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Continuous Teacher Professional Support for Effective Implementation of Basic Education Curriculum Framework

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Abstract

Continuing teacher professional support in curriculum implementation is critical in Kenya following the development of the Basic Education Curriculum Framework (KICD, 2017). The new curriculum is competency-based and emphasizes inquiry learning approaches. The 8-4-4 curriculum which it is planned to replace had been implemented mostly applying transmission approach and children were reported to be attending primary school and not learning (KNEC, 2010 & UWEZO, 2013). Teacher quality determines the quality of curriculum implementation and one means of ensuring teacher quality is by making continuing teacher professional development available for teachers. The objective of this study was to determine teacher preparedness for the implementation of the new curriculum and whether there was any established continuing teacher professional development programme for sustained teacher quality. The study sought to find out whether the pre-service and in-service training prepared teachers adequately for implementation of the new curriculum; whether teachers had adequate teaching-learning resources and whether they had any existing continuing teacher professional development programme. The Pedagogic Content Knowledge (CPK) model by Desimone (2009) guided this study. A case study was conducted in a public primary school in Narok County. The School was selected because it was used to pilot the new competency-based curriculum. It has 500 pupils and 15 teachers. All the 15 teachers in the school participated in this study. Data was collected using a questionnaire. Most 13(86.7%) of the teachers agreed that the pre-service and in-service courses did not prepare them adequately to implement the new curriculum. Another 12(80%) of the teachers did not have enough pupils and teachers' books; while 11(73%) did not know how to extract teaching materials from other sources besides class textbooks. However, about 7(46.6%) used a laptop to teach, and 9(60%) used a cell phone to create learning activities. All the 15 (100%) teachers agreed that continuing professional development programme was not established. Another 10(66%) agreed that they needed professional development programme and preferred distance learning mode. Teachers were not adequately prepared for Implementation of the new curriculum. It was recommended that teachers need to be provided with technology supported, continuous distance learning professional development programme for curriculum implementation incorporating inquiry teaching approaches. Online Open Educational Resources would also cater for inadequate teaching-learning resources.

Keywords: Curriculum, Implementation, Competency-Based, Professional Support

Introduction

In an effort to address the challenges the country faces in the 21st century, and the obligations of the Sustainable Development Goal Number 4, Kenya developed the Basic Education Curriculum Framework (BECF). The SDG 4 envisions inclusive and equitable quality education that promotes lifelong learning for all. The new curriculum is designed to nurture every learners' potential and enable each of them to become engaged, empowered and ethical citizen (the Republic of Kenya, 2017). This calls for quality teaching, resources and an enabling school

environment that would lead to active classroom practice. Active, inquiry teaching approaches would realize the core competencies clearly spelt out in the Basic Education Curriculum Framework (BECF). The core competencies include critical thinking and problem solving, communication and collaboration, creativity and imagination, digital literacy, self-efficacy, citizenship and learning to learn. Further, in order to realize the vision of the Basic Education Curriculum reforms, there is a need for teachers to be extremely conversant in content and skills. Teachers will be required not to be just computer literate but also to be able to use the ICTs as a teaching-learning resource to make learning more engaging. Teachers also need to be reflective professionals with extra improved skills and confidence in a variety of current instructional skills such as coaching, reflection, facilitating, and mentoring which require to be developed and supported. Teachers will then act as facilitators and role models who inspire every learner to be active learners and to apply the acquired knowledge in their real-life situations. This will be a daunting task for teachers if they have never experienced active learning and have not had the opportunity to observe teachers using active learning in classrooms.

