"INFLUENCE OF COLLABORATIVE DISCUSSION FORUM PROJECT ON THE IMPROVEMENT OF TEACHING METHODOLOGIES AMONG TEACHERS IN PUBLIC PRIMARY SCHOOLS IN MOMBASA COUNTY, KENYA"

BY

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A research project report submitted in partial fulfillment of the requirement of the award of the degree of Master of Arts in project planning and management of the University of Nairobi

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DECLARATION

I hereby declare that this research project is my original work and that no part of it has been presented for any other dissertation in this university or elsewhere for the purpose of examination or otherwise.

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This research project report has been submitted for examination with my approval as the University Supervisor.

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DEDICATION

I dedicate this research project report to my parents Fidelis and Norah Monari, my siblings Erick, Naomi, and Robinson for their confidence in me and the unflinching support throughout my academic life. I also wish to dedicate the report to my friends Too, Odari, Mercy, Beth, Lubanga and my fiancée Kawira who have been more than friends to me. The success of this project and my excellence in education has been motivated by the strong conviction that I can explore even new fields of academics. You have encouraged me and were there for me at all times. God bless you all!

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ACRONYMS AND ABBREVIATIONS

CDF	Collaborative Discussion Forum
CEMASTEA	Centre for Mathematics, Science and Technology Education in Africa
EGR	Early Grade Reading
IBL	Inquiry Based Learning
ICT	Information Communication Technology
INSET	In-Service Training
PBL	Problem Based Learning
RTL	Reading to Learn
SbTD	School-Based Teacher Development
SESEA	Strengthening Education Systems in East Africa
SPSS	Statistical Package for Social Scientist Software
UNESCO	United Nations Educational, Scientific and Cultural Organizations

ABSTRACT

Educational projects are becoming common in helping organisations and governments to improve on the education standards and also respond to the emerging issues in education. Most of these projects seem to be focusing on teachers' capacity building with an understanding of the central role that teachers play as stakeholders in the education sector. Strengthening Education Systems in East Africa (SESEA) is a joint initiative between Aga Khan Foundation and Global Affair Canada aiming to improve the educational standards in East African region. The Aga Khan Academy Mombasa implemented this programme through several smaller projects including Collaborative Discussion Forum (CDF), which is the focus for this study. The CDF, unlike other projects was driven by the academy's faculty through short courses and was a mentorship programme. The purpose of this study was to examine the influence of Collaborative Discussion Forum Project on the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya. The study had four objectives guided by the four independed variables: learner centred approaches, ICT integration in teaching and learning, teacher lesson planning and teacher-learner communication and how they influence the improvement of teaching methodologies. The literature review demonstrates that these aspects actually contribute significantly in improving teaching methodologies. There however seems to be no much research focusing on short courses and even teachers mentoring others and how it could impact on their methods of teaching. The research aimed to fill this knowledge gap through this study. The study was conducted through a descriptive survey research design by sampling 10% of the 292 teachers who participated in the CDF training project. Questionnaires were used to collect data from the sample. To ascertain the reliability of the instrument, test retest technique was used with two randomly selected pilot schools from those that were not included in the actual sample size. The study found out that learner centred approaches influence the improvement of the teaching methodology among the CDF participants with a composite mean of 3.73 and a standard deviation of 0.78. The Karl Pearson's correlation coefficient indicated a strong positive correlation between the two. The study also found out that ICT integration in teaching and learning and teacher lesson planning do influence the improvement of teaching methodologies. The chi-square calculated value of 20.87 against 12.59 at 6 degrees of freedom and 95% level of confidence showed that teacher-learner communication influence the improvement of the teaching methods. The study found out that effective lesson plans are those that are used flexibly and devote most of the time to learner's hands on activities. The Pearson's correlation coefficient also shows a strong positive correlation between the teacher-learner communication and teaching methods. The study therefore concluded that the improvement of teaching methodologies is influenced by learner centre approaches, the integration of ICT, teacher-lesson planning and teacher-learner communication.

Key words: *Teaching methodologies, Learner centred approaches, ICT in teaching and learning, Teacher lesson planning, Teacher-learner communication*

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Educational projects seem to be globally embraced as a way of improving the teaching and learning process. Due to the changing trends in the education sector, there are many reforms being recommended and implemented by schools in order to continue providing relevant and competitive educational standards and to meet various needs such us gender inclusion in education and education for refugees. Cavanaugh, McCarthy, and East (2014) state that 'around the world, the education providers are required to modernize, reform, and rethink the nature of primary and secondary schooling so the education experience is more relevant for learners and better aligned to community needs.' The United Nations Educational, Scientific and Cultural Organization (UNESCO) for instance initiates many projects to coordinate the international education cooperation and increase on the quality of education. Some of the projects recently started include Supporting the South Sudan Cattle herders to go to school, stabilizing learning through mobile devices to orphanage on the Thai-Myanmar border, refugee and migrant children, UNESCO-Guatemalan governmental project to give indigenous young people a second chance at education among other many projects (UNESCO's Role in Education, 2017). A good number of these projects target the teacher professional development because teachers play a central role in the education sector.

The Center for Mathematics, Science and Technology Education in Africa (CEMASTEA) aims at building teachers' capacities to enable them cope with pedagogical related challenges encountered during curriculum delivery. CEMASTEA coordinates SMASSE through In-Service Training (INSET) programmes (Wamalwa, 2017). The SMASSE project was actually initiated to address the teachers' and learner's attitude and teaching methodology among other factors deemed to affect the performance of Mathematics and Sciences (SMASSE, 2008).

In Africa for instance, the need to integrate ICT in teaching and learning is still taking root in many countries and it is yet to be fully realized.

Some countries like Rwanda are known to have recently invested heavily in classroom technology projects. According to Farrell (2007), ICT is central to Rwanda's Vision for 2020, and ICT in education is one of the core pillars of the country's National Information and Communications Infrastructure Policy and Plan, adopted in 2000. A lot of progress has been made and Rwanda continues to receive global recognitions and support from its development partners. The country has recorded quite a remarkable development of a national ICT infrastructure in the progress within the education system on distributing computers and enhancing connectivity besides teacher training.

With the same vision of providing students with a competitive education and preparing the future workforce, the government of Kenya started the laptop project in 2013 as one of the manifesto of the ruling party. This project aims to digitize the learning content and help teachers to integrate ICT in teaching and learning. A number of schools have already been provided with the tablets and the program is still on course. The findings of the study done by (Barmao, 2014) revealed that lack of trained ICT personnel and knowledge among teachers were the factors that would hinder the success of introducing laptop projects in schools. To ensure that the program is successful, the government is training all the teachers to understand and help implement the project. Teachers have trained on among other courses to become Microsoft Certified Educators. Bunyi, Wangia, Magoma, and Limboro (2013) discuss the School-based Teacher Development (SbTD), Early Grade Reading (EGR), Reading-to-Learn (RTL) and Strengthening of Teaching of Mathematics and Science in Secondary Education (SMASSE) as some of the common continuous professional development programmes in Kenya.

Strengthening Education Systems in East Africa (SESEA) is a program that is a joint initiative between the Global Affairs Canada and Aga Khan Foundation Canada targeting the areas of low educational standards in East Africa. SESEA takes a three-pronged approach to enhancing and sustaining the learning outcomes of pre-primary and primary girls and boys in marginalized communities within Southern Tanzania, Uganda (Western Nile) and Coastal Kenya (Strengthening Education Systems East Africa, SESEA, n.d.).

In 2009, the Aga Khan Academy Mombasa, through the professional development and outreach programme, started the SESEA project that targeted primary school teachers in Mombasa, Kilifi and Kwale counties. When the programme came to an end in November 2017, a total of 102 teachers (24 Male and 78 Female) were certified in the Programme of Teacher of English, Program of Teachers of Mathematics, Education Leadership and Management Program and Competency Based Education and Short Courses in Lead Facilitation and Collaborative Discussion Forum.

The Collaborative Discussion Forum (CDF) is an academy faculty led sessions. These sessions are delivered to teachers in Mombasa County (Island, North, South and West) and they address the fundamental aspects of the needs assessment exercise and tap from the academy's expertise. The faculty researches on the topics identified and provide a forum to mentor the participants. They follow them up in their local schools by sampling ten percent of the participants for each workshop for observation. The facilitators design observation tools in liaison with the master trainer in charge of CDF. These tools help in capturing data and compiling reports. The course participants are expected to prepare individual education plans (IEP) to demonstrate and apply the knowledge acquired plus any other deliverable that the facilitators may require. The facilitators compile a report detailing the milestones experienced in the workshops, new learning experiences, findings and any challenges experienced. Twelve sessions are held every SESEA year and each topic is delivered three times to different sets of participants from the catchment areas (Island, North/South and West). In the year 5 of SESEA, the following topics were delivered: Assessment for Learning, Technology Infusion in Teaching and Learning, Constructivism Pedagogy as a Student Empowerment approach, and Data Management to Inform Teaching and Learning.

1.2 Statement of the Problem

Throughout the world, education stakeholders seem to be investing in educational project that will transform teaching and learning. Microsoft in education for instance focuses on providing technology that can support solutions to improve teaching and learning experiences with the expectation that teacher professional development programs will contribute to student learning(Cavanaugh et al., 2014).

In East Africa, investment in ICT for education is taking course among some other programmes like SMASSEA, SESEA, EGR, SbTD, and RLT. The focus is to prepare teachers to have the capacity to handle various reforms and also to meet certain needs in education.

Mahulo (2012) did a study on the influence of teacher training on the performance of student and revealed that trained teachers incorporate various effective teaching methods thus improving their content delivery in the classroom. In his study on 'Factors Affecting the Teaching of Oral Communications in English Language in Secondary School in Kakamega and Vihiga Districts of Kenya', Atsenga (2002) also found out that effective teaching methods have a high influence on learning. Many studies have been done on the influence of the various continuous professional development projects for teachers and they have been found to be effective in improving the teaching methodologies. Most of these projects are characterized by long continuous courses and it seems that short courses have not been keenly paid attention to in research. This study aims to validate the findings of the early researchers by studying the influence of CDF, a similar but altogether new project that is administered to teachers through short courses.

Many resources have been allocated to run the SESEA project with the hope that it will improve the teaching methodology of the participants. The Aga Khan Academy Mombasa concluded the phase one of the project and are now planning for the second phase. There seems to be little or no evidence of research done to assess whether the project is making any influence on the teachers in the coastal region so as to convincingly justify the implementation of another phase of the project. This research therefore was aimed at filling in this gap by examining the influence of Collaborative Discussion Forum Project on the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

1.3 Purpose of the Study

The purpose of this study was to examine the influence of Collaborative Discussion Forum Project on the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

1.4 Objectives of the Study

This study was guided by the following objectives:

i. To examine the extent to which the learner centred approaches influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.
ii. To establish the influence of integrating ICT in teaching and learning on the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.
iii. To determine the influence of teacher lesson planning on the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.
iv. To examine the extent to which Teacher-Learner communication influences the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

1.5 Research Questions

The study was guided by the following research questions:

i. To what extent do the learner centred approaches influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County?
ii. How does integrating ICT in teaching and learning influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County?
iii. How does teacher lesson planning influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County?
iv. To what extent does teacher-learner communication influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County?

