

# Co-Creating Teacher Education Reform in Sub-Saharan Africa in Collaboration with Japan : Reflective Lesson Study Initiatives in Malawi and Ghana

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# Co-Creating Teacher Education Reform in Sub-Saharan Africa in Collaboration with Japan

Reflective Lesson Study Initiatives in Malawi and Ghana

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## 1. Introduction

Japan's assistance to other nations in mathematics and science education has been carried out mainly through JICA, which implemented the first technical assistance project in the Philippines in 1994. The characteristics of mathematics and science education assistance at the time included being politically and culturally neutral, being relatively superior in science and mathematics subjects, and not being hindered by the lack of language skills (Sawamura, 1999). Subsequently, against the background of the high demand for the development of basic education and the global assessment of Japanese science and mathematics education, JICA's assistance in science and mathematics education expanded rapidly (JICA, 2007). In particular, SMASSE (Strengthening of Mathematics and Science in Secondary Education), which was implemented in Kenya, has been providing region-wide assistance. Approximately 1200 people from 26 countries and 1 region were trained in Kenya, and 21 countries are working on projects to improve teachers' teaching practice abilities (JICA, 2013).

As a continuing aspect of such efforts, the University of Fukui has accepted trainees from African countries, including Malawi and Ghana, as part of its "Improvement of Quality of Education through Lesson Study," a JICA knowledge co-creation program (henceforth, KCCP) since Fiscal Year 2016. This program has been conducted for three weeks based on the basic curriculum of the Department of Professional Development of Teachers, Graduate School Education, University of Fukui, and the teacher's license renewal course conducted by the Department of Professional Development of Teachers, Graduate School Education, University of Fukui. More specifically, the program develops and supports practice, inquiry, writing, and reflective conferences in weekly cycles. The first week focuses on reflective lesson study, emphasizing experiences leading to the understanding of inquiry and spiral learning. The second

week deepens the training by adding components of teacher learning and its support group. The third week broadens experiences and learning to perspectives and organizations to build professional learning communities that support long-term development. The project builds on the concepts of reflective lesson study (Yanagisawa & Kishino, 2018), reflective practice (Schön, 1983), and communities of practice (Wenger, McDermott & Snyder, 2002). This three-week knowledge co-creation program is fundamentally designed to equip African educators on the transformative process of conducting training to develop reflective practice skills for professional learning in their institutions and regions; results were written in the form of practice records (University of Fukui, 2018).

To date, it can be found in the reports (University of Fukui, 2018) that the KCCP program emphasizes on the importance of reflective lesson study and professional learning communities to shift to inquiry-based competence-formation approaches of learning (Yanagisawa & Kishino, 2018). Crucial to the reflective lesson study is the reflective stance of the practitioners. Schön (1983) suggested two levels of reflection in practice: reflection in action and reflection on action. In reflection, a practitioner creates professional knowledge; and when such knowledge is shared among a community, the knowledge is expanded. Wenger, McDermott and Snyder (2002) proposed seven principles in cultivating communities of practice. It is these seven principles which served as a baseline for the theoretical framework of a community of practice-related inquiry in the KCCP program. In examining the programmatic structure and implementation of the 2016 University of Fukui and JICA's KCCP, two key ideas emerged around cultivating a community of practice: designing learning opportunities through cycles of inquiry and connecting school-based activities to reflective reading and writing (Hartmann, Mangulabnan & Hanbara, 2017). But, what does this mean after the trainees have gone back home?

In terms of earlier efforts when participants returned to

home countries, Hatanaka (2013) visited African trainees after they had returned and conducted interviews on how they were utilizing their training after their return. The results indicated that they were utilizing teaching materials and computers as a teaching method in classes. Fujii and Matsuda (2013) also conducted interviews with returning trainees on the achievements and challenges of the training, as well as observing on-site research classes and research council sessions. The results showed that the trainees had an awareness that differed from the training content on lesson study after returning home. Although research on trainees' efforts after returning home is underway, little is still known about returning trainees' actual practices and initiatives. Most of the studies on follow-ups on teacher training programs remain focused on evaluating programs in terms of trainee perceptions or correlations of teacher action and student test scores (Franke, Carpenter, Levi & Fennema, 2001; Popova, Evans, Breeding & Arancibia, 2019). In addition, studies such as Sullivan (2002) and Goderya-Shaikh (2010) on effective follow-up strategies for teachers who underwent professional training e.g., lesson visits, progress checklists, learner assessment, among many others remain as recommendations. Another study on ICT-related teacher training in sub-Saharan Africa suggested the creation of an evaluation protocol that includes medium-term evaluation by local actors (Lautz-Cauzanet, 2018). The case for overseas short-term teacher training is not far from these studies. Limited is studied, if not none, on the actual process of practice that is taking place among returning trainees. Furthermore, little is known about the characteristics of the process of implementing initiatives and efforts in the home country as a result of the training acquired.

In the presentation of the early KCCP efforts, Hartmann et al. (2017) recommended probing on other possibilities on how to continue supporting international communities of practice around lesson study, especially after the trainees have gone back to their home countries. This study aims to address the follow-up gaps in the literature in sub-Saharan African regions, and a model for teacher education reforms and evaluation of external teacher training programs such as the KCCP at the University of Fukui. In the World Association of Lesson Study Conference in 2019 Conference, a team from the University of Fukui and trainees from Malawi, Ghana and Uganda presented their reflections on their KCCP experiences. This study builds on that reflection and aims for understanding how chosen Malawi and Ghana trainees designed and implemented teacher reforms in their home countries as a result of KCCP in Fukui. More specifically, this research aims to answer the following questions:

- i. *Which elements of the training had the strongest impact among the trainees based on their written practice records? How did it impact teacher education reform processes and practices in the chosen regions?*
- ii. *What initiatives or projects did the trainees implement from the time they returned to their home countries? What kinds of teacher education reform initiatives are being introduced in Malawi and Ghana?*

This qualitative double case study analyzed learning from KCCP and teacher education reform models of four African educators. Two educators are from Ghana who participated in 2017 and 2018, respectively. From the time of the training

until the time of this research, both of them belong to the Ghana National Teaching Council (NTC) in charge of teacher training-related duties. The other two African partners are from Malawi who participated in 2016 and 2017, respectively. One is from the Malawi Ministry of Education, Department of Teacher Education and Development, and the other is a head teacher of a Secondary School. Both of them are teacher trainers; the former is a national trainer and the latter is a regional trainer. All four African educators are also co-authors of this research. The data for analysis is triangulated from the practice records produced during the KCCP program, follow up documents and discussions by the University of Fukui with the African educators, and the practice records written by African co-authors in this research. KCCP program notes and documents are also included in the set of data. Initially, researchers reflected on the activities that had transpired. A content analysis of the practice records was done to code emerging patterns on the content with a focus on the designed action plans. Initially, it was looking at countries separately before comparing the results between the two countries. The next part is the analysis of the researchers on the implemented activities from the time of return until the present. All the practice records were juxtaposed in terms of project execution. The comparison of the written practice records and reflections of current projects (triangulated with reports from university teacher educators) guided the researchers to identify patterns of emerging teacher education reform models in sub-Saharan Africa. From that analysis, the research questions were addressed.

