3.5	4	18	**3.0**
PART: 2 INSTRUCTIONAL STRATEGIES								
A.Demonstrations & Explanations								
Clear explanations	3	4	2.5	3	4	3	19.5	**3.3**
Teacher modelling	3	4	4	2	4	4	21	**3.5**
Giving examples	4	4	2.5	3	4	1	18.5	**3.1**
B.Inclusion & Differentiated Instruction								
Differentiated instruction (G)	4	3.5	2	3	3.5	NA	16	**3.2**
Inclusive language (G)	4	NA	3	2	NA	1	10	**2.5**
C.Learner engagement								
Group work (G)	4	4	4	4	4	3	23	**3.8**
Questioning strategies	4	3.5	2.5	3.5	3.5	3	20	**3.3**
Higher order thinking strategies	4	3.5	2	3	3.5	4	20	**3.3**
Student presentations (G)	4	4	4	3	4	1	20	**3.3**
D.Diagnostic & Formative Assessment								
Check prior knowledge	4	3.5	4	3	3.5	4	22	**3.7**
Check for understanding	3	4	3	2	4	3	19	**3.2**
Constructive feedback (G)	4	3.5	4	1	3.5	3	19	**3.2**
Lesson synthesis	4	4	3	3	4	3	21	**3.5**
PART 3. USE OF INSTRUCTIONAL RESOURCES								
Learning materials (G)	4	4	4	1	4	4	21	**3.5**
Technology infusion (G)**	NA	NA	NA	NA	NA	NA	NA	**NA**
OVERALL SCORE PER TEACHER * **	**89.5**	**91.0**	**83.6**	**73.0**	**95.8**	**76.4**		**84.9**

*(G) any component that included gender response language in the rubric
** The technology infusion item scores were not calculated due to large number of NAs given by assessors
*** Overall Score = $\frac{\text{TOTAL (Parts 1-3)}}{\text{\# of items observed x 4}} \times 100$

MTA

COT COMPONENTS	T1	T2	T3	T4	T5	T6	TOTAL	AVG SCORES
PART 1: CLASSROOM CLIMATE								
Child friendly (G)*	4	4	4	4	3	4	23	**3.8**
Teacher interest	4	4	4	4	3	4	23	**3.8**
Recognizing student work (G)	4	4	3	4	4	4	23	**3.8**
Positive discipline (G)	3.5	3.5	4	3.5	3	3	20.5	**3.4**
Lesson Pace	3.5	4	4	4	4	4	23.5	**3.9**
PART: 2 INSTRUCTIONAL STRATEGIES								
A.Demonstrations & Explanations								
Clear explanations	4	4	3.5	4	3	3	21.5	**3.6**
Teacher modelling	3.5	4	3.5	4	3	3	21	**3.5**
Giving examples	4	3.5	3.5	3.5	4	3	21.5	**3.6**
B.Inclusion & Differentiated Instruction								
Differentiated instruction (G)	4	3.5	1	3.5	3	3.5	18.5	**3.1**
Inclusive language (G)	NA	3.5	3.5	3.5	2	1	13.5	**2.7**
C.Learner engagement								
Group work (G)	3.5	4	3	4	3	4	21.5	**3.6**
Questioning strategies	3.5	3.5	2	3.5	4	3	19.5	**3.3**
Higher order thinking strategies	3	3	1	3	4	4	18	**3.0**
Student presentations (G)	3.5	4	4	4	2	3	20.5	**3.4**
D.Diagnostic & Formative Assessment								
Check prior knowledge	3.5	3.5	2	3.5	1	3	16.5	**2.8**
Check for understanding	3.5	4	1	4	2	3	17.5	**2.9**
Constructive feedback (G)	3.5	3.5	3	3.5	3	4	20.5	**3.4**
Lesson synthesis	3	3	2	3	2	4	17	**2.8**
PART 3. USE OF INSTRUCTIONAL RESOURCES								
Learning materials (G)	3	3	4	3	2	3	18	**3.0**
Technology infusion (G)**	NA	NA	NA	NA	NA	2	2	**2.0**
OVERALL SCORE PER TEACHER * **	**95.1**	**91.4**	**76.3**	**91.4**	**76.3**	**81.9**		**85.4**

*(G) any component that included gender response language in the rubric

* The technology infusion item scores were not calculated due to large number of NAs given by assessors

*** Overall Score = $\frac{\text{TOTAL (Parts 1-3)}}{\text{\# of items observed x 4}} \times 100$

CDF

COT COMPONENTS	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	TOTAL	AVG SCORES
PART 1: CLASSROOM CLIMATE														
Child friendly (G)*	3	2	3	3	2	4	3	3	3	3	3.5	3	35.5	3.0
Teacher interest	3	1	2	2	1	3.5	3	1	2	4	3.5	4	30.0	2.5
Recognizing student work (G)	3	1	2.5	2.5	2	3.5	2	2	3	4	3	3	31.5	2.6
Positive discipline (G)	3	2	2.5	2.5	2.5	3	3	4	2	3	3	2	32.5	2.7
Lesson Pace	4	3	3	3	4	4	4	4	2	3.5	4	4	42.5	3.5
PART: 2 INSTRUCTIONAL STRATEGIES														
A.Demonstrations & Explanations														
Clear explanations	4	1	3	3	3	3.5	3	4	3	NA	3.5	4	35	3.2
Teacher modelling	3	2	1	1	1	4	4	4	1	4	4	4	33	2.8
Giving examples	2	2	3	3	3	3.5	2	3	2	4	3.5	4	35	2.9
B.Inclusion & Differentiated Instruction														
Differentiated instruction (G)	2.5	1.5	1.5	1.5	1	3	2	2	2	NA	3.5	2	22.5	2.0
Inclusive language (G)	1	1	1	1	1.5	3	1	4	2	NA	NA	2	17.5	1.8
C.Learner engagement														
Group work (G)	2	1	2	2	2.5	4	1	1	2	3.5	4	1	29	2.4
Questioning strategies	3	1	2	2	2	3	2	2	2	3.5	3	2	27.5	2.3
Higher order thinking strategies	3	1	2.5	2.5	2	3	2	3	2	3.5	3.5	3	31	2.6
Student presentations (G)	3	1	4	4	4	3	2	2	3	3	3	2	34	2.8
D.Diagnostic & Formative Assessment														
Check prior knowledge	2	1	1	1	1	3	3	3	3	3.5	3.5	3	28	2.3
Check for understanding	3	1	2	2	1.5	3	2	3	3	3.5	3.5	3	30.5	2.5
Constructive feedback (G)	2	1	3	3	1	3	3	3	2	3	3.5	2	29.5	2.5
Lesson synthesis	2	1	2	2	1	3.5	2	3	2	2	1	2	23.5	2.0
PART 3. USE OF INSTRUCTIONAL RESOURCES														
Learning materials (G)	1	2	1	1	2.5	2	3	3	2	2	3	4	26.5	2.2
Technology infusion (G)**	1	1	NA	NA	NA	NA	1	2	1	NA	NA	NA	6	1.2
OVERALL SCORE PER TEACHER * **	**63.1**	**34.4**	**55.3**	**55.3**	**50.1**	**69.0**	**60.0**	**70.0**	**55.0**	**82.8**	**82.6**	**71.1**		**62.4**

*(G) any component that included gender response language in the rubric
** The technology infusion item scores were not calculated due to large number of NAs given by assessors
*** Overall Score = $\frac{\text{TOTAL (Parts 1-3)}}{\text{\# of items observed x 4}}$ x 100