1.6 Research Hypotheses

The research was guided by the following four hypotheses: tested at the 95% level of significance:

i. H_1 : Learner centred approaches have influence on the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.
   H_0: Learner centred approaches have no influence on the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

ii. H_1: ICT integration in teaching and learning influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.
   H_0: ICT integration in teaching and learning does not influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

iii. H_1: Teacher lesson planning influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.
   H_0 : Teacher lesson planning does not influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

iv. H_1 : Teacher-Learner communication influences the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.
   H_0: Teacher-Learner communication does not influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

1.7 Significance of the Study

The government of Kenya has been on the run to ensure that the teachers receive continuous professional development so that they can improve on the standards of teaching. In his international journal of Curriculum and instruction, Kafu (2011), comments that teacher education affects all the other aspects of education. The findings of this study will inform the policy makers in the Ministry of Education Kenya and the County Government of Mombasa to come up with strategies on what programmes they can partner with to enhance the competency of their teachers.

This research report will also benefit a great deal the donors of SESEA project including the Aga Khan Foundation Canada (AKFC) and the Global Affairs Canada who have financed the programme with 31 million Canadian dollars ("Strengthening Education Systems East Africa (SESEA)," n.d.). The findings will help in the monitoring and evaluation of the outcomes of project so as to inform decision making on the future of the SESEA projects.

The findings of this study will be of great significance to the Aga Khan Academy Mombasa even as it plans to start planning and implementing the second phase of the SESEA project.

Researchers interested in this area also expected to benefit from the study. They may get available information which they will utilize as they endeavor to further the study related to this area. The fact that this area of study has not been widely researched on makes the study significant and therefore a great contribution to literature.

1.8 Basic Assumptions of the Study

This study relied heavily on the responses that were collected from the questionnaires issued. The information required was elicited from the selected sample of the Collaborative Discussion Forum (CDF) participants. The study was carried out with a basic assumption that all the respondents correctly and faithfully answered the questionnaire without any prejudice and judgmental comebacks. The study also made an assumption that the teachers are applying the concepts that they learned from the CDF.

1.9 Limitations of the Study

Mugenda and Mugenda (2003) have defined limitation as 'an aspect that that may influence the results negatively, but over which the researcher has no control'. In this sense, there were time constraints in conducting this study in terms balancing job demands and even meeting with the supervisor and the respondents. The researcher, however, made use of the holidays, weekends and even allocating extra time to conduct the study. The study may not have gotten completely correct information from primary school teachers who participated in the Collaborative Discussion Forum because of the nature of information that might have seemed sensitive. However this was overcame by assuring the participants that the data collected would be used for academic purposes only and that it shall be kept confidential with their names not being exposed.

1.10 Delimitations of the Study

The study delimitated itself by only focusing on the public primary schools in Mombasa county, (specifically Mombasa Island, Kisauni, Likoni and Changamwe districts) that participated in the Collaborative Discussion Forum.

Also, the researcher targeted a sample size of 10% of the target population. The study also confined itself to the four variables stated in the objectives. Other variables that could influence the dependent variable were not considered. Lastly, the study used the questionnaire; a basic instrument of data collection that is easy to understand and that is likely to limit one from giving personal information.

1.11 Definitions of Significant Terms Used in the Study

Collaborative Discussion Forum are teacher professional training sessions delivered to teachers in Mombasa County (Island, North, South and West) and they address the fundamental aspects of the needs assessment exercise and tap from the Aga Khan academy's expertise.

Infusion of ICT in teaching and Learning is the teachers and learners use of technology tools that are available in a way that adds value to the process of teaching and learning.

Learner Centred approaches are teaching techniques informed of the belief that education should revolve around the needs of the individual child - as opposed to discipline-based o discipline-centred education which emphasizes the importance of subjects as bodies of knowledge that can be transferred to learners (Hickman, 2009)

Lesson planning is the practice of preparing written document as a plan to teach and individual lesson.

Teacher-learner communication refers to both formal and informal means of communication between the teacher and the learner as a tool for teacher-student relationship.

Teaching Methodology refers to the approach adopted (consciously or unconsciously) by a teacher when teaching. (Hickman, 2009)

1.12 Organization of the Study

This research project report is organized in five chapters. Chapter one is the introduction which includes the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, statement of the problem, purpose of the study, objectives of the study, research questions, research hypothesis, significance of the study, delimitations of the study, basic assumptions and the definition of significant terms.

Chapter two of the study consists of the literature review with information from other articles which are relevant to the researcher. It will focus on how teaching methodology may be informed of the concepts of learner centred approaches, ICT integration in teaching and learning, teacher lesson planning and teacher-learner communication as well as the summary, theoretical and the conceptual frameworks for the study. It also focuses on the research gap filled by the study. Chapter three presents the research methodology detailing the research design, target population, sample and sampling procedures, data collection instrument, validity and reliability of the instruments, procedure for data collection and data analysis methods. Chapter four consists of data presentation, findings and discussions, where tabular presentation and narrative discussions of the data was done. Chapter five consists of the summary of findings, discussions, conclusions and recommendations of the study which were drawn from the data analysis in chapter four. It also recommends some areas for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses the theoretical framework, relevant literature on how teaching methodologies are influenced by the concepts of learner centred approaches, ICT integration in teaching and learning, teacher lesson planning, and teacher-learner communication. In addition, the section also presents a conceptual framework showing the relationship between the independent and dependent variables.

2. 2 Teaching Methodologies used by teachers to improve learning

Teaching Methodology has already been defined as 'the approach adopted (consciously or unconsciously) by a teacher when teaching' (Hickman, 2009). Learning to teach is multifaceted and includes among other skills content knowledge, pedagogical knowledge and teaching skills. Teaching methodologies are particularly drawn from the pedagogical concept. This focuses more on understanding how classroom work, how to maximize learning and therefore the need to acquire the various teaching methods (Jacobsen, Eggen, and Kauchak, 2009). Lesson planning, inquiry, classroom management and objectives and goals are some of the concepts that need to be understood by teachers for effective learning of their students.

Research isolates learner centred method and teacher centred method as two major teaching methodologies with the latter being associated more with traditional teaching styles. Teaching methods are many and can vary depending on different things but the concept is always targeted at students learning. 'Teachers decide on an approach to their teaching depending on the context in which they are teaching, which includes the nature of the pupils and the circumstance of a particular time, such as time of day, or the season, aims of the lesson or previous experience of the class' (Carr, Éireann, Cliath, and Rúnaí, 2007). The multiple intelligences result into many different learning styles and are therefore also the reason behind the many different teaching methodologies. Carr et al. (2007) also propose six main central teaching methodologies including talk and discuss, active learning, collaborative learning, problem solving, skills through content

and using the environment. There are efforts by the educational stakeholders to equip teachers with skills on learner centred methods and strategies like collaboration and using technology. Improving on teaching methodologies means better learning for students.

2.2.1 Influence of Learner Centred Approaches on teaching methodologies

Learner centred approaches put the student at the centre of learning so that the student takes an active role in the learning process. In student centred instruction, the teacher provides students with opportunities to learn independently and from one another and facilitates learning as a coach guiding them develop the required skills effectively (Collins and O'Brien, 2003). The learner is the focus in learner centred approaches and 'learning by doing' is greatly emphasized. The student learns by actively participating in the learning activities rather than on transmission of information from the teacher to the learner as it is the case in teacher-centred approaches.

The learner centred approaches in teaching and learning also agree to the constructivism and experiential learning theories where students are given the chance to be engaged in their own learning process (Dano-Hinosolango and Vedua-Dinagsao, 2014). Dano and Veduna refer to constructivism learning theory as developed by Lev Vygotsky and Jean Piaget stating that human beings produce or construct meaning, understanding and knowledge of the world from their own experiences. From constructivism, learners should not be treated as tabula rasa (blank slate) because they come to learning situations with a lot of experiences that should be tapped. This kind of learning is popularly known to inform the concept of learning 'from known to unknown'. This therefore means that students are actively engaged in the learning experience as a discovery journey. Kolb's experiential learning theory defines learning as "the process whereby knowledge is created through the transformation of experience (Kolb, Boyatzis, and Mainemelis, 2001).

Black (2007), cited by Vale, Davies, Weaven, and Hooley (2010) argues that student centred approaches in learning involve inquiry and problem based learning where learners have control over their learning and there are high levels of co-operation among learners. According to Savery (2015) Problem-based learning (PBL) is an instructional learner-centered approach that empowers learners to conduct research, integrate theory and practice, and apply knowledge and skills to develop a viable solution to a specific problem.

In PBL, the students learn through solving problems in small groups and reflecting on their experiences while the teacher's key role is changed to one that facilitates a collaborative construction of knowledge (Ling and Loy-Pang, 2007). The Stanford University Newsletter on Teacher (2001) reported that students learn best by constructing solutions to open ended, complex, and problematic activities with classmates, rather than listening passively.

While engaged in the process of finding answers for set problems or in a project trying to accomplish an authentic goal, students learn much more than they can ever be told. They also take the central role of producing knowledge rather than always being the consumers of knowledge.

Marink et al. (2016) also enlist Inquiry Based Learning (IBL) as one of the most effective student centred approaches in teaching and learning as it makes the learner curious about knowledge. Their study on whether IBL can transform the teaching methodology in the traditional university found out that inquiry learning activities contributed greatly to students' interests in various subjects. IBL teaches students to ask good questions and the focus of teachers is training students to know how to learn so that they can own the process. It improves problem solving skills and motivates learners by ensuring that students are learning actively through data exploration and analyzing information (Push and Kehrwald, 2014). The IBL practice can improve the teaching methodology as the teacher learns how to structure learning often in activities that will lead students into an inquiry lesson. The learning activities are guided by the lesson objectives but at the end of the lesson students can end up learning much more beyond what was planned. IBL as a pedagogy best enables students to experience the processes of knowledge creation (Spronken-Smith, 2012). It allows them to have a voice in the learning process and to listen. Research skills are also developed in IBL and students are encouraged to end by asking even further questions. It appreciates the fact that learning is not just filling the gaps but 'digging even deeper gaps'.

Collaborative learning method is another effective learner centred approach which can be applied in different strategies including PBL and IBL discussed above. Collaborative learning involves creating and managing meaningful learning experiences and stimulating students' thinking through real world problems.

Gokhale (1995) did a study on the effectiveness of individual learning versus collaborative learning in enhancing drill-and-practice skills and critical-thinking skills and concluded that collaborative learning fosters the development of critical thinking through discussion, clarification of ideas, and evaluation of others' ideas. Cooperative learning is also at the heart of problem-based learning and it is related to collaborative learning that occurs as an effect of community in which students work together in unstructured groups and create their own learning situation (Johnson, Johnson, and Smith, 1998).

The two concepts, collaborative and cooperative learning seem to emphasize the idea that students have a lot they can learn from one another. This way the students do not only become knowledgeable but also develop collaborative skills which are very essential 21st century skills.