## 11. Educational Reform in Malawi

### 1. History of Japan's educational cooperation in Malawi

As the Republic of Malawi made primary education free in 1994, the number of people enrolling in primary and secondary schools also increased sharply, resulting in a shortage of secondary teachers. The Malawian government then responded to the immediate quantitative shortage by relocating primary qualified teachers (lower qualified teachers) as secondary teachers. As a result, while access to secondary education is improving, a look at the qualitative aspects reveals that many issues remain, such as the shortage of qualified teachers, classes without conceptual understanding, and low pass rates in the completion qualification examination for latter secondary education. In response to these circumstances, the Malawian government—with JICA's assistance—has been working on establishing and implementing an in-service teacher training system since 2004. The system provides training using the cascade method (i.e., transmission-training method), and the cluster method (group training method) to supplement the former. Furthermore, national trainers and university professors are cooperating with on-site teachers to conduct action research in an effort to improve training quality.

A total of eight educators from Malawi participated in training at the University of Fukui for a span of four years (2016 - 2019). The host university had also flown to Malawi for follow up visits in 2017, 2018 and 2019. In October 2017

and December 2019, past trainees in Fukui opened their classes for lesson study together with partners from University of Fukui and other Malawian teachers; consequently, Malawi Roundtable were organized and held. Participants at the roundtable opined that it was a place to promote collaborative learning among teachers, and that the presence of diverse participants enabled them to view their own experiences from various perspectives. In addition, a roundtable was adopted at the INSET (In-Service Training) in October 2018 which was implemented by Malawian teachers and leaders with the participation of a delegate from University of Fukui. Participants, including the past Fukui trainees involved in organizing the roundtable, shared that *the event was a non threatening and effective opportunity to share and deepen one's reflections on classroom practices*. The follow ups had proven that roundtable is befitting in the Malawian context; and the movement for teacher education reform is underway in Malawi.

## 2. KCCP Practice Records: Malawi Trainees

This section discusses emerging patterns on the written practice records of two Malawian educators -- both are administrators with one at school level and the other at national level -- while they were in Fukui for the KCCP programs. It is divided into two parts. First is the general theme of their records; the second part is their proposed action plans for teacher education reforms after the program.

### 1) Learning from KCCP Experiences

The two Malawian trainees who attended the training in different fiscal years had written similar points on challenges faced and realities in Malawi, classroom visits, importance of reflection for teacher capacity building, and new perspectives of lesson study lacking in their own context.

#### a. Teacher Motivation Related Challenges in Malawi

The first part of the practice records for Malawian educators was an introduction of their positions and its accompanying responsibilities. The national trainer elaborated that his key duties are focused on designing and organizing in-service training, and ensuring the implementation of a learner-centered approach in secondary schools in support of the call to improve the education system in 2008. The school administrator quoted that the mission statement of the Ministry of Education in Malawi envisions to shift away from teacher-centered teaching for the ministry *'to be a catalyst for social-economic development and industrial growth and to provide quality and relevant education to the Malawian nation.'* Although this vision is to be embraced at different levels of education, and its professionals, big challenges remain present until the reports in 2016 and 2017. Teachers *face issues like students' negative attitudes towards Mathematics and Science* as a hindrance to actively engaging students in the classes. In addition, both at national and school levels, teachers lack teaching and learning materials, big class size, and training and professional support which lead to lack of motivation among teachers. At the school level, *implementation of student-centered activities is hampered by the rigid syllabus and examination results* which measure teacher performance.

Thus, both practice records contain the hope to learn

approaches that can promote active participation of learning in class and improve teaching capacity so that teachers will no longer resort to knowledge transmission to produce results. 'What role does lesson study play in such an endeavor among teachers?' They are both expecting that lesson study will improve classroom practices but are both interested to see actual practices that can be brought back to their respective countries. Though they came to Fukui in different years, both Malawian educators were impressed with lessons that promoted student inquiry, reflection of teachers, and lesson study practices.

#### b. Meaning and Practices of Classroom Inquiry

The educators were impressed with the consistency of active participation of students in Fukui classes they observed. The national trainer wrote, 'all lessons actively engaged learners in the learning process and the teacher provided an opportunity for learners to learn from each other through effective use of group work.' It was further emphasized in the other report which noted that teachers use what learners already know to build on new learning points. They were impressed that students have the liberty to construct their unique approach to addressing problems or challenges posed in class. Students either work individually or in groups with a deep sense of autonomy in their learning. Students had time to explore and test their hypothesis; they were learning by discovery with collaboration. They had also added that student exploration is deepened by reflection and supported by documentation. The national trainer wrote that *the process of reflection is very wonderful as it promotes thinking among learners. At each stage of reflection, the learners are faced with new challenges which needs to be addressed and this leads to new ideas*. This spiral learning allows students to learn and refine their learning. They noticed that students were in control of the class and the learning process. It appears that students are showing a sense of fulfillment as they solve problems or present their findings. They also made mention of student groups and how student collaboration contributed to the sense of achievement of students.

Both educators associated these practices in the classroom to inquiry. Inquiry, as they write, is the spiral of learning in which students are thinking at each stage of learning. Students are exposed to open-ended questions that make them think critically. An example given was *what do you think this means, how do you understand this?* Students are discovering, refining and re-defining concepts and experiences. Such associations are also supported by short lectures characterizing a transformative versus a transmission mode of learning for the re-creation of future education. Students are the leaders of their own learning whether it be individually or in groups. Inquiry in learning necessitates ownership of the whole learning process and trust of teachers to the students. In the program, such student learning was observed in different ways -- from classroom observations to practice records reading. It was also supplemented by theoretical readings on reflective practice that provided agency to the practitioner's student. They all seemed to have enough time to support the design of inquiry in learning. Teachers seem not to worry about fundamental issues governing Malawian teachers.

Yet, initial apprehensions from Malawian educators refer

back to existing problems of curriculum overload and lack of teacher capacity in the country. Do they have the time? Will teachers be able to manage it? Though autonomy in the classroom is very attractive, a fundamental question was posed in the report, ‘How much autonomy should be given to the learner?’ To answer this question, both educators deflected their attention to teacher competence and reflection.

#### c. Reflection among Teachers in Building Competence

The national trainer wrote, ‘... reflective learning allowed a teacher to learn from learners.’ How does this happen? In the practice records, both cited experiences of listening to the reflections of teachers whose classes they observed. One mentioned a reflection with a Science teacher who shared that curriculum management is necessary for a successful lesson, i.e., a lesson that allows student inquiry. Furthermore, questions, such as ‘how can a teacher evaluate students at each particular stage’ and ‘how are struggling learners assisted in the classroom?’ were emphasized in the records. Student documentation and multiple reports reflecting student reflections were elaborated as answers.