The Basic Education Curriculum Framework (BECF) is famously called Competency Based Curriculum (CBC) developed to fill the gap in the 8-4-4 system of education named reflecting the eight years of primary education, four years' secondary education and minimum four years' university education. The CBC had been developed to prepare a learner who would be self-reliant (Republic of Kenya 2017). This was based on a study by Kenya Institute of Education in 2009 which had revealed that the 8-4-4 curriculum and its implementation were teacher-centered preparing learners for examinations (the Republic of Kenya, 2017); the curriculum was overloaded, and teachers lacked teaching-learning resources. Facilities were inadequate including classrooms which were too congested, and teachers were insufficiently prepared to implement curriculum (KIE, 2009). Learners were not learning (UWEZO, 2013). Only half of the children in Standard 1-8 aged 6-16 years acquired the highest numeracy competency expected of Standard two learners. Achievements in both reading and numeracy were below the standardized mean (Kenya National Examinations Council (KNEC, 2010). The curriculum did not provide for the recognition of the learners' potential, gifts, and talents. The learning achievement measured in national examination result was very low.

The Basic Education Curriculum Framework was introduced in 2017 in a phase in phase-out strategy. It is, however, to be implemented by the same teachers who had implemented the 8-4-4 curriculum who could easily employ teacher centred teacher approaches if they are not guided on learner-centred teaching approaches. The teachers in colleges are trained in the same old way, and those practicing would require significant retraining. The main challenge is the decision on the mode of retraining to be employed for the teachers. The core competencies of the new curriculum are Communication and Collaboration, Self-efficacy, Critical Thinking, and Problem Solving, Creativity and Imagination, Citizenship, Digital Literacy and Learning to Learn (the Republic of Kenya, 2017). Values will be emphasized, and learners will be provided the opportunity to develop and apply their skills and knowledge. These require learner engagement in learning. The former classes 1-3 were changed to grades 1-3, and they take the new curriculum while class 4-8 continue with the 8-4-4 system of education which will be phased out yearly progressively.

Interventions in Curriculum Delivery

Delivery of quality education remains a challenge (Glennerster, Kremer, Mbiti & Takavarasha, 2011). The Uwezo report (2010) established that there were unsatisfactory levels of learning among primary school children. This led to interventions such as TUSOME (USAID, DFID & MOE, 2016). TUSOME (Kiswahili meaning 'Let's Read') and Primary Education Development Project (PRIEDE) are designed to improve the learners' literacy and numeracy skills respectively for the early years' education in grades 1,2 and 3.

TUSOME is a National Literacy programme funded by USAID targeting more than 60,000 teachers in Public primary schools in grades 1 to 3 and more than 5.4 million in grades 1, 2 and 3 pupils for improvement of literacy instruction outcomes (USAID, DFID & MOE, 2016). The programme is planned to improve teacher capacity in English and Kiswahili methodologies. It also provides pupils' textbooks, homework books and teachers' guides to grade 1 and 2. In addition, there is the provision of teacher pedagogical support and supervision by the educational officers, curriculum support officers, and head teachers, through classroom lesson

observations. This would enhance the capacity of the education sector towards improved literacy learning outcomes in the primary schools. However, in the midst of its implementation teachers are faced with the challenge of implementing CBC.

In addition, the PRIEDE implementation is also ongoing. The project is funded by Global Partnership for Education (GPE), supervised by World Bank and it is implemented by Ministry of Education in all public primary schools and public teacher training colleges in Kenya (World Bank, 2016). The project has four components among them improvement of early grade Mathematics competencies of learners through in-service training of grades 1,2 and 3 teachers and head teachers on Early Grade Methodologies (EGM). In addition, there is the provision of Early Grade Mathematics pupils' textbooks for grade1,2 and 3 and teachers' guides. The education officers and Curriculum Support officers offer pedagogical support to the teachers during the classroom lesson observations. The head teachers too are expected to offer curriculum supervision and leadership to the teachers (MOE, 2016). All these aspects are geared towards the improvement of early grade mathematics competencies among the learners and ensuring sustainability of quality education in the classroom, and thus similar intense intervention is required for competency-based curriculum implementation. In addition, the teachers need adequate preparation on how to infuse the competency-based curriculum competencies and values in the teaching of all the learning areas to achieve quality learning outcomes.