The three learner centered approaches as discussed above have been shown to support pupils to easily construct meaning because they involve the process of the students themselves experiencing learning. Ganyaupfu (2013) citing Hesson and Shad (2007) indicate that most teachers today apply the student-centered approach in their teaching methodology to promote interest, analytical research, critical thinking and enjoyment among students. The learner-centered teaching has become a widely accepted teaching method that shows how to tie teaching and curriculum to the process and objectives of learning rather than to the content delivery alone (Weimer, 2013). According to Froyd and Simpson (2008) in his conference paper, teachers from across the nation (teaching both large and small classes) who have adopted a student-centered learning approach find teaching to be more enjoyable. Teachers can also help students to develop perseverance and motivation by supporting them in their efforts to meet expectations and in showing greater degrees of commitment (Mykrä, 2015).

From the study done by Ganyaupfu (2013) to investigate whether there are significant differences between the effectiveness of different teaching methods on students' academic performance, it was clear that students build a better understanding of the main concepts more effectively when they are engaged to solve problems during class activities.

The collaborative discussion Forum can be justified by the claim that whilst teachers and students are acquainted with student-centred learning to a certain degree, they are in need of more guidance, knowledge and understanding regarding its application and practice (Marinko et

al. 2016). Mwangi (2014) did a study to investigate the influence of learner-centred strategies on students' biology performance in Kenya Certificate of Secondary Education (KCSE) in Kinangop sub-county, Nyandarua County. His researched concluded that learner centred Strategies had influenced students' performance in biology in KCSE.

2.2.2 Influence of Integrating ICT in Teaching and Learning on Teaching Methodologies

Roblyer (2006) defines integrating educational technology as the process of determining which electronic tools and which methods for implementing them are appropriate responses to given classroom situations and problems. Ghavifekr and Rosdy (2015) on the other hand define it as technology-based teaching and learning process that closely relates to the utilization of learning technologies in schools. Roblyer (2006) envisions technology as a channel for helping teachers communicate better with their students. In a report of an inquiry project in 'Fulbright Distinguished Awards in Teaching Program in Indiana University Bloomington', Mykrä (2015) notes that today's learners are more connected to technology than previous generations. Prensky (2001) indicates that our learners have radically changed and the educational system needs some kind of redesigning. He calls the students of today 'native speakers' of digital language and hence emphasizing the need to infuse technology in teaching and learning. The experience of different technological contexts has caused a mismatch between the learners and teachers' expectations meaning that teachers must rethink their teaching methods (Bluestein, 2011). There is need to infuse technology in teaching to prepare learners for the workforce.

The integration of technology in the instructional programs has become an important part of today's teaching and learning environment (Fogel, 2016). Information technologies have more potential than ever to help teachers address the challenges that they face in this modern day world (*Engaging Students and Enhancing Learning Outcomes with Internet and Instructional Technologies*, 2015). A study done by Wasif, Munir, and Shad (2012) on the usage and impact of ICT in Education Sector of Pakistan involving 429 respondents from 5 colleges and universities show that availability and usage of ICT improves the knowledge and learning skills of students.

Ilomäki (2008) also conducted a study to investigate the effects of ICT on school from teachers' and students' perspectives and the results indicated that schools which have special ICT projects for improving pedagogy experienced true changes in teaching practices. However, the study also

show that ICT does not always change classroom practices, teachers' work, even their pedagogical conceptions about teaching and learning but this depends on both their attitude and how it is implemented. Burke (2014) observes that success using these technologies is highly dependent on the enthusiasm of the teachers and not the device itself. The ICT tools can therefore be seen just as opportunities to improve the teaching methodology rather than replacing it. With the advancement in technology, qualified teachers are still needed to plan the instruction and facilitate learning. Remarkably, Ghavifekr and Rosdy (2015) show in their study that technology based learning can actually improve on how the teachers manage their class as it makes students well-behaved and more focused because they are motivated to learn.

Technology can make a lot of difference in the delivery of lessons or even education at large. It readily supports student-centred approaches like collaborative learning and inquiry based learning already discussed above. ICT can enhance teaching and learning because it has the potential for a wider accessibility to educational resources which could otherwise not be possible (Bindu, 2016). With ICT, teachers have to improve their teaching methodology so that they incorporate more creative approaches. For instance, ICT gives students the opportunity to access a variety of information which will ideally mean that the teacher is not the only one who can access content. The role of the teacher henceforth changes to helping students learn how to learn from the already available information.

These significant changes in technology and education imply that teachers need sufficient training on how to use ICT tools in a way that adds value in teaching and learning in schools as recommended in the study conducted by Obonyo (2013) in Rachuonyo South District, Kenya. An effective training on ICT integration for teachers will help them align their teaching methodologies to adopt the use of available technologies in their school environment. A study that was done in Malaysia about the effectiveness of ICT integration in schools demonstrate that teachers' well-equipped preparation with ICT tools and availability of facilities is one of the main factors in success of ICT integrated teaching and learning (Ghavifekr and Rosdy, 2015). The research also indicates that technical difficulties are a major problem and a source of frustration for students and teachers and cause interruptions in the teaching and learning process. The teacher is supposed to deal with integrating the ICT more than learning about the very

technical skills otherwise every teacher will be required to be an IT teacher. Technical support is therefore invaluable in schools that plan to implement ICT integration effectively.

Commenting on how ICT can improve teaching methodology, Wiske et al. (2005) say that it helps the teachers to shift their attention from just covering the curriculum to building students capacity because they are teaching for understanding. Information Technology literacy is one of the key 21st century learning skills. Infusing ICT in learning therefore helps students to begin making connections of their world and what they are learning. Twenty-first-century teaching learning skills emphasize the need to transform the conventional teacher-centered pedagogy to more learner-centered where learners are actively involved in learning (Bindu, 2016). For ICT integration to be effective in teaching and learning, there is need to focus more on growing the skills of those very key stakeholders that are involved in implementing it, that is, the teachers and the students (Mutie, 2016).

However, ICT integration in education can have both positive and negative impact on both teaching and learning process depending on how they are used hence the need for proper training of teachers. From his study on factors that affect the use of ICT in Secondary Schools in Nyamira-County, Kenya, Nyamweya (2017) concluded that there has been inadequate use of ICT in teaching and learning in secondary schools in Kenya. Some of the school related factors like proper ICT policy, teaching load, finances and teacher development programs greatly influenced the integration of ICT into teaching and learning as found out by Ondiegi (2014). This means that although ICT integration in teaching and learning can be very effective in transforming how students learn, there are still various mostly school-related factors serving as a stumbling blocks and will first need to be addressed.

2.2.3 Influence of Teacher Lesson Planning on Teaching Methodologies

Jamali Nasari and Heidari (2014) define a lesson plan as a written description of education process in which it is shown what, when, where and with which method learners should learn and how they should be assessed. Lesson plan is one of the key professional documents in the teaching career. It is one of the very key pedagogical component (Guerriero, 2013). The study done on the important role of Lesson Plan on Educational Achievement of Iranian EFL teachers' Attitudes show that by having a lesson plan, a teacher is able to manage his time, effort and

resources efficiently. Therefore good lesson plans have got the potential to improve the teaching methodologies significantly.

Hopkins (2012) recommends that for successful lesson planning, teachers should think through both the learning objectives and the expected learning outcomes in advance. He continues to indicate that the lesson plan should have the students be involved as much as possible and should have the objectives of the lesson evaluated. Getinet (2016) in a study on lesson planning and students achievement indicates that many teachers still fail to identify students learning needs and planning for differentiated instruction based on individual student's performance as they plan their lessons. Getinet describes that an effective lesson plan should have four clear stages including: developing cognitive objectives, designing homework that reflects the cognitive objectives, developmental activities that promotes meaningful learning and constructing mental activities. From this, it's clear that a lesson plan must be driven by activities that the students will be doing to learn the concepts and skills intended.

A comparative study done by Cicek and Tok (2014) on 'the Effective Use of Lesson Plans to Enhance Education in U.S. and Turkish Kindergarten through 12th Grade Public School System' shows that lesson plans affects not only teachers instruction but also classroom management because the students understand what they are supposed to do and the climate of the classroom is work-oriented but relaxed and pleasant (Cicek and Tok, 2014). It is clear that managing time is an important feature of a good lesson plan. With training and practice, the teacher should be able to know how many objectives can be achieved within a lesson. Many lesson plans seem to be ambitious having too many concepts to learn instead of focusing on what students will do to learn yet as already discussed from the social constructivism theory, students will learn best by having an opportunity to construct knowledge themselves.

Meyer (2005) advocates for teachers' collaborative practice to design more effective lesson plans. A lesson plan does not exist exclusive of the unit or topic of study and hence it is important that it reflects the overall objectives of the unit. It can be a monotonous activity to plan lessons from time to time and teachers can lack fresh perspectives especially if they do not attend continuous professional development. There is however a great opportunity to work with their colleagues in school to get more perspectives.

It has been however, argued that the lesson plans should only be considered as outlines to guide learning actions that can be dynamic depending on different circumstances as the lesson is being executed (Valenčič Zuljan, Vogrinc, and Marentič-Požarnik, 2010). Indeed John (2006) indicates that teachers should not waste time arguing about the technical aspects of a lesson plan because it should never be viewed as a blueprint for action, but should be a record of interaction. He perceives lesson plans to be responsive to children's needs and the teacher can pursue goals that are emergent rather than pre-determined. A recent research done about student teachers' decision-making skills in relation to lesson planning indicates that student teachers diverted from their lesson plans when the situations called for such changes, and that the actual teaching impinged upon their decision-making skills (Sougari, 2017).

It is also worth noting that learning any new teaching method takes time to understand, practice and master. Teachers learn what works for them in teaching by what works and does not work for their learners (Ahuja et al., 2004). A good lesson plan is the one that works well with the learners and the learning objectives are effectively explored.

2.2.4 Teacher-Learner Communication Influence on Teaching Methodologies

The communication between the teacher and the learner is more about relationship and what kind of feedback they give each other. More often, the teacher is usually standing in front of class delivering a lesson but effective teacher-learner communication requires a one on one kind of interaction. The teacher should work with students as a friend, make the learning place more comfortable, organize his/her lesson plans, and influence students by using different teaching methods (Shinn, 1997). This means that teachers should seek to interact with students even outside the classroom environment including in informal settings.

Exploring on the components that make great teaching, (Coe at al. 2014) explain that there is a clear need to create a classroom that is not only constantly demanding more, but also recognizing students' self-worth. The student success should be celebrated rather than ability and their resilience should be valued instead of focusing on failure. A case study of teachers and students relationships and the effect on students learning done by Gablinkske (2014) indicates that classroom climate which means the culture of respect and caring the classroom inhabitants, teachers and students have, should be purposely created by the teacher. The teacher needs to

ensure that every student feels 'safe' in class and that everyone is intending them well. The teacher should essentially create a classroom that is of as a community that understands and supports. The second factor identified is the classroom layout which refers to the physical environment of the classroom and reflects the purposeful placement of furniture, equipment, and materials to support student learning. Modern classroom set up that is encouraging interactive learning shows that educators prefer to have students to face each other. The third factor that the study found out was the teacher interaction behaviors which are referred to as specific actions that allow for positive communication between the teacher and her students. The teacher needs to use words that motivate students like praising them and encouraging them including giving timely feedback on their work. Students cannot be expected to be perfect and so the teacher should know how to ask them to work on their weak areas in which case they are taking the role of a mentor. The last factor explored was the instruction that the teachers uses. This should be the one that allows the teacher to interact more with the student and build a support relationship.