The training also included exposure to teacher reflection in actual lesson study. They were impressed by the structure in which the implementing teacher had the initial and final say about the class, while the rest of the members and observers acted as a supporting group. Moreover, in the reflection, it was not only limited to looking at one’s strengths or weaknesses but teacher reflection also included collaborative reflection providing an opportunity for teachers to professionally learn from each other. In another report, the professional and collaborative learning among teachers was mentioned but with young and experienced teachers. He wrote, ‘...striking was the level of openness and mutual trust that exists among the teachers of varying experiences and areas of specialization.’ In Malawi, both mentioned that teachers are struggling to have someone observe their classes; having someone analyze your lesson is even more difficult. Yet, lessons from Fukui have shown that teacher collaboration as a school culture is vital in implementing effective student-centered learning methods. Teachers support each other at different stages of the practice. It was not confined to being able to plan together, always observe each other, and reflect together. It was the meaningful collaboration that has developed teacher capacity in the process. Teachers were sharing ideas just like how students were thinking in the classes. The reflection time among teachers was a safe and nonthreatening environment. There were parallelisms between inquiry and reflection among students and among teacher groups situated in the classroom and in lesson study, respectively. Long span inquiry towards practice and learning is another resonating feature in their observations. Both Malawian educators wrote in their practice records that *the habit of openness and collaboration among teachers can be induced in schools and in Malawi*. Although teacher cultures and practices cannot be changed overnight, humble beginnings can be nurtured and emulated. Teacher communities and professional learning communities can be cultivated through lesson study.

#### d. Needed Features of Lesson Study in Malawi

Initial ideas on lesson study included teachers coming together to plan a lesson, do the lesson, see or observe the

implementation, and improve. This PDSI was the core of lesson study in Malawi. However, as the educators go through the three-week training in Fukui, new keywords were added to their lesson study repertoire. Diversity among teacher groups and communities, dynamic interactions, and long span reflections were prevalent in their practice records.

The national trainer wrote that *he has come to realize that small groups are good to have more time for discussion, focused discussions and non-threatening atmosphere to share anxieties, issues and reflections*. At first, they were unsure of how the interdisciplinary composition of the lesson study group can impact teachers and their professional learning. But over time, with meaningful and strategic reflections in the program, they had realized its benefits. One is that it deepens the understanding of student behavior and learning that can only be achieved as teachers zoom out a bit from purely content-based learning. The variety of teacher experiences also create a more dynamic interaction that goes beyond one’s time-limited experiences. As they hear more perspectives, teachers are shifting from professional teaching to professional learning which is also a point that was constantly given by a veteran teacher from Fukui.

The communities of teachers they had observed in Fukui were made clearer as they read Wenger’s community of practice. The school administrator particularly summarized the different stages of a community of practice to reflect on existing communities in Malawi and the potential direction of the community he opts to build. It has also provided them hints on how lesson study practices can be sustained vis-a-vis teacher motivation and content of lesson study. It is no longer limited to planning for the lesson and reflecting on its improvement; but rather, lesson study and teacher groups *transform a teacher from being an expert of teaching to becoming an expert of learning*. In the process, the teacher should transcend through these questions: What is the rationale of the lesson? What do I expect learners to discover? What are the learners learning now? What do they want? After the actual practice, as they both mentioned Mr. Makita’s presentation on improving teacher competence, the teacher continues to learn by reflecting on what happened in the learning process. Teacher reflection on what students want to do and what the teacher has designed to connect to the next design sparks longitudinal stance in teacher improvement. Teachers should be able to connect lessons and student autonomy like perfectly-fitted puzzles. They added that *the post lesson reflection can be done collaboratively... which is the basis of community of practice at school level*. The national trainer’s take-away is that time and chance for teachers to reflect more on the lesson and to fall in love with learning are vital in establishing an effective lesson study practice in their country. They are still missing a community that communicates the improvement of students and the learning situation. The community, in addition, is a support group instead of a critic group. These characteristics of being able to facilitate a more professional collaboration among teachers in lesson study were pointed out as missing links to the past practices in Malawi. Hence, both educators had decided to write about the kind of communities and its interactions in their proposed action plans.

## 2) Proposed Action Plans and Its Implementation

The proposed action plans of both Malawian educators can be summarized as follows. There is a need to sensitize teachers on what they can achieve through collaboration by bringing the practice of reflection into the actual classroom. The national trainer is in the position to pilot reflective lesson study in schools. The school administrator has the capacity to start a community of practice in his school among other administrators and school teachers. These practices can be expanded by holding roundtables on small and big scales.

### a. Partnership between National Trainer and School Teacher

The national trainer summarized that his *take home are inquiry and reflection in learning, reflective lesson study and creation of community of practice*. As a first step, he planned to work with a teacher from Msalura cluster to introduce reflective learning in her classes. It is his vision to use the teacher's classes to demonstrate reflective learning and practice to other teachers in the school and in the region. From the demonstration of the teacher, a more student-centered and reflective post-lesson discussion will be facilitated. It is the vision of the proposed action to develop interest in reflective learning in Malawi. He further adds with conviction, '...once other teachers attach value to reflective learning of which I know they will, they will join and form a core membership.' From this small learning community, it is envisioned to spread to other schools in the cluster to pave the way to national level expansion.

From the end of 2016 to 2017, the project between the national trainer and chosen teacher, who was also a co-trainee in the Fukui KCCP, was taken into action. The school, together with the national trainer, supported the practices of the Math teacher who voluntarily opened her classroom to other teachers. Teacher lesson study communities were formed. They all underwent training on reflective lesson study with the national trainer and teacher's lead. In this training, other Malawian teachers and cluster leaders were asked to sit down to talk about reflective lesson study, especially the aspects of reflecting on student inquiry and a more positive and encouraging post-lesson reflection. As a result, the cluster had formulated guidelines in which 'I think that the teacher should have'-kind of feedback was changed into 'we made the lesson and we can support students better by'-kind of post reflection protocols. These documents, together with the written practice records, were submitted and shared to the Ministry of Education in Malawi, especially to the Department of Teacher Education. These documents are critical in getting support to establish reflective lesson study, including sensitizing teachers, at the national level.

### b. First Roundtable in Malawi

Another take away of the national trainer is the importance of having roundtable discussions, i.e., Fukui-style roundtable. He wrote, 'I appreciated the roundtable in Fukui because it assisted me to reflect on my action plan mainly on the anticipated problems and how I will handle them. I was encouraged not to give up by others...' Thus, the national trainer arranged a roundtable with Msalura cluster and the University of Fukui which took place in October 2017. It was

a partnership among different institutions in Malawi which hit two birds in one stone, i.e., it solved monetary concerns and carried out reflective lesson study with key core Malawian members.

The roundtable that took place was based on the practice of the teacher that the national trainer had partnered with. The flow of the first roundtable was as follows. A visit and observation at a Msalura school. Teachers with other participants had a short reflection on the class. It was this time that DPDT re-introduced observing and reflecting on classes with student outputs as the core. Such action was particularly requested by the national trainer to back up their local initiatives. Furthermore, the national trainer requested for the University of Fukui to give the Malawian participating teachers an authentic experience of what they were able to experience in Fukui. Thus, the following flow transpired during the first Malawi roundtable.