Educational Resources for teaching and learning

Educational resources are critical in supporting teaching and learning. They appeal to the natural body senses and make abstract concepts concrete and aid learning. The more senses the resources appeal to, the better the learning. Resources help the teacher to facilitate learning by engaging learners, raising their curiosity and enthusiasm. Modern technologies enrich educational resources. There is need to prepare teachers as well as build their research capacity through the strengthening of distance learning programmes to ensure access of the latest technologies (Annan, 2005) which become handy in use of technology-supported educational resources. There is increased awareness of varieties of school-based modes of teacher education through the use of Information Communication Technologies and the use of open educational resources (Moon, 2007). These could be used to enhance teacher training structures to offer articulation between theory and practice and ensure teachers are effective, reflective practitioners. In addition, high-quality Open Educational Resources (OER) are accessible and could improve the quality of education at all levels (Kanwar, Kodhandaran & Umar, 2010).

Teachers could be more innovative and maneuver technologies innovatively for use in class for increased learner achievement in specific classroom contexts. Gelonka (2014) reviewed technology and found good evidence to support the fact that technology could make a difference in developing the effective skills which spice up life which is the essence of education. There are a variety of technologies that could spice up teaching and learning such as videos, online forums, online video, case study discussions, smartcard, texting, email, online communities of learning offered by the Teacher Education in Sub Saharan Africa (TESSA) OERs which is a commendable opportunity for all teachers to explore.

Pre-service teacher professional Development and Continuing Professional Development

The Pre-service teacher training tends to fit the Lewin & Stuart (2002) criticism that primary teacher training college tutors do not generally have much professional experience of the primary school classroom. In Kenya, it is a two-year residential training conducted in primary teacher training colleges. The Minimum entry to the course is grade 'C' plain in the Kenya Certificate of Secondary Education (KCSE). This is an average grade where 'A' is the highest and 'E' the lowest. It is a concurrent course where the academic and professional activities are covered at the same time, and the teaching approach is mainly transmission (Mwangi, 2011). The transmission teaching approach would not be appropriate for early implementation of Competency Based Curriculum. Further, Akyeampong, Pryor, Westbrook & Lussier (2011) observe that the pre-service course is majorly theoretical. In Kenya pre-service model of a primary school teacher training is only a 12 weeks teaching practice period when the student teacher practice in primary schools. The rest of the two year course time is

theoretical. In some primary schools, with a teacher shortage, the teacher trainees are made to fill in gaps in subjects with no teachers (Kisirkoi, 2014). Hence the trainees lack the expected basic mentorship. Most critical, the course allows specialization in either science or art based primary school teaching subjects, but a teacher may end up teaching any subject offered in the schools with a teacher shortage. In addition, there is a gap between what the initial teacher education curriculum aims to achieve and what the newly qualified primary teachers' graduates could potentially offer in a real classroom situation (Akyeampong, Pryor, Westbrook & Lussier, 2011). They lack skills to handle actual classroom realities when they report to schools; due to the teacher shortage, they may not be provided initial induction.

Without a doubt teachers are significant in the delivery of quality education, consequently, their prominence in the learning process cannot be overemphasized. According to UNESCO (2005), there is a connection between low pupil achievement and teacher competency. Thus, the need for Kenyan policy initiatives to pay more attention to the knowledge, skills, and competencies for teacher trainees in the primary teacher training colleges to ensure that the pre-service teachers are fully empowered and ready to implement the Competency-Based Curriculum. They also need to be continually supported through quality in-service training.

Further, even the best pre-service education cannot prepare trainees enough to last the entire teaching career due to diverse classroom realities and societal dynamism, hence the need for quality continuing teacher professional development can't be overemphasized. Continuing Professional Development (CPD) makes a lot of difference to teachers' pedagogical knowledge and skill which eventually results in enhanced pupils learning outcomes (Dembélé & Lefoka, 2007). Paying little attention to CPD could be part of the explanation for the massive failure of students in national examinations as reported by Aduda and Wanzala (2017) and poor learning outcomes where students attend school without learning (KNEC, 2010 & UWEZO, 2013). Hence there are some semi-illiterate or complete illiterate school graduates.