The findings of a study on teaching methods and students' academic performance carried out by Ganyaupfu (2013) demonstrate that teacher-student interactive method is the most effective teaching method, followed by student-centered method while the teacher-centered approach was the least effective teaching method. The method that incorporates the interaction between the student and the teacher emerged as the best teaching methodology. It shows that teachers should carefully structure learning activities that have opportunities for them to interact and build their rapport with students. The results of another study of the 'Effect of Teacher Interpersonal Behaviour on Students' Subject-Specific Motivation' demonstrates that teacher interpersonal behaviour has a significant role in student motivation and the importance of combining insights from various educational research disciplines (den Brok, Levy, Brekelmans, and Wubbels, 2005). Actually the relationships should extent outside the classroom and teachers should find ways to capitalize on these relationships, which can clearly act as catalysts for student achievement (Nugent, 2009). Students should feel equally valued in class for the teacher's methodology to be efficient in achieving greater learning outcomes.

However, Yiu (2011) in his study on the same subject found out that there are other factors that affect the perceptions of the teachers and how close they will be with students. The students' race, gender and academic performance affected how teachers felt towards their students.

Teachers will therefore need to be keen on having biased perspectives about students which may limit how they interact with those students by developing a more meaningful and professional communication with them. Luz (2015) did a survey on 'Relationship between Teachers and Students in the Classroom: Communicative Language Teaching Approach and Cooperative Learning Strategy to Improve Learning' and profoundly found out that majority of teachers and students value a supportive and caring relationship between them and that interaction is essential to the teacher-student relationship. Teachers who are more caring and supportive tend to make the learners be interested in the learning process.

On the influence of feedback on learning, Gunlock (2014) in an action research found out that providing feedback helps students to become more engaged and self-motivated in their learning which in turn improves their ability to acquire the necessary skills. Students will need to receive consistent and regular feedback about their learning. The teacher can employ several methods in giving both verbal and written feedback to learners but the primary goal is to support rather than judge the learners. Consistent feedback supports the concept of formative assessments, which are supposed to be assessments for learning as assessments should give feedback both to the students and teachers on the areas that will need further emphasis.

A study done with the kindergarten pupils shows that preservice teacher training course fosters learning on how to provide students with high-quality feedback rather than simply teaching how to do this takes intentional planning and instructional modeling of best assessment practices (Thomas and Sondergeld, 2015). Feedback, when properly given can eventually help students in improving their learning experience and hence the need for training teachers on how to give feedback. Ahea (2016) suggests that feedback is more effective and valuable for students learning when students are made to understand what good performance or goal means, the improvement process of self-assessment or reflection in learning is simplified, providing quality information to students about their learning, allowing peer dialogue in understanding the feedback, inspiring positive motivational beliefs, proving opportunities to close the gap between the current and the desired performance and giving positive feedback. The student should feel positive after receiving the feedback and generally teachers need to celebrate the students' achievements and encourage them on how they can improve.

Interestingly, another study done by Carvalho et al. (2014) revealed that a student gender can affect how they perceive feedback, with girls perceiving more effective feedback than boys. Girls were found to be more critical than boys concerning the kind of feedback they were given by their teachers. They were found to seek more feedback from teachers and this was also attributed to the fact that they tried to be more pleasing to the teachers. However, this difference was only noted in academic programs and not vocational programs. While being keen on the different learning styles of the learners, teacher should endeavor not to come to class with misconceptions that could negatively impact on the kind of feedback that they give their students

2.3 Theoretical Framework

This study was guided by two theories:

2.3.1 Guskey's Model of Evaluating Professional Development

It is important to evaluate the professional development so that program managers and even the participants are empowered to make decisions that are based on data. This can help in bettering both the program and the outcomes (Killion, 2008). This study is focused on the need to evaluate teacher professional development and is informed of the 'Five levels of Professional Development Evaluation' model by Thomas R. Guskey which according to him includes; Participants' reactions, participants learning, organisation support and change, participant use of knew knowledge and skills, and student learning outcome. This model was found to be suitable since it shows the different phases of evaluating professional development which are very similar to the ones the CDF has passed through. The study focuses at levels four and five of the model while evaluating the outcomes of the CDF training project (Guskey, 2000). Guskey's theory strongly emphasizes that professional development need to be evaluated and even the policy makers and legislatures have started being keen on this area as a part of monitoring and evaluation so as to make decisions on what programmes are worth investing in.

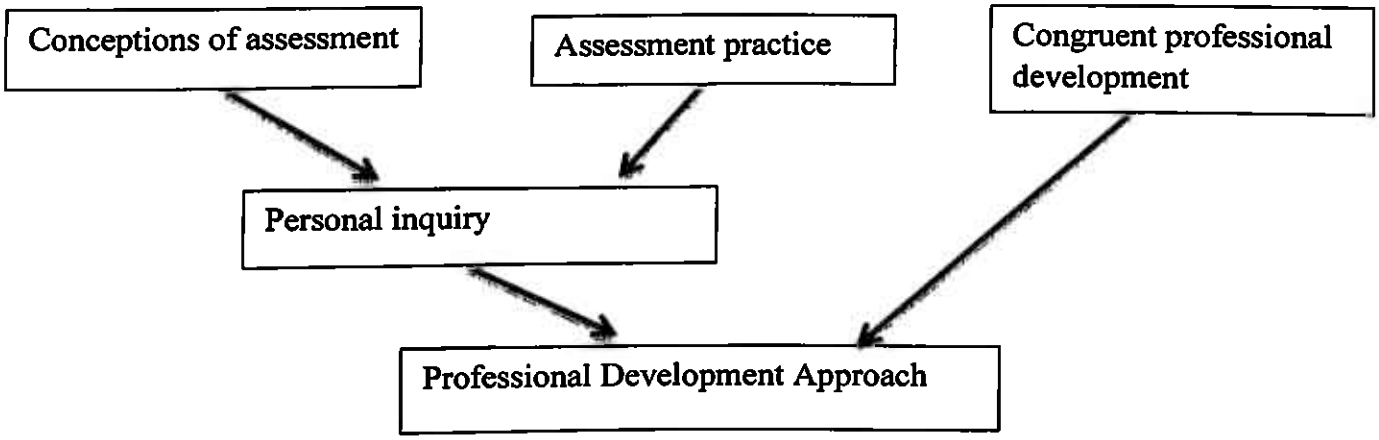
This is also in line with the arguments of Haslam (2010) that evaluating professional development programs helps in understanding teacher professional development better. He proposes formative and summative evaluation which will ideally mean monitoring and evaluation. He sees the evaluation of teacher professional development as a practice that should be continuous. Haslam argues that in as much as developing teachers professionally is targeted at

improving students learning, the teacher knowledge, skills, and practice are more immediate goals. These immediate goals that directly focus on teachers should be evaluated too. This applies to this study since the focus is on the teachers practice; teaching methodology. The study looks at teachers who have undergone through the CDF project and seeks to investigate whether the training has influenced their teaching.

2.3.2 Theory of Improvement in teachers' professional development

The Theory of Improvement for teacher professional development in assessment for learning was conceptualized by Drs. Niek van Benthum, Dr. Judith Gulikers, Dr. Frank de Jong, and Prof. dr. Martin Mulder. The 'Theory of Improvement' for teacher focuses on assessment and assessment practice which are challenged in a personal enquiry and congruent professional development of teachers and middle management (Benthum, Gulikers, de Jong, and Mulder, 2012). The theory was found to be very suitable for professional development in a Professional Learning Community, a concept that is closely related to collaborative learning community. The theory has four elements including conceptions on assessment, assessment practice, personal inquiry and congruent professional development of teachers and middlemen. The theory underpins the professional development programmes and can be summarized in figure 2.1 below:

Figure 2.1: The theory of Professional Improvement



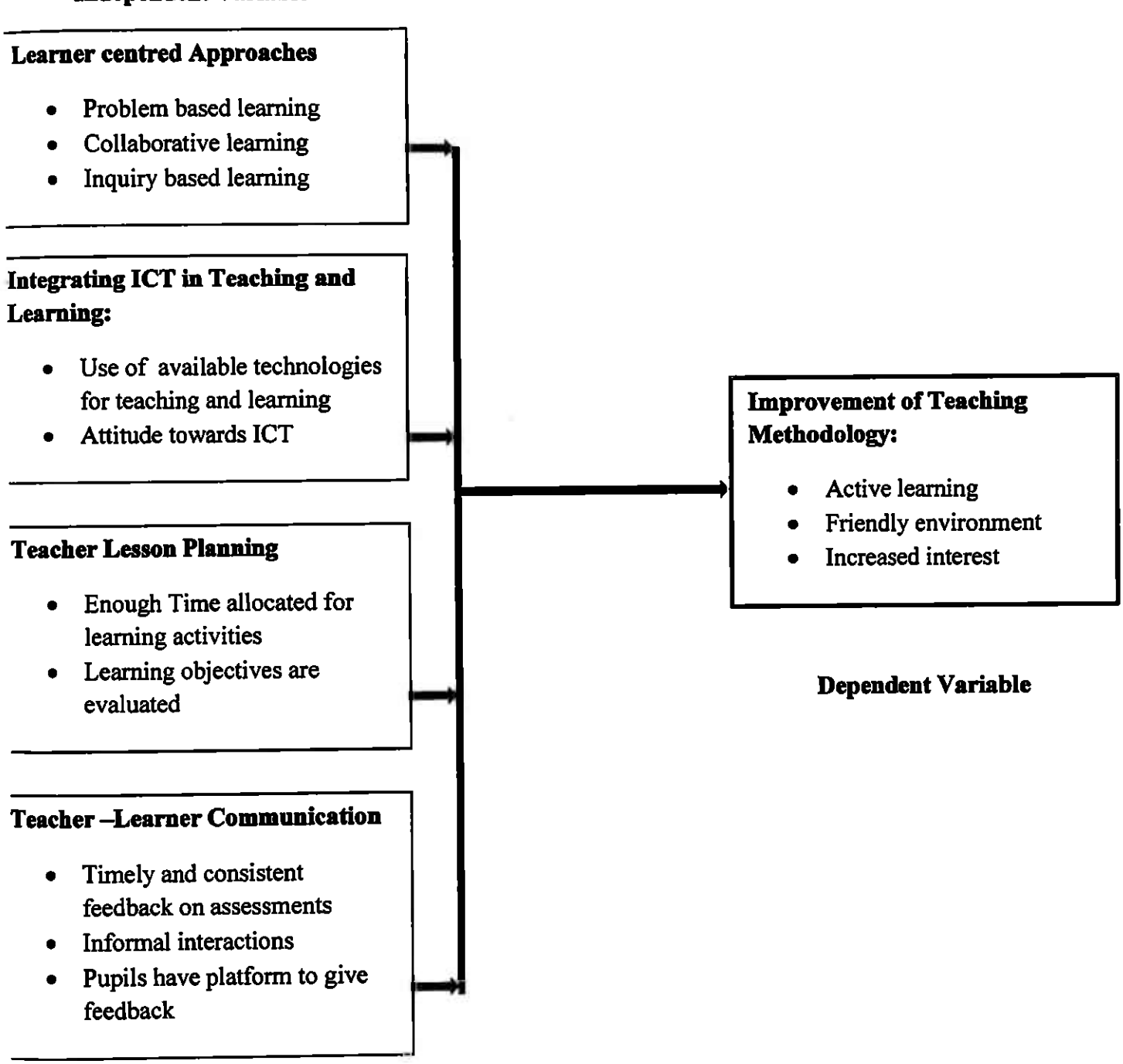
Source: (Benthum et al., 2012)

This theory forms the basis for the argument of this project to evaluate the influence that the CDF teacher training had on the participants.