- i. Visit to Msalura School (Class Observation and Reflection)
- ii. Remarks by Manager of the Region
- iii. Run through of the Schedule for the Day and Three Seeds
- iv. Small Group Discussion (Three Seeds)
- v. Sharing of Experiences and Thoughts
- vi. Free time for Informal Discussions
- vii. KCCP's Sharing about Their Experiences in Fukui
- viii. Practice Records and Its Role in Reflective LS
- ix. Reading of Practice Records
- x. Small Group Discussion
- xi. Presentation/Sharing from Each Group
- xii. DPDT and Closing by University of Fukui

One reflection from a participant summarizes the achievement of the goal of the national trainer in the roundtable. It says, 'The roundtable was conducted in small groups of four members which was good in order to allow every member to contribute. *The group members' experiences were very encouraging to our profession as a teacher as it provided an opportunity to learn from each other's experiences and practice. I was encouraged by other teachers' experiences to learn my profession more.* The reflection was also beneficial to the learners in a way that members will improve their practice in their lesson delivery as they try to incorporate other teacher's ideas. Presentations or plenary talks were very nice as it encouraged reflective questions that would require more research.' The participants, together with the national trainer, felt excited with the new approach towards lesson study and teacher training in Malawi.

During the first roundtable in 2017, four cluster leaders and Nalikule College lecturers attended. One of the cluster leaders is an author whose plan of action from Fukui involves a school-based interdisciplinary reflective lesson study.

### c. School-based Interdisciplinary Reflective Lesson Study

The school administrator wrote in his practice records that *teachers are not very comfortable to be observed as the practice is meant for fault finding in his school and in his country*. A reason for such is that observations are done by 'bosses' making the whole exercise too formal and rigid which hampers possibilities for reflection and collaboration in the process. Thus, his first attempt to carry out his learning

from Fukui, with the rest of the other three Malawian 2017 batch, was to lay a foundation of openness and mutual understanding among heads of departments, heads of academics, and other senior teachers in his school. He strategized to create a core team among the senior members of the school to address the prevailing bureaucratic culture in Malawi schools, i.e., reform in practice is the top-bottom approach when it comes to hierarchical ranking.

From 2018, informal class observations and reflections among head of departments and senior teachers, with some young teachers, were held. The first ones to open their classes were the more experienced teachers to set the mood for openness. They intentionally asked non-senior teachers to observe their classes and give feedback. It is a strategy to break the barriers of hierarchy and encourage opening of classes. As the senior teachers lead the way, trust was also being cultivated among teachers.

In the practice and sharing, they have shifted their lesson study approach from how teachers teach to how students and teachers co-inquire. The core of the new lesson study in the school is that it is a continuous spiral process of growth and development as opposed to the old belief that lesson study is a linear process. As students are put into the center of the learning process and discussions, the teachers are becoming learners as well. Thus, collaboration happens between learners, from teacher to learner, and from learner to teachers.

Senior teachers and administrators from different subject areas made up the core team. The initiative was also designed to bring in interdisciplinary lesson study groups to have students and inquiry learning as the starting point of teacher discussions and reflections. Four main points were achieved and are being strengthened in the current practice: (1) openness and trust among teachers, (2) formation of school-based professional learning communities, (3) reflective learning among teachers and students, and (4) collaboration among schools.

As the project was spearheaded by heads of departments and senior teachers, including cluster leaders, the practices of reflective lesson study (Malawi-style) is currently expanding to different schools in the regions. In the roundtables held in 2018 and 2019 in Malawi, University of Fukui and the national trainers have been partnering with schools' administrators, cluster leaders, and training institutions. In fact, the 2018 roundtable was co-organized with Nalikule College where the national training institution, SMASSE, has an office; while the 2019 school visit and roundtable were organized mainly together with a cluster and a school leader.

### 3. Expanded Practice in Malawi

Malawi has been exposed to reflective lesson study through its KCCP members for a relatively short period of five or so years. Initially, lesson study was seen as a teaching technique where teachers can plan a lesson together, observe the lesson being taught, critique it and possibly redo it later. Throughout this period, the focus was on how the teacher teaches contrary to the current emerging view that lesson study focuses on how the learner learns. In fact, lesson study is about having insights on how learners learn as they co-inquire and share knowledge with peers and with teachers. It calls for the teacher's deep understanding of the learning

process with the learner at the centre of each and every stage of the learning process. The teacher's role is to guide this learning process. It is also noted that the teacher is a learner as well because he/she has to reflect in and on each learning point in the practice. Currently, Malawi is trying to establish a lesson study model that would foster co-inquiry, co-reflection and co-creation of knowledge in the whole learning and teaching process with different institutions as partners.

#### 1) Connecting National Training Institutions, Teacher Preparation Institutions, and Schools: Roundtables as Binding Events

In 2018, the roundtable was embedded in the 10th In-Service Training of Malawi for its High School Science and Mathematics Teachers (SMASSE) held from October 22-26 2018 at Nalikule College. The first two days of the conference were plenary talks on continuing professional development, lesson study, community of practice and roundtable. The remaining days were spent for in-depth content workshops on biotechnology, circular motion, circular geometry and rates of reactions. Approximately 300 teachers from all over Malawi attended the training which is led by the Department of Teacher Education (DTED) under the Ministry of Education (MOE) of Malawi, with strong logistical support and administration from KCCP participants and their colleagues. The roundtable was a new insertion in the INSET for Malawi (and is being carried over till today). The flow of the roundtable in 2018 was as follows: roundtable concept by DPDT, sharing of roundtable experiences by KCCP trainees who are cluster leaders, round table discussions, sharing from participants, and closing remarks from DPDT. First, an introduction of a roundtable as to how it is designed to support professional learning communities, build reflective institutions, and foster teachers in the age of knowledge society was given. It included key features of roundtable and how it is different from the more common conference style -- emphasizing the importance of sharing something that can be useful for the listeners in their practices. To reframe roundtable in Malawi setting, the past trainees from different regions shared their thoughts on

- i. How was your Fukui roundtable experience? What did you do?
- ii. What were the things you learned from the Fukui roundtable? What is its potential for community of practice?
- iii. How do you think school in Malawi can use the concept of roundtable as a means of building a community and sharing of practice in Malawi?
- iv. Why should Malawi try to have Roundtable in INSET? Or in schools?

The main point shared was that roundtable discussions give teachers a voice to share their practices. At the same time, it is cost-friendly as no extra gadgets other than paper are needed to carry out a roundtable. Teachers also benefit from listening to other teachers. If carried out consistently in Malawi, teachers will be able learn together and improve the quality of teaching and learning in the country. It was also during this roundtable that the collaboration between the first two KCCP Malawian batches was strengthened while connecting trainees of the same batch.

The practice continued the following year when the 2019 roundtable was held at Loyola Jesuit Secondary School, Kasungu, Malawi. This was mainly organized by the school and Kasungu cluster with the support of the national training institution and the central region office. Below is the detailed two-day schedule arranged by the cluster.