Continuing Teacher professional development is crucial for sustained improvement in learner achievement. Changes in the classroom that result in learning outcomes depend on the classroom teacher, and this fact calls for continuing professional development of teachers (Borko, 2014). Children learning depends solely on what they do with the teacher in class. Quality of teaching in class has the greatest influence on learner learning achievement and learning outcomes (British Council, 2014). In teaching the critical issue is the learning achievement of the learners; what they know and can do and not just what the teacher knows and does. Classroom activities lead to students learning. The teacher's role is to facilitate children's learning. Quality of pedagogy by quality teachers most directly affect the quality of learning, and that should be the focus of continuing teacher professional development.

The learning outcome, following a quality curriculum, if well planned and guided would reflect the country's needs. In the long run, it would lead to the achievement of the country's goals and objectives. This requires quality teaching. Helping teachers to succeed in teaching and enabling children to learn is an investment in human capital (Borko, 2014). Quality education depends on quality continuing professional development to support teachers in class to implement new innovations as a result of a country's dynamism. It supports teachers to unlock their potential and facilitate children to learn. Teachers need the opportunity to refresh and enhance their skills throughout their professional life in high-quality professional development opportunity. This is because, in a lifetime of teaching, a teacher requires knowledge skills and behaviour that continuously develop and evolve as they work with changing generations with dynamic needs. The teachers need to develop the knowledge skills and emotional intelligence critical to good professional thinking, planning and practice with learners and colleagues throughout the phases of their teaching career. Teachers, therefore, require continuous professional development to enhance their knowledge and to develop new instructional structures (Borko, 2014). This is in recognition of the fact that what happens in the classroom between the teacher and the learner count highly for quality learning and result mainly from meaningful learner active engagement in their own learning. Needs of different classes may vary. Different subjects too have different needs in implementation strategy. This could lead to activities during teacher professional development to identify the different practical contexts and work out strategies

Continuing professional development for teachers through distance learning, especially with some online mode, would provide support and opportunity for teachers to not only access relevant teaching-learning resources but also models of quality teaching to emulate. They would access relevant support to enhance their preparedness in the implementation of Competency Based Curriculum in Kenya which they could modify to meet their classroom needs. The teachers would learn as they teach and practice their newly acquired skills.

Unfortunately, there appears to be inadequate preparation of practising teachers for competency-based curriculum delivery and existence of school-based continuing teacher professional development structure is questionable. There appears to be need to inform practice in the reforms in the teacher training policies and practice for improved teaching and learning that would culminate in improved learners' competencies, attitudes, and values which are significant in the realisation of Kenyan Vision, 2030 and SDG 4.

Statement of the Problem and objectives

There appeared to be a pedagogical gap in teacher implementation of curriculum in the classroom and most worrying in teachers who were meant to implement the newly introduced Basic Education Curriculum Framework known as Competency-based Curriculum which was meant to replace the 8-4-4 curriculum (the Republic of Kenya, 2017). The new curriculum requires active and inquiry learning approaches while the teachers had been used to transmission in an attempt to cover content and score high grades which could be part of the reason children attended primary school but were not learning (KNEC, 2010 & UWEZO, 2013). The Tusome programme and the PRIEDE project intervention even though they provided training in teaching methodology, the teachers were still not confident in the implementation of the Competency-Based Curriculum. The teachers in lower grades had participated in the piloting of the new curriculum but still verbally expressed lack of confidence in implementing the curriculum. Those in upper grades were also anxious about the newly introduced curriculum while they were not also quite good in implementing the 8-4-4 curriculum. That status necessitated the study from which this paper is based.