2.4 Conceptual Framework

The following conceptual framework serves as a mind map for the independent variables as they relate to the dependent variable, improvement of teaching methodologies as shown on the literature review above.

Figure 2.2: Conceptual Framework



2.5 Knowledge Gap

Table 2. 1: Knowledge Gap

Objective	Study	Findings	Gap	Filled by the study
To examine the extent to which the learner centred approaches influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.	The influence of learner centred approaches on teaching methodologies	Teaching strategies that involve active participation of the learners including problem based learning, collaborative learning and inquiry based learning enhance greater learning.	How do teachers feel about the learner centred approaches and what is the relationship between the learner-centred strategies and improving teaching methodologies?	Learner-centred approaches have a strong positive correlation with the improvement of teaching methodologies and teachers agree that they are very effective.
To establish the influence of integrating ICT in teaching and learning on the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.	The influence of ICT integration in teaching and learning on teaching methodologies	Infusing ICT in teaching and learning are strongly advocated to be improving the teaching and learning and are associated with better learning outcomes.	What is the attitude of teachers about integrating ICT and how does ICT infusion influence teaching methodologies?	With proper training, teachers develop a positive attitude towards the integration of ICT in teaching and learning. Integration of ICT in teaching and learning is critical in the 21st century leaning and it enhances learner centred approaches.
To determine the influence of teacher lesson planning on the	The influence of teacher lesson planning on teaching	Lesson planning is effective especially when objectives are	How should time be allocated for the lesson and how do teachers	Most of the time should be allocated for students' hands

improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.	methodologies	clear, achievable and evaluated. Lesson planning should be responsive to learners' needs rather than being prescriptive.	think lesson plan documents should be used?	on activities. Teachers prefer modifying the lesson plans according to the circumstances during the lesson.
To examine the extent to which Teacher-Learner communication influences the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.	The influence of Teacher-learner communication on teaching methodologies	Building healthy relationships and giving timely and constructive feedback between the learner and the teacher affect the learning process. Students are more motivated to learn when a friendly climate is created by the teacher both in the formal and the informal settings.	How is the teaching methodology influenced by teacher-learner communication? How will students' giving feedback affect the way they learn?	Teaching methodology becomes better with close teacher-learner relationship as a friendly classroom environment is created when students have a chance to give feedback about how they are learning.

2.6 Summary of the Chapter

This chapter has reviewed the literature on teaching methodologies. Research identifies learner centred methods and teacher centred methods as two main categories of teaching methodologies. Learner centred approaches including problem based learning; collaborative learning and inquiry based learning which enable active learning resulting to deeper understanding. It shows that teaching methods vary according to different circumstances and they do influence how students learn. The integration of ICT in teaching and learning is a 21st century need in teaching. Technology works to enhance the learner centred approaches and spark curiosity in learning. Teacher lesson plan is important in teaching as it helps to record, guide and evaluate the learning

objectives. Teacher-learner communication is also important in creating a friendly learning environment as seen in the literature review.

The chapter also reviewed Guskey's model of evaluating professional development and the theory of improvement in teachers' professional development. The two theories provided a foundational knowledge for this study. There is also a conceptual framework in this chapter and it gives a summary of independent and dependent variables. Finally the knowledge gap reviews the study's objectives, findings from the literature review, the gap in knowledge and how the gap was filled by the findings of this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the study's research design. It also defines the target population, the sampling procedures and the methods that were used in collecting data from the respondents. In addition, the chapter provides an explanation of how validity and reliability of the research instrument were met. The method of data collection and analysis used are identified and the chapter provides the ethical consideration in this study. Finally this section presents the operationalization of the variables.

3.2 Research Design

The study was conducted through a descriptive survey research design as conceptualized by Kothari (2004). This design was relevant to the study since the objectives were already predetermined and it therefore allowed data collection relevant to the study problem, in this case investigating how the identified variables influence the improvement of the teaching methodology. This design also allowed the researcher to gather information in the most cost effective way. The study combined both quantitative and qualitative data collection procedures. 'Carefully constructed descriptive design allows the researcher to study the phenomenon in its natural setting, eliminating bias and maximizing the reliability of the data collected' (Kothari 2004).

3.3 Target Population

Mugenda and Mugenda (2003), defines target population as 'that population to which the researcher wants to generalize the result of the study'. A record from the Professional Development Centre at Aga Khan Academy Mombasa indicates that a total of 73 public secondary schools in Mombasa country participated in Collaborative Discussion Forum Project. The participants come from four districts namely Mombasa Island (21 schools), Kisauni (18 schools), Changamwe (23 schools) and Likoni (11 schools). From every school, only 4 teachers participated in the CDF and these are the ones that the researcher sought to make a generalization about. This study therefore targeted a population of 292 teachers from Mombasa County who attended the CDF training project from the four districts.

3.4 Sampling Technique and Sample size

The survey focused on 30 out of the 292 teachers who participated in the CDF from the four districts of Mombasa Island, Likoni, Kisauni and Changamwe in Mombasa County. This gave 10.3 % of the total number of participants in this project. To obtain the study sample according to Gay cited in Mugenda and Mugenda (1999), for descriptive studies 10% of the accessible population is enough.

Stratified Random sampling technique was used to select the participants from schools across the four districts. This technique was chosen because it guaranteed desired representation from the four districts thus increasing efficiency of the survey. Once participants were categorized in the four strata, simple random sampling procedures was used to select four schools from each district where 8 teachers were selected from those schools from districts with more than 20 schools participating and 7 from those with less than 20 schools. From the four schools, a number was given to each participant and then placed in the container and then picked randomly. Two teachers were picked from each of the four schools to make a total of 8 from the two categories with more than 20 schools while those with less also had two each but one from the 4th school that made a total of 7 each. This made a total of 30 selected sample size as shown in the table below:

Table 3. 1: Sample Size

Population category	**Target population**		**Censured population**
	Schools	Teachers	
Mombasa Island District	21	84	8
Likoni District	11	44	7
Kisauni District	18	72	7
Changamwe District	23	92	8
Total	**73**	**292**	**30**

3.5 Research Instruments

The questionnaires were used to collect data from the total population. These were structured into 4 chapters and every chapter focused on one objective using both open ended and closed ended questionnaires to collect the relevant data for this study. The questions were developed to address the specific objectives of the study as stated in chapter one and discussed in the literature review. Questionnaires were found appropriate in enabling the researcher gather a large amount of data from many respondents in the most economical way. 'Questionnaires are mostly appropriate for the descriptive survey design and are also useful instruments of collecting primary data since respondents can read and then give responses to each item and they can reach a large number of subjects' (Orodho, 2004). Furthermore, using the questionnaires provides greater anonymity through coding and discrete analysis of the respondent personal details (Kombo and Tromp, 2006)

3.5.1 Validity of the Instrument

Mugenda and Mugenda (2003) refer to validity as 'the degree to which results obtained from analysis of the actual data represent the phenomena'. Orodho (2005) recommends that questionnaires should be piloted in schools outside the considered sample to establish whether the questions are measuring what they are intended, whether wording is clear, whether the questions are ambiguous and whether the questions provoke response. To enhance external validity therefore, the study drew a representative sample that was randomly selected from the stratified target population of the schools that participated in the CDF as outlined in the sampling procedures.

Content validity is the extent to which research instrument measure what they are intended to measure (Mugenda and Mugenda, 1999). To establish validity, the instruments was given to two experts to evaluate the relevance of each item in the instrument to the objectives and rate each item on the scale of very relevant (4), quite relevant (3), somewhat relevant (2), and not relevant (1). Validity was determined using Content Validity Index (C.V.I). C.V.I = items rated 3 or 4 by both judges divided by the total number of items in the questionnaire and found to be 0.87 were rated as good. This can be represented in a formula as n¾ / N

3.5.2 Reliability of the instrument

Reliability of a research instrument concerns the extent to which instrument yields the same results on repeated trials (Mugenda and Mugenda, 2003). The researcher used two pilot schools randomly selected from those that were not included in the sample size. Two teachers were selected from each of the two schools making a total of 4 participants and the reliability of the instrument was pretested before the actual data collection. Test retest technique was used to ascertain the reliability of the instrument. According to Mugenda and Mugenda (2003) a coefficient of 0.80 or more implies a high degree of reliability. Pearson"s Product Moment Correlation formula was used to compute the correlation coefficient.

$$r = \frac{1}{n-1} \sum \frac{(x_i - \overline{X})(y_i - \overline{Y})}{s_x s_y}$$

Where

r - The degree of reliability

x - The score obtained during the first test

y - The score obtained during the second test

Σ - Means summation

N - The number of scores within each distribution, Orodho (2009).

Using the formula above, the researcher, found a correlation coefficient of 0.9 at 95% confidence thus information given initially was reliable. The researcher was also guided by the research experts and shared with research peers on reliability of the research instruments to ensure credible results were always achieved.

3.6 Data Collection Procedures

Before going to the field to collect data and upon receiving a letter of authorization from the University of Nairobi, permit was obtained from the Aga Khan Academy Mombasa which was the administrator of the CDF training project. Appointments were then scheduled with the head teachers of the school to notify and request for permission to carry out the study with their

teachers. Through the help of two research assistants, the instruments together with transmittal letters were personally administered to the respondents who were given ample time to respond to the questions. This ensured achievement of a hundred percent response rate and also the respondents had a chance to seek clarification on items that were difficult to answer.

3.7 Data analysis techniques

Raw data from the field was collected and cross checked to ensure uniformity and then coding was done according to objectives and research questions. This helped to organize and reduce the data into manageable summaries. Both qualitative and quantitative data analysis technique were used to analyze the data. Data was analyzed using descriptive and inferential statistics with the help of Statistical Package for Social Scientist Software (SPSS). On the other hand, thematic analysis techniques were used to analyze qualitative data collected in the open ended questions. Descriptive statistics such as means, frequencies, and percentages were used to summarize data. Data was organized and presented in form of frequency tables and figures. Qualitative data was grouped in themes and used words for explanation. Chi Square was used to test the hypothesis while Pearson's correlation coefficient was used to determine relationships between variables.