Day 1	TIME	ACTIVITY	OFFICER
OPENING CEREMONY	8:30	Participants and all invited guests get their seats,	Director of ceremony
	8:40	Opening prayer	School Chaplain
	8:45	Welcome remarks and Ground rules & roles	Director of ceremony
	8:50	Introduction & Theme of Workshop	Centre Coordinator
	9:10	Remarks by Head teacher LJSS	LJSS
	9:20	Speech by Guest of honor (Central East Education Division Manager)	Billy Banda
SESSION 1	9:40	Presentation on Lesson Study	Fukui
SESSION 2	10:40	Presentation on Lesson Study Continue	Fukui
	11:50	Preparing for Examen	Chaplaincy office
	12:00	Examen	Participants
	12:15	Lunch	Participants
SESSION 3	13:20	Environmental Presentation	JCED
	14:40	Community of Practice	JICA 2017 Ex participants
	16:00	Community of Practice LOJSSERC Presentation	LOJSSERC Students
Day 2	TIME	ACTIVITY	OFFICER
SESSION 1	7:30	Depart for Mtunthama CDSS for Class Observation	Fukui Team & Others
	8:10	Lesson Starts	Mtunthama Teachers
	8:50	Lesson Critiquing	Teachers, Fukui Team & Others
	9:30	Leaving Mtunthama for Chikho Hotel via Kamuzu Academy	Fukui Team & Others
SESSION 2	11:00	Round Table Orientation	Fukui
	11:20	Round Table	2017 JICA Ex Participants
SESSION 3	13:00	Round Table Continues	Participants
	15:30	End of Round Table (and leave for LJSS)	Participants
SESSION 4	16:00	Meeting the Students' Committee on LOJSSERC	Fukui team

Remarkable in the arranged schedule are: (a) participation of students in the roundtable, (b) distribution of responsibilities among stakeholders with teachers and clusters in the core, and (c) observation and reflection on practices in different schools. The students presented their inquiry and community-based projects which was the core of the study of the lesson study group. Teachers base their discussions on the results of student discussions and activities. In the same event, it is remarkable that school administrators are on board in supporting an environment in which teachers across schools and subjects can support each

other. Most importantly, the reflective lesson study is bringing different schools with different resources and students together. Teacher reflections in this third roundtable with the University of Fukui have tackled actual classroom practices with teachers sharing their perceived best practices and its rationale.

The first three roundtables held in Malawi with the University of Fukui all took place in different regions but with the participation of specific core members, e.g., the ministry of education, in-service training institutions, university, cluster heads, and past trainees. There were still different small-scale roundtable discussions, i.e., school-based roundtables that transpired in the country from 2017; it is evident that they are continuously evolving as more stakeholders get involved. The network of educators in the country is multiplying creating a constellation of community of practice whose shared vision is to the betterment of Malawi's future.

## 2) Continuing Collaboration with University of Fukui

Every year after 2016, the University of Fukui invites at least one Malawian to its bi-annual roundtable. The invitations have been extended to past JICA-Fukui KCCP trainees, Ministry of Education officials, and Nalikule College administrators which were strategically chosen through consultations between past trainees and the University of Fukui. During the roundtable in Fukui, Malawian educators were able to share the education situation in Malawi and their teacher capacity building efforts. Moreover, they observed classes and lesson study in the attached compulsory education school of the university. They were also asked to write newsletter articles as a form of reflection after participation. A consistent remark is the vision to be able to bring quality classes, as experienced in Fukui, to Malawi. Hence, the need to uplift and reform teacher training in the country was even more emphasized.

In February of 2019, the University of Fukui, Japan and Nalikule College, Malawi signed a memorandum of agreement to work together in uplifting the quality of teachers in Malawi through lesson study. Nalikule College is in charge of both pre-service and in-service teacher training in the country with JICA, Ministry of Education and SMASSE as its partners. It also has an attached demonstration school in which the theories learned at teacher education college can be put into practice. Thus, this partnership is a crucial step not just to strengthen ties between the two universities but to support the longitudinal and sustained expansion of lesson study and teacher capacity building activities. Nalikule College can play an important role in consistently bringing together classroom practices and Malawian educators through its teacher training programs. It can be a venue for local and national level roundtables. It can design lesson study at the university level to equip the future Malawian teachers on its merits, practices and potentials.

## 4. Characteristics of Teacher Reforms in Malawi: Post KCCP Training

The team of Malawi is aiming at strengthening reflective lesson study and establishing communities of practice in schools. The main cornerstones of their initiatives are:

ensuring strong collaboration among schools and institutions, sense of trust and openness among teachers in schools, formation of professional communities in schools and clusters, fostering reflecting learning as a catalyst for quality education, and long span teacher reflection with student inquiry as the core. These cornerstones are consistent with the pre- and post-KCCP reports written by the Malawian colleagues. One of the key contributions of the JICA-Fukui KCCP program is that it provided training to a core group to understand the country's context which led to a more localized approach to teacher training. Another one is providing these educators with models of cultivating communities of practice and expanding it through reflective lesson study. The sharing of practice records, visits and collaboration after the JICA-Fukui KCCP program supported the trainees' on-site initiatives and efforts.

Different levels of communities of practices are emerging in Malawi. The national training institution, SMASSE, has been successful in sensitizing and bringing in different institutions to work towards improving teacher capacity through reflective lesson study. The initiatives at school levels, from teachers and administrators, are forming communities with practice and students as the primary basis of reform. There is a balance between top-down and bottom-up initiatives in the country. There is now a stronger need to document these efforts to interweave them into a stronger reform for capacity building.

### III. Educational Reform in Ghana

#### 1. History of Japan's educational cooperation in Ghana

In 1992, the Republic of Ghana decided to make primary education free, significantly increasing the primary education enrollment rate. On the other hand, many issues regarding the improvement of the quality of education remained, and in particular, the low quality of public-school teachers was a severe problem. One of the reasons for this is the lack of structured INSET to support teachers' abilities (JICA, 2012) systematically. Against this backdrop, the Ghanaian government has been working on building and implementing INSET since 2000 with the cooperation of JICA. They have been developing INSET models for mathematics and science education, preparing INSET implementation guidelines and teaching method improvement manuals, and establishing and strengthening operational management systems (JICA, 2012).

In 2017 and 2018, one person from Ghana participated in KCCP training at the University of Fukui. In 2018, the National Teaching Council's National Coordinator took part in the program, as did the National President of the Ghana Association of Science Teachers in 2019, which allowed us to work with two people who play a central role in training science and mathematics teachers in Ghana. In addition, at the World Association of Lesson Studies in 2019, a cooperative presentation was delivered on efforts after returning to Ghana. Thus, there has been a movement toward reforming teacher education in Ghana while utilizing the existing in-service teacher training system.

#### 2. KCCP Practice Records: Ghana Trainees

This section discusses emerging patterns on the written practice records of the two Ghanaian educators while they were in Fukui for the KCCP programs. It is divided into two parts. First is the general theme of their records; the second part is their proposed action plans for teacher education reforms after the program.

##### 1) Learning from KCCP Experiences

The two Ghanaian trainees who attended the training in different fiscal years had written similar points on challenges faced and realities in Ghana, classroom visits, analysis of read materials, and lesson study as a means for teacher development.