Objective and Guiding Concept

The main objective of this study was to determine teacher preparedness for the implementation of the new Curriculum. Specifically, the study sought to establish whether the pre-service and in-service training prepared teachers adequately for implementation of the new curriculum; find out whether there was any established continuing teacher professional development programme and to establish whether teachers had had adequate teaching-learning resources.

The Core Conceptual Framework by Desimone (2009) influenced this study. It explains that continuing teacher professional development increases teachers' knowledge, skills and positively impacts on teachers' attitudes and beliefs. This leads to the improvement of teachers' mastery of content and pedagogical skills. As a result, the teachers' instructional approaches are improved leading to improved learners learning outcomes. The model further stipulates that teachers during their own Continuing Professional Development learning, they should practice with activities which they will use in class with their learners. Teachers learn the way their learners learn. Therefore, during CPD they should learn and practice new knowledge and skills with their learners. The model explains that teacher professional development can only be said to be effective if its impact can be traced in the classroom as teachers teach and ultimately result in improved learning outcomes. The activities for teacher learning advocated by the model include in service, training, classroom observation, lesson demonstration, lesson development and use of teaching-learning resources.

This relates to this study where teachers require continuing professional development and need to learn as they teach. Their students immediately benefit as the teachers conduct activities for their own learning and lead to learners learning outcomes. The type of learning that meets the needs of the teachers expressed by the teachers could be distance learning which could be most enriched by online learning courses.

Methods and Materials

The methodology used in the study that resulted in this paper was a case study. It was conducted in a primary school selected because the school had been used to pilot test the Competency-Based Curriculum. The school just like the other public primary schools had also benefited from the implementation of the TUSOME and the PRIEDE projects in lower grades 1,2 and 3.

It has a population of 500 pupils and 15 teachers, and the student-teacher ratio is 34:1. The infusion of Competency-based curriculum competencies and values had been introduced in class 1,2 and 3. Class 4 to 8 continued with the 8.4.4 and will be phased out gradually. This means that all teachers, in the long run, will implement the competency-based curriculum. It was on this basis that all teachers were used in the study. All the 15 teachers, who included 4 early grade 1,2 and 3 teachers and the classes 4-8 teachers, participated in the study. Quantitative data was gathered from all the 15 teachers using a questionnaire developed by the researchers. In addition, qualitative data were collected through interview of one of the 4 teachers who taught lower grades. She also filled in the questionnaire. The teacher was selected for the interview because she had attended all the training sessions of the implementation of the newly introduced curriculum. She had also attended all the sessions of the training of implementation of the TUSOME programme and PRIEDE project. She also acted as the academics' school mentor.

Findings and Discussions

The objective of this study was to determine teacher preparedness for the implementation of the new Curriculum. Specifically, the study sought to establish whether the pre-service and in-service training prepared teachers adequately for implementation of the new curriculum; find out whether there was any established continuing teacher professional development programme and to establish whether teachers had adequate teaching-learning resources. Table 1 presents the findings.

Table 1: Findings on Preparedness of teachers to implement Curriculum including the competency Based. The table covers all the objectives.

Statement	Yes	%	No	%	Total %
I agree that I attended TUSOME, PRIEDE and CBC in-service training	4	100	4	0	100
I agree that my pre-service (initial teacher training) prepared me enough to teach in class	2	13.3	13	86.7	100
I agree that pre-service (initial teacher training) prepared me enough to teach CBC	0	0	15	100	100
I need continuous in-service training to teach in class	10	66.7	5	33.3	100
I need more training to teach CBC	15	100	0	0	100
I find the convenient type of training as where I leave my pupils and go away to learn in an organized training	5	33.3	10	66.7	100
I find the convenient type of training as where I do not leave my pupils and go away to learn but learn during my free time	10	66.7	5	33.3	100
The school has established teacher CPD structure	0	0	15	100	100
I find Distance learning, I learn as I teach my students is most the convenient for me	10	66.7	5	33.4	100
I understand the CBC competences	0	0	15	100	100
I can teach the CBC competences following TUSOME books	1	6.6	14	93.4	100
I have enough pupils textbooks for use when teaching	0	0	15	100	100
I have enough teachers references materials like guidebooks and Teachers handbook for teaching all learning areas	3	20	12	80	100
I know how to look for teaching materials from internet and from other reference materials	2	13.3	13	86.7	100