3.8 Ethical Considerations

The researcher explained the objective of the study to all the head teachers and the teachers who were took the survey. It was clarified that participants were not to be exposed to any kind of risk or exploitation by participating in this survey. The researcher communicated with the respondents using a courteous and respectful language at all times during the collection of data. It was also communicated that the survey was for academic purposes and voluntary, therefore it did not attract financial benefits or any other kinds of benefits. All the participants were treated with respect and assured of anonymity and confidentiality of their responses as their names or the names of their schools would not be exposed and in fact they were not required in the questionnaire.

3.9 Operational Definition of Variables

The operational definition of variables describes what the variables were and how they were measured within the context of the study. Table 3.2 shows operational definition of variables in this study, indicators, measurements and data collection method that were used.

Table 3. 2: Operational Definition of Variables

Research Objective	Type of Variable	Indicator	Level of Scale	Research Design	Data Collection Method	Data Analysis
To examine the extent to which the learner centred approaches influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya	Independent variable: Learner centred approaches	Frequency of using PBL, IBL and Collaborative Learning, Sitting arrangement in class, Students attitude in learning using learner centred approaches	Ordinal scale, Interval scale	Survey	Questionnaire	Descriptive and inferential statistics Measures of central tendency
To establish the influence of integrating ICT in teaching and learning on the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya	Independent variable: ICT integration in Teaching and Learning	Technology tools used in T/L, Confidence in using ICT tools for T/L, Learner's understanding in when using ICT tools	Nominal scale, Ordinal scale	Survey	Questionnaire	Descriptive and inferential statistics: Measures of central tendency
To determine the influence of teacher	Independent variable:	Frequency of lesson	Ordinal scale,	Survey	Questionnaire	Descriptive and inferential

lesson planning on the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya	Teacher Lesson Planning	planning, Time allocated for L/Activities Frequency of evaluating learning objectives	interval scale			statistics: Measures of central tendency
To examine the extent to which Teacher-Learner communication influences the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya	Independent variable: Teacher-Learner Communication	Frequency of one-on-one interaction with learners, Levels of interaction with pupils, Time taken to mark assessments, Importance pupils feedback	Ordinal scale, interval scale	Survey	Questionnaire	Descriptive and inferential statistics: Measures of central tendency

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents the study findings. The chapter contains questionnaire return rate, demographic information of the respondents and different sub-sections that focus on the objectives of the study and the items in the questionnaire. The data collected from the field was keyed and analysed using SPSS version 20.0 software. The researcher made use of frequency tables, percentages, mean and standard deviation to present data. Statistical testing on hypothesis using the chi square and Karl Pearson's correlation coefficient was computed to make meaning out of the data.

4.2 Questionnaire Return Rate

The study sampled a total of 30 respondents who were issued with questionnaires and all of them dully filled and returned them. This represented 100% return rate and the result of return rate is presented in table 4.1.

Table 4. 1: Questionnaire Return Rate

Category	**Frequency**	**Percentage**
Returned questionnaire	30	100
Unreturned questionnaire	0	0
Total	**30**	**100.0**

This return rate is excellent and it is considered very good to make conclusions for the study and draw very reliable recommendations.

4.3 Demographic Characteristics of the Respondents

This section sought to establish the demographic information of the respondents by looking at the distribution of age category, teaching experience and rate of attendance in collaborative discussion forums. The findings are shown in the subsequent sub-sections.

4.3.1 Distribution of respondents by age

The study sought to determine the age of respondents involved in this study. In this context, the respondents were asked to indicate under which category of age they fall in terms of their age. The results are presented in table 4.2

Table 4.2: Distribution of respondents by age

Age in Years	Frequency	Percentage (%)
Below 25	1	3.33
26-30	4	13.33
31-35	13	43.33
36-40	6	20
41-45	6	20
Over 46	0	0
Total	**30**	**100.0**

The findings in table 4.2 illustrate that out of 30 respondents who participated in the study, 1(3.33%) is below 25 years, 4(13.33%) are between 26 to 30 years old, 13(43.34%) are aged between 31 to 45 years and comprise the largest group, 6(20%) are aged between 36 to 40 years, 6(20%) are aged between 41 to 45 years and we do not have any respondent above 45 years. From this survey, it is clear that majority of the CDF participants were between 31-35 years old.

4.3.2 Distribution of Respondents by rate of attendance in collaborative discussion forum

The study sought to know the rate at which the respondents in the study attended the collaborative discussion forums. This was important because it helped show the level of engagement in collaborative discussion forums and the reliability of the data collected from them. Therefore, the respondents were asked to rate the attendance of collaborative discussion forums and the results are represented in table 4.3.

Table 4. 3: Distribution of respondents by rate of attendance in collaborative discussion forums

Rate of attendance	Frequency	Percentage (%)
A few sessions	2	6.67
Some sessions	1	3.33
Most of the sessions	3	10
All of the sessions	24	80
Total	**30**	**100.0**

Out of 30 respondents who participated in the study, 2(6.67%) attended few sessions, 1 (3.33%) had attended some sessions, 3(10%) had attended most of the sessions and 24(80%) had attended all of the sessions. The results indicate that 27 (90%) of those involved in teaching were very consistent in the attendance of the collaborative discussion forum sessions.

4.4 Learner centred approaches influence on improvement of teaching

The respondents who participated in the study were asked to give their opinion on provision of learner centred approaches on improvement in teaching methodologies in public schools in Mombasa County. Based on statements on a scale of 1-5, where 1= strongly disagree (SD), 2 = disagree (D), 3 = neutral (N), 4 = agree (A) and 5 = strongly agree (SA). Results are presented in table 4.4.

Table 4. 4: Learner centred approaches influence on improvement of teaching

Item	Statements	SD	D	N	A	SA	Mean	SD
1	Problem based learning has greatly improved my teaching strategies in my classroom.	1 (3.33%)	0 (0%)	13 (43.34%)	15 (50%)	1 (3.33%)	3.50	0.73
2	Using collaborative learning has made learning to be more engaging and interactive in my classroom.	0 (0%)	2 (6.67%)	4 (13.33%)	13 (43.33%)	11 (36.67%)	4.1	0.88
3	Inquiry based learning has encouraged active learning and created interest among pupils in my classroom.	2 (6.67%)	1 (3.33%)	5 (16.67%)	21 (70%)	1 (3.33%)	3.60	0.89
	Composite Mean/ Standard deviation						**3.73**	**0.78**

From the study findings, most of the respondents were in agreement that learner centered approaches of problem based learning has greatly improved learning strategies. From the Problem based learning results 15(50%) of the respondents agree that using PBL has improved

their teaching methodologies and 1(3.33%) strongly agree. This can be summarized by a mean score of 3.5 indicating that the respondents agreed to the statement.

On whether using collaborative learning has made learning to be more engaging and interactive in the classroom, 13 (43.33%) of the respondents agreed, 11 (36.67%) strongly agreed and 4 (13.33%) were neutral. This indicates that using collaborative learning has made learning to be more engaging and interactive in the classroom as also shown with a mean of 4.1.

The respondents also agreed that inquiry based learning has encouraged active learning and created interest among pupils in the classroom. 21 (70%) of the respondents agreed and 1 (3.33%) strongly agreed to the statement. This can also be backed up with the mean of 3.6 showing respondents are in agreement that IBL is stimulating a lot of interest amongst the learners in the classroom.

In testing the hypothesis, the chi – square distribution table at 8 degrees of freedom and 95% level of confidence shows a value of 15.51 against the calculated value of 23.4. Since the calculated value is higher, we reject the null hypothesis and conclude that, learner centred approaches influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

The first objective was also to examine the extent to which these learner-centred strategies do influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya. The researcher therefore calculated the correlation using the Pearson's correlation coefficient. The following values were obtained 0.893, 0.945, 0.935 for the relationships between using PBL, collaborative learning, and IBL and the improvement of teaching methodologies respectively. The researcher therefore concluded that there is a strong positive correlation between learner-centred approaches and the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

In summary, the respondents agreed that learner centred approaches do influence the improvement of teaching methodologies with a high composite mean of 3.73 and a low composite standard deviation of 0.78. This low standard deviation shows that most of the data is clustered around the mean making the result more reliable. The study has revealed that problem based learning has greatly improved respondents teaching strategies in their classroom, using

collaborative learning has made learning to be more engaging and interactive in their classroom and inquiry based learning has encouraged active learning and created interest among pupils in the respondent's classroom.

4.5 Integration of ICT in Teaching and learning influence on teaching methodologies

The respondents who participated in the study were asked to give their opinion on the influence of integrating ICT in Teaching and learning on improvement in teaching in public primary schools in Mombasa County. Based on statements on a scale of 1-5, where 1=strongly disagree (SD), 2 = disagree (D), 3 = neutral (N), 4 = agree (A) and 5 = strongly agree (SA). Results are presented in table 4.5.

Table 4.5: Integration of ICT in Teaching and learning influence on teaching methodologies

Items	Statements	SD	D	N	A	SA	Mean	SD
1	After the CDF workshop, I enjoy regularly using available ICT tools for teaching and learning in my school.	0 (0%)	1 (3.33%)	7 (23.33%)	22 (73.34%)	o (0%)	4.00	0.83
2	The use of the available technology tools has enhanced students understanding and created interest in learning.	0 (0%)	0 (0%)	7 (23.33%)	14 (46.67%)	9 (30%)	4.07	0.74
3	I would like to learn more other ways of how I can integrate ICT in teaching and learning.	0 (0%)	0 (0%)	1 (3.33%)	2 (6.67%)	27 (90%)	4.87	0.43
	Composite Mean/ Standard deviation						**4.31**	**0.61**

It was found that after the CDF workshop, teachers enjoy regularly using available ICT tools for teaching and learning in their schools. 22(73.34%) of the respondents agreed that they are

enjoying regularly using ICT tools for teaching and learning. The respondents also agreed that the use of the available technology tools has enhanced students understanding and created interest in learning. 14(46.67%) and 9(30%) of the respondents agree and strongly agree to this statement respectively.

On whether the teachers who took part in CDF would like to learn more other ways of how they can integrate ICT in teaching and learning, (6.67%) and 27 (90%) of the respondents who indicated that they agreed and strongly agreed respectively. This shows that the respondents developed a positive attitude towards infusing technology in their teaching and learning processes after the CDF workshop.

The hypothesis testing from the SPSS, the chi – square distribution table at 5 degrees of freedom and 95% confidence level shows a value of 11.07 against the calculated value of 24.4. Since the calculated value is higher, we reject the null hypothesis and conclude that, ICT integration in teaching and learning influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

In summary, the respondents agreed that ICT integration in teaching and learning influence the improvement of teaching methodologies with a composite mean of 4.31 and a composite standard deviation of 0.61. The study has revealed that after the CDF workshop, teachers enjoy regularly using available ICT tools for teaching and learning in their schools, the use of the available technology tools has enhanced students understanding and created interest in learning and that teachers would like to learn more other ways of how they can integrate ICT in teaching and learning.