###### a. Challenges in Ghana and Need for Transformation

The first part of both practice records was a professional self-introduction and their journey's as educators. They had chronologically narrated their experiences from being classroom teachers to being teacher trainers. They also detailed their responsibilities in carrying out teacher training and the extent of their interactions with teachers in the field. Their perceived contributions to the field such as paper presentations, publications, etc. were also reflected on the practice record to showcase their commitment and qualifications. It also established a foundation for the feasibility of their action plans.

In both practice records, they both asked, 'How can inquiry in the classroom and spiral learning framework be effectively structured in Ghana which is examination-based and bounded by a time-constrained curriculum?' The congested curriculum and high-stake national tests limit potential for innovation in the classroom. Furthermore, they narrated the following challenges: large teacher-student class ratio, inadequate facilities, insufficient learning materials, political will, and teachers' perceived roles in the classroom. They both identified that there is a need for Ghana teachers to embrace student-centered approaches, especially inquiry in the classroom, and to be more reflective in their practices. Furthermore, they had both written realizations on the lack of student inquiry and teacher reflections in Ghana upon visiting classes in Fukui. The firsthand experiences had deepened their perspectives of existing challenges in Ghana's education system.

###### b. Student Learning in Classroom Inquiry

The classes and schools observed by both educators were different but their reflections on student learning were parallel. The main themes included the need for student and ownership, collaboration and responsibility. It was emphasized that there is a cycle of exploration, student talk, reflection, etc. with less to little interfering from teachers.

They added that teachers should embrace the notion of student agency back in their home country. For example, one wrote, '...from the classes, I have realized that teaching and learning is the responsibility of both teachers and students.' Through this shared responsibility, the classroom will be more inquiry-based which will promote student learning. They also agreed on 'decreased teacher talk time will rise for more student talk time and construction of knowledge.' In response to the challenges identified and realized, both

educators also detailed Science, Math and Integrated Learning classes that they observed. They hope to share these images of the classrooms and classes in Fukui with their colleagues back home. In the latter part of the practice records, one wrote that an ideal class has the following steps: engage students with a task, followed by student actions and interactions, then presentation and reflection. The grasp of student learning was instrumental for the trainees to reconstruct their perspective of a (future) Ghana teacher and the features of lesson study that should be introduced.

### c. Lesson Study Features

Both trainees wrote a comparison of existing features of lesson study in Ghana and features they experienced in Fukui. One elaborated on the following points, 'lesson study in Ghana is for practical lessons alone while in Japan is for any lessons.' 'Lesson study themes in Ghana are isolated rather than linked which is the case in Japan.' And, 'Ghana teachers purposely choose a topic for lesson study based on schedule and curriculum.' 'School lesson study also receives support from the board of education.' These were further elaborated on the practice records of the other trainee writing that *lesson study in Fukui emphasizes on collaborative planning, report writing, trust and openness among teachers, and comments are pointed out on the subject matter rather than teacher actions*. The collaboration, inquiry, communication and reflection among teachers in lesson study also develops the same competencies among students of participating teachers. As trained lesson study experts in Ghana, it was critical for them to see lesson study implementation at different levels in Fukui. Every lesson study related activity in the three-week program had a narration in their practice records. They observed overall programs, patterns of interactions among stakeholders, different kinds of lesson study groups, and reflections of teachers. One was also impressed that teachers were sharing their own limitations as teachers and openly asked for (constructive) criticisms of their classes. Both also emphasized the importance of writing relevant practice records as a result of lesson study experiences in Fukui which they want to bring back to Ghana as an innovation. The trainees also wrote that they find lesson study in Fukui as an effective community of practice.

### d. Community of Practice Readings

Critical to the three-week KCCP in Fukui was the readings of practice records, reflection in and on action of Schön (1983), and the seven principles of cultivating community of practice by Wenger, McDermott and Snyder (2002). One batch only read the principles proposed by Wenger while the other one was able to read chapters of early development and maturation of communities of practice. Both educators detailed their interpretations of the principles and extended the concepts to the context of Ghana. One wrote that *readings on community of practice can be used in all levels of community*. Another emphasized that *the government should be the core of the group (community) to ignite the rhythm of communities of practice*. Based on their reflections on the challenges faced in Ghana, there was a strong discussion on interest, comfort and involvement of participants in cultivating and sustaining a community of practice. One's key words were players (community members), rhythm and goals. The other one emphasized concepts of members, aim and focus on value. For both educators, it is very important

that the goals are aimed at creating values and can be achieved through the rhythm of activities that will encourage utmost participation from the members. The goals should include a transformation of teaching practices to incorporate more inquiry into the classroom for the Ghana students. Both educators were engaged by the readings as they felt that it gave them a structure on how to put their learnings into plans, and eventually into practice.

The two questions asked in relation to communities of practice were: (a) *is there still a need for a community of practice given today's technology*, and (b) *how to improve or transform in-service teacher training structure in Ghana to make room for communities of practice?*

## 2) Proposed Action Plans

The learning journeys of both Ghana trainees were rollercoasters of feeling confidence in their past experiences, discovering new concepts, discussions and questioning, hearing other partners' learning, relating and contrasting Japan and Ghana, and reflections at different levels. Based on their practice records, the first week was more focused on rediscovering learning based on student inquiry and interaction with the content and the teacher. They were contrasting Fukui and Ghana to find concrete practices that they can bring back home. Student agency and collaboration were among the most repeated concepts in the writing. In the second week, as they experienced lesson study practices at different levels, they were realizing challenges of lesson study and teacher practices in Ghana -- more particularly the collaborative actions and reflections taking place during in-service teacher training. As they read Schön and Wenger's concepts, they started concretizing plans of actions when they go back. On the last week, as they listened to a bigger scale teacher education reform, they were able to weave together relevant ideas on lesson study, teacher collaboration to support student inquiry, and reflections both for students and educators.

### a. Demonstration School and Pilot School Approach

One Ghana trainee wrote, 'having gone through three weeks of lesson study, reflection and orientation, the following strategies (i.e. pilot school approach) are designed to see how well the best practices observed can be replicated in Ghana.' This statement pertains to an earlier proposal to introduce reflective lesson study in demonstration schools and some pilot schools which will be extended to the rest of the schools in the country. The demonstration school and pilot school approach involves choosing one school from each zone and the demonstration schools of Ghana's teacher university colleges to undergo crash course kind of programs to learn about inquiry-based learning. During in-service teacher training, representatives from these schools will do a demonstration class for other teachers in other schools. Through this approach, non-pilot schools will gain the inquiry-based learning approach so it will expand in the whole country.