I use computer/laptop to teach in class	7	46.6	8	53.4	100
I search for internet online materials and activities to use for teaching my classes	3	20	12	80	100
I use my mobile phone to get online materials and activities for use in teaching and learning in my class.	9	60	6	40	100
I use flash disk to access and store teaching-learning resources	7	46.6	8	53.4	100
I use radio for teaching my class	5	33.3	10	66.7	100
I use TV for teaching my class	2	13.3	13	86.7	100
I use TESSA Open education Resources for teaching my class	1	6.6	14	93.4	100
I need more training to be able to use ICT tools and other resources for use in teaching	15	100	0	0	100

NB: Competency-Based Curriculum (CBC), Teacher Education in Sub Saharan Africa (TESSA).

Adequacy of Pre-service and in service in teacher preparation

The study sought out whether the pre-service and in-service training prepared teachers adequately for implementation of the new curriculum. All 15(100%) of the teachers disagreed that the pre-service training prepared them adequately to implement the school curriculum and 13(86.7%) disagreed that the pre-service training prepared them to implement the competency-based curriculum. Regarding whether in-service training prepared the teachers to implement the competency-based curriculum, all the 4(100%) lower grade teachers agreed that they attended the TUSOME, PRIEDE and CBC in-service training but all disagreed that they understood what the competences were about. A high number 14(93.4%) disagreed that they could teach CBC using TUSOME books. All 15(100%) agreed they need training to be able to implement CBC curriculum and 10 (66.7%) agreed they need more in-service training to teach their classes. Majority 66.7% prefer continuous professional development which take place as they continue teaching. They did not want the classes they teach to be left unattended.

The study also gathered qualitative data on the teacher preparedness to implement the curriculum from one of the grade 1,2,3 teacher selected because she was the academic adviser and she had attended all sessions of the in-service courses. The teacher reported as follows:

We were not adequately prepared to teach the competency-based curriculum. We were taken through a very short course of about 4 days but there was too much to be covered, and we could not explain most the competencies by the end of the course. We can't confidently teach the competency-based curriculum using the TUSOME books though we were advised to infuse CBC in TUSOME. In TUSOME, we were well prepared and feel confident to teach. We have been trained for at least 2 days every school holiday since 2016. We are now trying to use the material in TUSOME to teach the Competency-based curriculum, but we are not so sure. PRIEDE training has been good too. Anyway, we can't say we know how to teach this new curriculum.

Structure for Continuing Professional Development

All 15(100%) teachers disagreed that there was an established structure for continuing teacher professional development programme. This makes it challenging to for teachers to keep improving and upgrading their teaching knowledge and skills and meet the learner emerging needs. Teachers also lack effective opportunity to exchange ideas.

Teaching Learning Resources

The study also sought to establish whether the teachers had adequate teaching-learning resources. All the teachers 15(100%) disagreed that they had adequate student books and teachers reference books and materials. However, few are innovative in search for teaching resources as follows 1(6.7%) use TESSA Open Educational

resources, 9(60%) use cell phone and 2(13.3%) use the TV for teaching. This makes it challenging to use active learning and to engage learners in their own learning meaningfully. Few teachers identified ICT as a teaching-learning resource. All 15(100%) of the teachers would like to train on use of ICT as teaching-learning resources.

Conclusions

The study established that the teachers were not prepared for curriculum implementation including the implementation of the new Basic Education Curriculum Framework, popularly referred to as Competency-Based Curriculum. The teachers did not have adequate teaching-learning resources for reference and for the pupil's use and no structure for continuing professional development.