4.6 Teacher lesson planning and the improvement of teaching methodologies

The respondents who participated in the study were asked to give their opinion on teacher's lesson planning on improvement in teaching methodologies in public schools in Mombasa County. Based on statements on a scale of 1-5, where 1 = strongly disagree (SD), 2 = disagree (D), 3 = neutral (N), 4 = agree (A) and 5 = strongly agree (SA). Results are presented in table 4.6 below:

Table 4.6: Teacher lesson planning influence on teaching methodologies

Item	Statements	SD	D	N	A	SA	Mean	SD
1	I dedicate most of the lesson time to pupils hands on activities for learning and this helps students to understand better.	3 (10%)	1 3.333%	0 (0%)	14 46.67%	12 (40%)	4.03	1.22
2	Evaluating the learning objectives after every lesson has resulted to more focused lessons and better learning outcomes.	0 (0%)	2 6.67%	19 63.33%	6 (20%)	3 (10%)	3.2	0.81
3	Once the lesson plan is prepared, I use it strictly without making any changes in class so as to remain focused.	23 76.67%	5 16.67%	0 (0%)	1 3.33%	1 3.33%	1.37	0.81
	Composite Mean/ Standard deviation						**2.87**	**0.7**

According to Table 4.6, majority of the respondents agreed that; they dedicate most of the lesson time to pupil's hands on activities for learning and this helps pupils to understand what they are learning better as shown by a mean score of 4.03.

A larger percentage of the respondents also indicated that evaluating the learning objectives after every lesson has resulted to more focused lessons and better learning outcomes were neutral as

shown by 19(63.3%) and 6(20%) respondents who indicated agree. This is depicted by a mean score of 3.2.

On whether once the lesson plan is prepared, respondents use it strictly without making any changes in class so as to remain focused, 23(76.67%) and 5(16.67%) strongly disagreed and disagreed respectively. This gave an average response that once the lesson plan is prepared; respondents do not follow it strictly but they actually make adjustments in the actual lesson delivery. This is shown by a mean score of 1.37 indicating that the respondents do not use teacher lesson plans as rigid documents. The composite mean of 2.87 further shows that the respondents were neutral that teacher lesson planning has an influence on learning.

In testing the hypothesis, the chi – square distribution table at 9 degrees of freedom and 95% level of confidence shows a value of 16.92 against the calculated value of 48. Since the calculated value is higher, we reject the null hypothesis and conclude that teacher-lesson planning influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

In summary, the respondents agree that they dedicate most of their lesson time to pupils hands on activities. The respondents also agree that they evaluate learning objectives after each lesson and this has resulted into more focused lessons. The respondents also indicated that they do not use lesson plans as rigid documents but as guides that can be adjusted during the lesson delivery.

4.7 Teacher-Learner Communication and the improvement of teaching methodologies

The respondents who participated in the study were asked to give their opinion on teacher learner communication on improvement in teaching in public primary schools in Mombasa County. Based on statements on a scale of 1-5, where 1 =strongly disagree (SD), 2 = disagree (D), 3 = neutral (N), 4 = agree (A) and 5 = strongly agree (SA). Results are presented in table 4.7.

Table 4. 7: Teacher-Learner Communication and teaching methodologies

Items	Statements	SD	D	N	A	SA	Mean	SD
1	Interacting with my pupils outside class has increased trust and hence better participation in class.	0 (0%)	1 (3.33%)	0 (0%)	0 (0%)	29 (96.67%)	4.9	0.55
2	Pupils in my class have a platform to give me feedback and this has created a friendly classroom environment.	3 (10%)	5 (16.67)	4 (13.33%)	12 (40%)	6 (20%)	3.43	1.28
3	My timely and consistent feedback on students' work has helped to improve on learning outcomes.	0 (0%)	0 (0%)	1 (3.33%)	9 (30%)	20 (66.67%)	4.63	0.56
	Composite Mean/ Standard deviation						**4.32**	**0.69**

On whether the teachers' interaction with pupils outside class has increased trust and hence better participation in class, the respondents strongly agreed that interacting with their pupils outside class has increased trust and hence enhanced active participation in class with 29(96.67%) of the respondents strongly agreeing.

Many respondents were neutral with a mean of 3.43 that pupils in their class have a platform to give them feedback and this has created a friendly classroom environment. There was a distribution in the responses with those agreeing and strongly agreeing at 12(40%) and 6(20%) respectively.

Respondents timely and consistent feedback on students' work has helped them to improve on learning outcomes as shown by those who agree 9(30%) and those who strongly agree 20(66.67%)) with a mean of 4.63.

The study revealed that teacher learner communication improves teaching methodologies with an average of 4.32 of the respondents agreeing and a low standard deviation of 0.56 that show most of the data being close to the mean.

From the hypothesis testing, the chi – square distribution table at 6 degrees of freedom and 95% level of confidence shows a value of 12.59 against the calculated value of 20.87. Since the calculated value is higher, we reject the null hypothesis and conclude that, Teacher-Learner communication influences the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

Since the objective was also to examine the extent to which the teacher learner communication influences the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, the researcher computed the correlation using the Pearson's correlation coefficient. The following values were obtained 0.634, 0.945, 0.941 for the relationships between interacting with pupils outside class and the improvement of teaching methodologies, pupils' platforms to give feedback strategies and the improvement of teaching methodologies, timely and consistent feedback and the improvement of teaching methodologies respectively. The researcher therefore concluded that there is a strong positive correlation between Teacher-Learner communication and the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter entails the summary of key findings as presented in chapter four; discussions and conclusions are then drawn based on the findings and recommendations there-to. This chapter will thus be structured into summary of findings, discussions, conclusion, recommendations and areas for further research.

5.2 Summary of Findings

The study found that learner centred approaches on teaching methodologies influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya. It was revealed that problem based learning has greatly improved respondents' teaching strategies in their classroom, using collaborative learning has made learning to be more engaging and interactive in their classroom and inquiry based learning has encouraged active learning and created interest among pupils in the respondents' classrooms.

The study found that integrating ICT has a great positive influence on the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya. The respondents agreed that this has among the greatest effects in the 21st century learning.The study has revealed that after the CDF workshop on ICT, teachers who took part in CDF enjoy regularly using available ICT tools for teaching and learning in their schools. The study also revealed that the use of the available technology tools has enhanced students understanding and sparked interest in learning activities. Teachers indicated that they would like to learn more other ways of how they can integrate ICT to better the teaching and learning process showing a positive attitude towards teaching with technology.

The study found that the teacher lesson planning has some influence on the improvement of teaching methodologies with the majority being neutral about this. Thus teacher lesson planning methodologies influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya although not significantly. Majority of the

respondents agreed that; during the lesson they dedicated most of the lesson time to pupil's hands on activities for learning and this helps students to have a better understanding in their learning. Respondents indicated that evaluating the learning objectives after every lesson has resulted to more focused lessons and better learning outcomes were neutral thus did not have any effect. Teachers however indicated that they do not strictly follow their lesson plans since they believed that learning is flexible and can be affected by many unforeseen circumstances during the actual lesson delivery.

The study found that teacher learner communication influences the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya. Interaction with students outside class has increased trust and hence better participation in the classrooms of the respondents. The study noted that teachers provide a platform for the students to give them feedback thus creating a friendly environment. It also noted that teachers' timely and consistent feedback on students' work had helped them to improve on learning outcomes.

5.3 Discussions

From the information from the field about the extent to which learner centred approaches influence the improvement of teaching methodologies, majority of the teachers agree that the three strategies; PBL, collaborative learning, and IBL have improved on the way they conduct teaching and learning. The Karl Pearson's correlation coefficient for the three is 0.893, 0.945 and 0.935 respectively indicating a strong positive correlation between the learner-centred teaching methods and the improvement of teaching and learning. This agrees to Ganyaupfu (2013) discussion that student-centred approach being frequently used today by teachers in their teaching methodologies has been found to promote interest, analytical research, critical thinking and enjoyment among students.

The analysis of the data about the integration of ICT in teaching and learning indicated that 73.34% teachers of the teachers who participated in the CDF enjoyed using ICT tools that were available in their schools for teaching and learning. From the 90% of the respondents who strongly agreed that they would like to learn even more ways that they can use the ICT tools in teaching, it shows the change of attitude and the willingness of the respondents to be continuous learners. This is in line with the recommendation of Obonyo (2013) that the significant changes

in technology and education implies that teachers need sufficient training on how to use ICT tools in a way that adds value in teaching and learning in schools.

Information collected from the field about teacher lesson planning indicates a lot of variations. While 76.67% of the respondents indicated that they do not strictly adhere to their lesson plans, only 10% strongly agreed that they evaluate learning objectives at the end of every lesson and this has resulted to better learning outcomes. While this analysis show that the lesson planning documents are important, it also shows that different circumstances in class during the actual teaching also affect the plans. Majority of the teachers indicated that they dedicate most of the lesson time to hands on activities and they agreed that this has helped students to improve on their understanding of concepts. The findings of this study agree to Hopkins (2012) argument that teachers should think about learning objectives and the expected learning outcomes well in advance for a successful lesson plan.

Concerning teacher-learner communication, 96.67% of the respondents strongly agreed that after they attended the training, they have now been interacting with their pupils outside class and this has enhanced active participation in class. 66.67% of the respondents strongly agreed that their timely and consistent feedback on students' work and this has bettered their learning. This study finding agrees with the findings of Gunlock (2014) that providing feedback helps students to become more engaged and self-motivated in their learning. In this study however, it was found out that for feedback to be helpful it needs to be consistent and timely.

5.4 Conclusions

Based on the study findings in chapter four, the study concludes that collaborative discussion forum project has influence on the improvement of teaching methodologies among teachers in public primary schools in Mombasa County Kenya.

The study concludes that learner centred approaches on teaching methodologies influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

The study concludes that integrating ICT in teaching and learning has a great positive influence on the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

The study concludes that teachers' lesson planning does have an influence on the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

The study also concludes that teacher learner communication on teaching methodologies influence the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.

5.5 Recommendations

i. The study recommends that, to ensure there is improvement of teaching methodologies in primary schools in Mombasa County, Kenya, teachers should adopt learner centred approaches.
ii. The study also recommends that teachers should be consistently trained on the infusion of ICT in teaching and learning since it improves the teaching methodologies among teachers in primary schools in Mombasa County, Kenya.
iii. The study recommends that, for there to be an improvement of teaching methodologies among teachers in public schools in Mombasa County, Kenya, teachers should dedicate most of the lesson time to pupil's hands on activities and be flexible on the use of lesson plan documents.
iv. The study recommends that, for there to be an improvement of teaching methodologies among teachers in public schools in Mombasa County, Kenya, teachers should increase the teacher learner communication strategies.
v. The study also recommends that the government should liaise with SESEA to provide professional training through short term courses and peer-mentorship to all the primary school teachers since this improves the teaching methodologies.
vi. The study recommends that SESEA should make this training for teachers' capacity building through short term courses continuous rather than a one off project.

5.6 Suggestions for Further Studies

The study suggests further reading on the influence of collaborative discussion forum project on improvement of teaching methodologies among teachers in public primary schools in Mombasa County Kenya. The study suggested that a further research be conducted on:

i. Influence of SESEA professional training projects in other parts of the region.
ii. Legal and regulatory framework for partnership between the government and other educational organisations in offering short term courses.
iii. Improvement of students' performance through collaborative discussion forums in the public primary schools in Mombasa County.
iv. The influence of SESEA long term courses on teaching and learning.