More specifically, the short-term included a presentation of a comprehensive report and strategic implementation plan, discussion of the plan, two-week workshop on co-inquiry approach, implementation in chosen schools, and reflection of practice in chosen schools in one region. This was initially drawn to last in six months. The co-inquiry incorporates the

concepts of reflection, community of practice, and reflective lesson study. For the mid-term plan, the activities included discussion of strategic plans with National Teacher College, Ghana Education Service and Ministry of Education, then engagement of more stakeholders e.g. teacher unions, etc., and pilot-testing in demonstration schools. The engagement of stakeholders was designed for nine months, and the actual implementation in demonstration schools are for two and a half years. The long-term plan is to be able to expand the short and mid-term achievements nationwide until six years after the training through partnerships with teacher unions during annual subject-based workshops.

b. Reflective Lesson Study into INSET

Another one wrote, *‘I am reflecting on how to synchronise the reflective lesson study through community of practice into the Ghana National In-service Teacher Education and Training (INSET) structure...’* As he wrote his plan of action, he added two things in his introduction. First are his foreseen challenges of implementation as a result of the transitioning happening in Ghana’s education system. The second one is his intention to study the unforeseen circumstances interfering with implementation as part of his doctoral work on school teachers. It was timely that his personal graduate school research is starting a month after training in Fukui. Incidentally, it is also the time in which there will be a roll-out of the new curriculum and his proposed plan of integrating reflective lesson study into Ghana’s INSET structure.

His plan consists of five steps. First, organize his working team with national coordinators and staff of the national teaching council. Then, training of trainers in twenty UNICEF-focused districts will be held. This training will then be extended to all teachers in the participating schools. Their office will be monitoring the training and implementation. From there, the practice of reflective lesson study will extend nationwide. In his closing, he wrote that (a) he plans to begin from his own center in the implementation, and (b) extend his plan to private schools and pre-service teachers.

3. Reports on Current Efforts in Ghana

The government of Ghana in 2017 saw the need to inject some major reviews in the education system of the country. Among the reviews was the need to reform the pre-tertiary curriculum from an objective-based to a standard-based curriculum.

1) Education Reforms in Ghana From 2017

A review of the curriculum was held to respond to a national priority of shifting the structure and content of the education system from merely passing examinations to building character, nurturing values, and raising literate, confident, and engaged citizens who can think critically. More concretely, the rationale that drove the drastic moves for change were poor national learning outcomes, lack of comprehensive reviews of current curriculum, and limitations of the assessment system. The third point refers to the inability of the assessment system to provide sufficient data on which improvements in teaching and learning can be fashioned and an overly emphasis on preparing learners to pass exams, thus teaching to test. The review was also

designed to address the inherent challenges in the existing curriculum and ensure that the content of the national curriculum can be internationally benchmarked.

a. Core Competencies and New Content

At the core of the school curriculum is the belief in nurturing a new generation of honest, creative and responsible Ghanaian children. As such, every part of the curriculum, including the related pedagogy should be consistent with the following values: respect, diversity, equity, commitment to achieving excellence, teamwork and collaboration, and truth and integrity. In addition, the revised curriculum identified six core competencies namely: critical thinking and problem solving, communication and collaboration, creativity and innovation, cultural identity and global citizenship, digital literacy, and leadership and personal development. These are designed to develop 21st century skills and values that will cultivate foundational literacies and functional competencies to develop one’s ethos for the workplace.

The table below summarizes the new course contents introduced to achieve the goals of the new curriculum.

Kindergarten	Grades 1 - 3	Grades 4 - 6	Grades 7-9
Numeracy	Numeracy	Numeracy	Mathematics
Literacy	Literacy (English & Ghanaian Language)	Literacy (English & Ghanaian Language)	Literacy and Foreign Languages
	Science	Science	Science
Creative Arts	Creative Arts	Creative Arts	Creative Design and Technology (Visual Arts, Home Economics, Pre-tech)
	History	History	History
Our World and Our People	Religious and Moral Education	Religious and Moral Education	
	Our World and Our People (Citizenship Education, Agriculture, Computing, Geography)	Our World and Our People (Citizenship Education, Agriculture, Computing, Geography)	Our World and Our People (Citizenship Education, Agriculture, Computing, Geography)
	Physical Education	Physical Education	Physical Education
		Computing	Computing (with emphasis on Apps)

Fundamentally, the review of the curriculum was to respond to a national priority of shifting the structure and content of the education system from merely passing examinations to building character, nurturing values, and raising literate, confident, and engaged citizens who can think critically.

c. Reforms at Colleges of Education

Colleges of education in Ghana are institutions that train teachers to handle pupils and students at the pre-tertiary level. Teacher education program is completed in three (3) years. Currently, each college of education in Ghana is affiliated to

a public university that serves as its mentor institution to run a four-year degree program in education. Reforms in teacher education are aligned with the reforms in basic education as the graduates of the teacher education institutions are the implementers of the new curriculum. Thus, it is fitting to train the human resource to align to the new trends of the standard-based curriculum; more so is the reform in teacher education courses. The Ghana team members of this research also participated in these reforms connecting their experiences in Fukui and the vision of the new curriculum.

## 2) Initiatives and Projects on Teacher Professional Development after KCCP

One challenge in Ghana that was identified during KCCP was that most basic education teachers do not engage in reflective practice as learned at the University of Fukui. Coming back home, both trainees envisioned to make reflective practice a core element in the teaching and learning. As realized during KCCP, reflective practice among teachers supports teacher learning that also contributes to student high learning outcomes.

### a. Collaboration with Stakeholders and Design of Learning

The two Ghanaian educators who visited Fukui worked together in strategizing how to incorporate reflective teaching and learning in Ghana. The first steps were to engage different stakeholders by presenting their learning from Fukui and opening feedback for their strategic plans for Ghana. Leadership of the National Teaching Council (NTC), Ghana Education Service (GES), Police Education Unit (PEU) and Ghana Association of Science Teachers (GAST) were the first stakeholders to be contacted. Salient points of discussions included the need to build the capacity of teachers towards reflective practice which were embraced by the stakeholders. The support was also overwhelming allowing the Ghana trainees to implement their plans.

The agreed action plan is divided into short-term, medium-term and long-term plans. The short-term plan included sensitizing and engaging stakeholders to be partners in the reform towards reflective practice of teachers in Ghana. A two-week workshop was planned (and implemented) for school heads and teachers of partner basic education schools. These reflective practice workshops included a co-inquiry approach in teaching, reflective teaching, teacher committee (i.e., community of practice) and student committee system. After which, some teachers teach while the others observe the co-inquiry approach to teaching. Reflective sessions followed the classes. The medium-term plan extends the short-term to working with demonstration schools and pilot schools. The same training and focus is designed for prospective institution and teacher partners. The long-term plan, which is underway, includes working together with subject teacher associations in integrating co-inquiry and reflective practice in their annual workshops. These approaches in teacher education reform in Ghana aim at having each teacher and school practice co-inquiry and reflective teaching nationwide.

The intention in the design of training was to build a foundation for lesson study. It was supplemented by incorporating teacher observation and interactions during the annual general meetings of subject teacher associations. The

interactions also included teachers and students undergoing reflective practice. Teachers engaged in the different training sessions were involved in small group reflective practice sharing, lesson planning, and class observations. It is necessary for teachers to experience implementing the new approach so that they can guide other teachers as well. For the post-lesson reflections, discussions focused on zeal, motivation and collaboration among teachers. Design was also extended to gender empowerment, among others.