Recommendations

It is recommended that a structured continuing teacher professional development programme is set up because many teachers feel inadequately prepared to teach by the pre-service training and the one-off in-service training which both equally left the teachers feeling ill-prepared to implement curriculum and even more difficult to implement new curriculum programmes. There is no existing structured continuing professional development programme. Distance learning, an online course would enrich them in CPD because already 7(46.6) use computer and 9(60%) search online teaching materials. Therefore, teachers need to be trained to search for resources from the environment and the internet. There is also need to train more teachers on the use of ICT as a teaching-learning resource and search and use of online teaching-learning resources.

References

- Aduda, D., & Wanzala, O., (2017). *Uproar Grows over KCSE Mass Failure*. The Daily Nation Saturday 22nd P. 1-2.
- Akyeampong, Pryor, Westbrook & Lussier (2011), *Teacher Preparation and Continuing Professional Development in Africa; Learning to teach early reading and mathematics*. Centre for International Education, University of Sussex.
- Annan, K. (2005) *USD200 Million pledged for African universities, including better Internet access*. Retrieved March 20, 2009, from http://www.balancingact-africa.com/news/back/balancing-act_274.html
- Borko, L. (2014). *Professional Development and Teacher Learning. Mapping the Terrain*.
- British Council, 2014. *Innovations Continuing Teacher Professional Development of English Language Teachers edited by David Hayes*. London. 10 Spring Gardens. Sage publishers
- Dembele, M. & Lefoka, P. (2007). *Pedagogical renewal for quality universal primary education: Overview of Trends in Sub-Saharan Africa*. International Review of Education, 53: 531–553.
- Desimone, L. (2009). *Improving Impact Studies of Teachers' Professional Development: Towards Better Conceptualization and Measures*. Educational researcher. AERA. Educational Researcher Vol.38 No.3 pp181-199 <http://er.aera.net>
- Glennerster, Kremer, Mbiti & Takavarasha (2011). *Access and Quality in Kenyan Education System*.
- Kanwar, A., Kodhandaran. B, and Umar. A., (2010). Commonwealth of Learning. *Towards Sustainable OER: A Perspective from the Global South*.
- Republic of Kenya. (2017). *Basic Education Curriculum Framework. KICD*. Nairobi. Kenya Institute of Curriculum Development.
- KNEC. (2010). *Monitoring learner Achievement Study for Class Three in Literacy and Numeracy*. (NASMLA) Class 3 Study. Nairobi. KNEC
- KIE. (2009). *Summative Evaluation Report of Primary School Education in Kenya*. Nairobi. KIE
- Kisirkoi, F. (2014). *Effectiveness of Teacher Advisory Centres in Teacher Professional Development in Kenya*. Ph.D. thesis. Kenyatta University, Kenya
- Lewin K.M. & Stuart J. (2002). *Researching teacher education: New perspectives on practice, performance, and policy*, London, DFID.

- Moon, B. (2007). *Research analysis: Attracting, developing and retaining effective teachers: A global overview of current policies and practices*. UNESCO. Retrieved March 18, 2009, from <http://unesdoc.unesco.org/images/0015/001516/151685E.pdf>
- Mwangi, S. (2011). *Towards Context Based Learning as a Model for Pre-Service Primary Teacher Education in Kenya. A Case of Meru and Egoji TTC*: Ph.D. Thesis. Nairobi Kenyatta University.
- UNESCO. (2008). *EFA Global Monitoring Report. Education for All by 2015- Will we make it?* London. Oxford University Press
- UWEZO. (2013). Kenya Annual Report *Are our children learning?* Uwezo Kenya Report 2012.Nairobi. UWEZO
- UWEZO (2010). *Are our Children Learning? Annual Learning Assessment Report, Kenya 2010*: Nairobi, Kenya.
- World Bank (2016). Kenya PRIEDE Project Newsletter