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APPENDICES

Appendix 1: List of schools that participated in the Collaborative Discussion Forum Project

DFATD - CDF 2013-2014
Collaborative Discussion Forums 2013-2014
MAINLAND
WEST Cohort -1 Teachers per school

COUNTRY	DISTRICT	ZONE	CLUSTER	SCHOOL
MOMBASA	CHANGAMWE	CHAANI	MWIJABU	**BOMU**
MOMBASA	CHANGAMWE	MIKADINI	MAGONGO	**CHANGAMWE**
MOMBASA	CHANGAMWE	MAGONGO	MIKADINI	**GOME**
MOMBASA	CHANGAMWE	MAGONGO	MIKADINI	**KIPEVU**
MOMBASA	CHANGAMWE	CHAANI	MWIJABU	**KWA HOLA**
MOMBASA	CHANGAMWE	CHAANI	MIRITINI	**KWA JOMVU**
MOMBASA	CHANGAMWE	MIRITINI	MIKADINI	**KWASHEE**
MOMBASA	CHANGAMWE	MIKADINI	MAGONGO	**MAGONGO**
MOMBASA	CHANGAMWE	CHAANI	MWIJABU	**MIKADINI**
MOMBASA	CHANGAMWE	CHAANI	MWIJABU	**MIKINDANI**
MOMBASA	CHANGAMWE	CHAANI	MIRITINI	**MIRITINI WORLD BK**
MOMBASA	CHANGAMWE	CHAANI	MIRITINI	**MIRITINI**
MOMBASA	CHANGAMWE	CHAANI	MIRITINI	**MRERONI**
MOMBASA	CHANGAMWE	CHAANI	MWIJABU	**MWIJABU**
MOMBASA	CHANGAMWE	MIKADINI	MAGONGO	**NOOR ORPHANS**
MOMBASA	CHANGAMWE	CHAANI	MWIJABU	**PORT REITZ**
MOMBASA	CHANGAMWE	CHAANI	MAGONGO	**RIDHWAA NURSERY**
MOMBASA	CHANGAMWE	CHAANI	MIKINDANI	**TAQWA NURSERY**
MOMBASA	CHANGAMWE	CHAANI	MWIJABU	**UMOJA**
MOMBASA	CHANGAMWE	CHAANI		**IRSHAD NURSERY**
MOMBASA	CHANGAMWE	MIKINDANI	MIRITINI	**AMANI**
MOMBASA	CHANGAMWE	MIKINDANI	MAGONGO	**ST. LWANGA**
MOMBASA	CHANGAMWE	MIKINDANI	MAGONGO	**ST MARY'S**

Collaborative Discussion Forums 2013-2014

NORTH Cohort-1 teacher per school

COUNTRY	DISTRICT	ZONE	CLUSTER	SCHOOL
MOMBASA	KISAUNI	BAMBURI	MTOPANGA	**BAMBURI**
MOMBASA	KISAUNI	BAMBURI	MLALEO	**FATHIL-ADHYM**
MOMBASA	KISAUNI	KENGELENI	KONGOWEA	**FRERETOWN**
MOMBASA	KISAUNI	BAMBURI	MTOPANGA	**KADZANDANI**
MOMBASA	KISAUNI	BAMBURI	MTOPANGA	**KEIMBENI ESTATE**
MOMBASA	KISAUNI	BAMBURI	MTOPANGA	**KISAUNI BAPTIST**
MOMBASA	KISAUNI	BAMBURI	UTANGE	**MAJAONI**
MOMBASA	KISAUNI	KENGELENI	KONGOWEA	**MAWENI**
MOMBASA	KISAUNI	KISAUNI	BAMBURI	**MLALEO**
MOMBASA	KISAUNI	KSAUNI	KENGELENI	**KISAUNI PRI**
MOMBASA	KISAUNI	KSAUNI	KENGELENI	**KONGOWEA PRI**
MOMBASA	KISAUNI	BAMBURI	BAMBURI	**CONCORDIA**
MOMBASA	KISAUNI	BAMBURI	BAMBURI	**UTANGE**
MOMBASA	KISAUNI	KONGOWEA	KENGELENI	**AZHAR SHARIFF**
MOMBASA	KISAUNI	BAMBURI	BAMBURI	**ISTIMAR NURSERY**
MOMBASA	KISAUNI	BAMBURI	BAMBURI	**SIDIK NURSERY**
MOMBASA	KISAUNI	BAMBURI	BAMBURI	**RAHMA NURSERY**
MOMBASA		KIKAMBALA		**NGOLOKO NURSERY**

Collaborative Discussion Forums 2013-2014

South Cohort-1 teacher per school

COUNTRY	DISTRICT	ZONE	CLUSTER	SCHOOL
MOMBASA	LIKONI	LIKONI	LIKONI	**INSPIRATIONS**
MOMBASA	LIKONI	LIKONI	FERRY	**JAMVI LA WAGENI**
MOMBASA	LIKONI	MTONGWE	MTONGWE	**KENYA NAVY**
MOMBASA	LIKONI	LIKONI	LIKONI	**MAJI SAFI**
MOMBASA	LIKONI	LIKONI	LIKONI	**MRIMA**
MOMBASA	LIKONI	MTONGWE	MTONGWE	**MTONGWE**

MOMBASA	LIKONI	LIKONI	FERRY	**PUMA**
MOMBASA	LIKONI	LIKONI	LIKONI	**VYEMANI**
MOMBASA	LIKONI	LIKONI	MTONGWE	**LONGO**
MOMBASA	LIKONI	LIKONI	LIKONI	**SHIKA ADABU**
MOMBASA	LIKONI	LIKONI	LIKONI	**RASUL AKRAM NURSERY**

Collaborative Discussion Forums 2013-2014

Island Cohort-1 teachers per school

COUNTRY	DISTRICT	ZONE	CLUSTER	SCHOOL
MOMBASA	MSA ISLAND	MBARAKI	SERANI	**AGA KHAN NURSERY**
MOMBASA	MSA ISLAND	MBARAKI	SERANI	**AGA KHAN PRIMARY**
MOMBASA	MSA ISLAND	TONONOKA	TOM MBOYA	**CENTRAL GIRLS**
MOMBASA	MSA ISLAND	MVITA	ZIWANI	**FAHARI**
MOMBASA	MSA ISLAND	MBARAKI	SERANI	**GANJONI**
MOMBASA	MSA ISLAND	TONONOKA	TOM MBOYA	**KIKOWANI**
MOMBASA	MSA ISLAND	MAJENGO	MAJENGO	**MAJENGO**
MOMBASA	MSA ISLAND	MAJENGO	MAJENGO	**MAKUPA**
MOMBASA	MSA ISLAND	MBARAKI	SERANI	**MBARAKI GIRLS**
MOMBASA	MSA ISLAND	TONONOKA	TOM MBOYA	**MBEHENI**
MOMBASA	MSA ISLAND	MBARAKI	SERANI	**MOMBASA PRIMARY**
MOMBASA	MSA ISLAND	ZIWANI	SPARKI	**RONALD NGALA**
MOMBASA	MSA ISLAND	MBARAKI	SERANI	**SERANI**
MOMBASA	MSA ISLAND	MBARAKI	SERANI	**STAR OF THE SEA**
MOMBASA	MSA ISLAND	ZIWANI	SPARKI	**TUDOR**
MOMBASA	MSA ISLAND	ZIWANI	SPARKI	**ZIWANI BOYZ**
MOMBASA	MSA ISLAND	ZIWANI	MVITA	**BURHANIYA**
MOMBASA	MSA ISLAND	ZIWANI	MVITA	**ALIBIN TALIB NUR**
MOMBASA	MSA ISLAND	TONONOKA	TOM MBOYA	**BONDENI GIRLS**

MOMBASA	MSA ISLAND	TONONOKA	TOM MBOYA	**TOM MBOYA**
MOMBASA	MSA ISLAND	MBARAKI	SERANI	**SACRED HEART**

Appendix 2: Transmittal Letter

Dear Respondent,

RE: REQUEST FOR DATA COLLECTION

Having participated in the Collaborative Discussion Forum project, you have been randomly selected to participate in this study which is investigating the "influence of Collaborative Discussion Forum Project on the improvement of teaching methodologies among teachers in public primary schools in Mombasa County, Kenya.". I kindly request you to fill the attached questionnaire to generate data required for this study. This information will be used purely for academic purposes and will be treated in confidence and will not be used for publicity. Neither your name nor the name of your institution will be mentioned in the report.

Upon request, a copy of the final report will be availed to you.

Your assistance and cooperation will be highly appreciated.

Thank you in advance.

Yours faithfully,

_____

Johnson Monari

University of Nairobi

Appendix 3: Research Questionnaire

Research Questionnaire

Section 1: General Information (CDF Participant)

Please use a tick (√) to indicate your answer where options are provided. Write your response where there are no options.

1. What is your gender?
   Male ( )
   Female ( )
2. What age category do you belong in?
   Below 25 years ( )
   26-30 years ( )
   31-35 years ( )
   36-40 years ( )
   41-45 years ( )
   46 years or above ( )
3. For how many years have you been teaching? _____
4. Which subjects do you teach? _____
5. What was the rate of your attendance of the Collaborative Discussion Forum?
   A few sessions ( )
   Some sessions ( )
   Most of the sessions ( )
   All of the sessions ( )
6. What factors would you say have contributed to improving your teaching methodology?
   _____
   _____
   _____

Section 2: STUDY INFORMATION

Please use the key 1-5 for all sections outlined in the questionnaire to show the extent to which you agree with the statements.

1) Strongly disagree 2) Moderately disagree 3) Neutral

4) Agree 5) Strongly agree

A. Learner Centred Approaches

	1	2	3	4	5
7. Problem based learning has greatly improved my teaching strategies in my classroom.					
8. Using collaborative learning has made learning to be more engaging and interactive in my classroom.					
9. Inquiry based learning has encouraged active learning and created interest among pupils in my classroom.					

Do you use any other techniques that encourage learner centered approaches?
Yes... (If yes explain)
No ...
.....
.....

B. ICT in Teaching and Learning

	1	2	3	4	5
10. After the CDF workshop, I enjoy regularly using available ICT tools for teaching and learning in my school.					
11. The use of the available technology tools has enhanced students understanding and created interest in learning.					
12. I would like to learn more other ways of how I can integrate ICT in teaching and learning.					

C. Teacher Lesson Planning

	1	2	3	4	5
13. I dedicate most of the lesson time to pupils hands on activities for learning and this helps students to understand better.					
14. Evaluating the learning objectives after every lesson has resulted to more focused lessons and better learning outcomes.					
15. Once the lesson plan is prepared, I use it strictly without making any changes in class so as to remain focused.					

D. Teacher –Learner Communication

	1	2	3	4	5
16. Interacting with my pupils outside class has increased trust and hence better participation in class.					
17. Pupils in my class have a platform to give me feedback and this has created a friendly classroom environment.					
18. My timely and consistent feedback on students' work has helped to improve on learning outcomes.					

Do you have any other comments? If yes explain

Yes...

No ...

.....

.....

Thank you for your participation