### b. Achievement and Way Forward

The following presents the data of participants of the training held until 2019. Through the Police Basic schools in Accra, eight (8) kindergarten and forty-two (42) primary school teachers have participated in the training. From the former Brong Ahafo region, 120 science teachers have also been trained; they are teachers of basic education school and senior high school teachers teaching Integrated Science, Physics, Chemistry, Biology and Technology. Also, over 250 Science teachers from all over Ghana have been trained during the 2019 GAST Annual General Meeting/Conference/Workshop (AGM).

Furthermore, support from stakeholders are being embedded in policies concerning teacher training. For example, the Ghana Education Service amended the schools' time table in Academic Year 2019/2020 allotting two (2) hours every Wednesday to be used by teachers in every basic school in Ghana for reflective practice. This act also serves as an avenue for continuous professional development. Also, the government of Ghana through the Ministry of Education has set aside an amount of GH¢ 1,200.00 (US\$ 208.56 or ¥22,374.56) as an annual grant for every to embark on continuous professional development.

The overwhelming support and assistance is keeping the reform going. However, one challenge is the immediate data to show positive effects of the KCCP-yielded efforts on learning outcomes. As the country battles with the pandemic, it is hoped that the engagement and good start will embark on.

## 4. Characteristics of Teacher Reforms in Ghana: Post KCCP Training

The KCCP experiences were instrumental in interweaving reflective practice, co-inquiry and continuous professional development into Ghana's teacher reform; more so, it is becoming an integral part of its education system. The efforts of the KCCP trainees were also intertwined with each other; there was mutual respect, collaboration and shared goals. The efforts have embodied their training on reflective practice, co-inquiry and practice as a community. They have engaged important sectors of teacher education through presenting their reports and holding open discussions for strategic plans. Both of them acted as the core of the community of practice while enabling the rest of the stakeholders to play an active role in the teacher reforms.

The achievements of both KCCP trainee-initiated projects and revised strategic plans are parallel to those conjured in Fukui. Community of practice elements of active participation among members, exciting and engaging activities, and focus on value through inquiry and reflections are all present. Training included values of teacher

empowerment, reflection and collaboration. The lesson study-oriented training is also geared towards improvement in learning outcomes as content and inquiry are balanced during the workshops. The sharing from the actual practices in Fukui, as documented in their practice records, were vital in giving Ghana teachers an exemplar of inquiry in the classroom. Thus, supporting Ghana teachers in their quest towards co-inquiry and inquiry in the classroom.

#### IV. Discussion

##### 1) Elements from KCCP Training and Its Impact

Based on the practice records/reports in Fukui and in their home countries, understanding of education contexts, concepts of cultivating communities of practice, inquiry and reflections have impacted KCCP trainees' efforts the most. They are the overarching concepts that supported learning in Fukui and efforts implemented in the home country.

The three seeds and home group discussions supported the trainees to better understand their contexts and vision for their countries. The home group discussion provided reassurance that they are part of a community willing to listen and help. The cross-group discussions had provided different perspectives and alternative interpretations to the participants' ideas and takeaways.

The classroom visits and dialogues with Japanese teachers have given the participants hopes for their countries' education system. It gave them a practical and classroom-based actual experience of how inquiry can take form in different subjects and grade levels. The variety of subjects whilst having consistent take on inquiry had provided a clear image on the direction of learning reform envisioned by the participants. The dialogues with Japanese educators, as well as the lectures, had furnished them with (a) an image of teacher reflection, (b) the potentials of a reflective practitioner, (c) a structure for teacher capacity building, and (d) relatable examples of teacher community and collaboration.

The readings on reflective practitioner (Schön 1983, 1987) and cultivating of community of practice (Wenger, McDermott & Snyder, 2002) presented them with a structure to organize their thoughts from their visions to the classroom observations. It has also helped them re-defined concepts of teacher reflection and collaboration, and its impact into practice. From the readings, the participants were able to conceptualize their plan of action. The theoretical readings complemented the classes and lessons they observed.

The school experiences, mini-lectures, readings and sharings reinstated an image of lesson study, inquiry and reflection. They were defining these three from the perspectives of students, teachers and school. Consequently, their practice records have shown that these concepts were also connected; thus, a system thinking (Senge, 1990) approach has emerged.

In the efforts exerted by both countries to improve teacher training, they have added elements of inquiry, reflection and stronger collaboration in lesson study. Even in the top-down training in both countries, teachers are shown concrete

classroom examples, as opposed to theoretical situations, depicting inquiry in the content and by students through teachers. They also include reflective experiences by incorporating sharing among participants which is a shift away from lecture and mere transmission. Such practice emphasizes the importance and real meaning of collaboration. School-based efforts have introduced cross-discipline lesson study groups, veteran and young teachers' teams, and a long-span approach to curriculum design. Slowly, educators in both countries are shifting perspectives of lesson study from merely looking at pedagogical approaches to a framework to shape reflective practice among teachers.

##### 2) Efforts in Home Country and Further Co-Creation

The common approach was a combination of top-down cascading and bottom-up teacher-empowered expansion. The KCCP trainees in both countries partnered straight to leaders, school heads and other stakeholders to initiate the training. The teachers were involved not only through lecture but by actual practice of reflection and inquiry. Both leaders and teachers were empowered in this cascading approach as hands-on learning and reflection took place during training and workshops. They have utilized variations of roundtables to prompt practice-based active engagement among teachers. Reaching the down part of the top-down approach was then shifted to teacher-empowered expansion. The experiences of the teachers from the inquiry and reflection-centered training become the basis for a whole school teacher practice reform and beyond, e.g., cluster and regional lesson studies.

Malawi and University of Fukui, and Ghana and University of Fukui are continuously coordinating, co-inquiring and co-reflecting into creating a contextualized and sustainable teacher education reforms in the respective countries. The recurring discussions and sharing in the form of meetings, visits, roundtables and reports contribute to the cross-country and cross-cultural co-creation of new knowledge to support reflective lesson study initiatives. Furthermore, the co-creation egalitarian stance taken by all parties put everyone in the same pedestal empowering each team player to contribute and each community to mature.

#### V. Final Thoughts and Recommendations

(1) For next research, it will be richer to chronologically follow the writing of the trainees, e.g. from day 1 to the last day for a deeper understanding of their learning trajectory and changes of perspectives throughout the course of the training.

(2) The themes written in the practice records reflect which part of the program trainees' value. It can be an alternative method for evaluating the KCCP programs and other teacher education short training programs. The follow-up and its records can be juxtaposed with an in-training program to (a) re-evaluate the long-term effectiveness of the training, and (b) evaluate teacher reforms or program efforts being initiated back in the home institution or country.

(3) The integration of the bottom-up community of practice approach to cascading existing teacher professional approach in sub-Saharan Africa are potential models in reforming

teacher training and education in the countries. The two cases have shown efforts to strengthen endogenous development in teacher education reform as they cultivate communities among established stakeholders and among teachers. Such efforts put the origin of the reform within their countries; thus, being interdependent with and independent from outside support, e.g., Fukui, JICA, etc., leading to empowerment and ownership.

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