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A Qualitative Case Study Of Novice Kenyan Primary School Teachers What Messages Transmitted By The Teacher Training Colleges Are Internalized And Applied?

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A QUALITATIVE CASE STUDY OF NOVICE KENYAN PRIMARY SCHOOL TEACHERS: WHAT MESSAGES TRANSMITTED BY THE TEACHER TRAINING COLLEGES ARE INTERNALIZED AND APPLIED?

by

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ABSTRACT

The method of instruction and the formal curriculum within two Kenyan teacher training colleges were studied in order to discover which messages regarding pedagogical practice are internalized within novice Kenyan primary school teachers and then actualized within their classrooms. An educational connoisseurship approach was utilized to give descriptive, interpretive, evaluative, and thematic insight. Three data streams were collected through interview, observation, and design evaluation in order to establish structural corroboration and internal validity. The study found that the method of instruction by the teacher training college faculty was teacher-centered and utilized lower order cognitive methodology. Though the formal curriculum design was strong, it too promoted lower cognitive processes. These two messages, teacher-centered pedagogies and lower cognitive processes, are being internalized and applied by the novice teachers and maybe affecting the quality of education in Kenyan schools. The results of this study suggest that pedagogical skills promoting higher cognitive levels should be developed through in-service training in Kenyan training colleges and primary schools as a way to improve the quality of education in this country.

To Him

from whom,

through whom,

and to whom

are all things

~

And to Steven

to whom I have been married

for only thirty-six years

~

And to the Rafiki staff

who serve the children of Africa

with great skill and sacrificial love

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LIST OF ACRONYMS

ADEA	Association for the Development of Education in Africa
APA	American Psychological Association
CA	Capability Approach
CBS	Kenya Central Bureau of Statistics
CD	Capacity Development
CESA	Comparative Educational Sector Analysis
CPD	Continuing Professional Development
CRE	Christian Religious Education
DFID	Department for International Development
EFA	Education for All
GER	Gross Enrollment Ratio
GMR	Global Monitoring Report
GOK	Government of Kenya
GSJ	Global Justice for All
HCT	Human Capital Theory
HTSG	Headteacher Support Group
ICE	International Conference on Education
IIEP	International Institute for Educational Planning
IMF	International Monetary Fund
IMP	Instructional Materials Program
INSET	In-service Training
IRE	Islamic Religious Education
IRF	Initiation, Response, Follow-up
JICA	Japan International Cooperation Agency
KCPE	Kenya Certificate of Primary Education
KCSE	Kenya Certificate of Secondary Education

KRT	Kenya Resource Teacher
KRC	Kenya Resource Center
MOEST	Ministry of Education, Science, and Technology
MPET	Master Plan of Education and Training
MUSTER	Multisite Teacher Education Research Project
NCATE	National Council for Accreditation of Teacher Education
NCTM	National Council for the Teacher of Mathematics
NCTQ	National Council of Teacher Quality
NER	National Enrollment Rate
NGO	Non Governmental Organization
NPBS	National Primary Baseline Study
NPEP	National Poverty Eradication Project
NRP	National Reading Board
PREST	Pre-service Education and Training of Teachers
PRISM	Primary School Management
SACMEQ	Southern African Consortium for Monitoring Educational Quality
SbTD	School Based Teacher Development
SET	Scales of Effective Teaching
SIDA	Swedish International Development Agency
SMASSE	Strengthening of Mathematics and Science in Secondary Education
SPRED	Strengthening Primary Education
SWOT	Strengths, Weaknesses, Opportunities and Threats
TAC	Teacher Advisory Center
TEAC	Teacher Education Accreditation Council
TRC	Teacher Resource Center
TTCs	Teacher Training College
UNESCO	United Nations Education, Scientific, and Cultural Organization

UNICEF	United Nations International Children's Fund
UPE	Universal Primary Education
USAID	United States Agency for International Development
USD	United States Dollar
USE	Universal Secondary Education

CHAPTER ONE: INTRODUCTION

Research Problem

In the 2009 Education for All Global Monitoring Report, UNESCO Director-General Koïchiro Matsuura commented,

> When financial systems fail, the consequences are highly visible, and governments act. When education systems fail the consequences are less visible, but no less very unequal opportunities for education fuel poverty, hunger, and child mortality, and reduce prospects for economic growth. That is why governments must act with a greater sense of urgency.
> (UNESCO, 2009a, para 3)

Almost ten years earlier at the 2000 World Education Forum in Dakar, all sub-Saharan African countries committed themselves to the policy of basic Education for All (EFA) by 2015, but at present most countries are far from reaching that target, some are so off track that it is projected they will not even meet it by 2040 (World Bank, 2008). However, the quantity of children attending school is a secondary consideration to the quality of education they are receiving. Merely filling chairs in a classroom is superfluous if no real education that promotes cognitive development and the accumulation of particular values, attitudes, and skills occurs.

While there is little consensus about what actually constitutes a quality education, the UNESCO (2005) Global Monitoring Report (GMR) provided both a comprehensive review of the evolution of the concept of quality and a framework for understanding, monitoring, and improving education quality. The central dimensions it identified as influencing the core processes of education systems are: (a) learner characteristics, (b) context, (c) enabling inputs,

(d) teaching and learning, and (e) outcomes. Figure 1 illustrates these dimensions and their relationships.[1] Learner characteristics refer to the capacities and experience of the student such as socioeconomic background, health, and place of residence. Context refers to the social milieu and its influence on education. Enabling inputs refers to material, human, and organizational resources and how they are managed. Teaching and learning includes dimensions such as time spent on learning, assessment methods, styles of teaching, and language of instruction. Outcomes refer to ways academic achievement is measured.

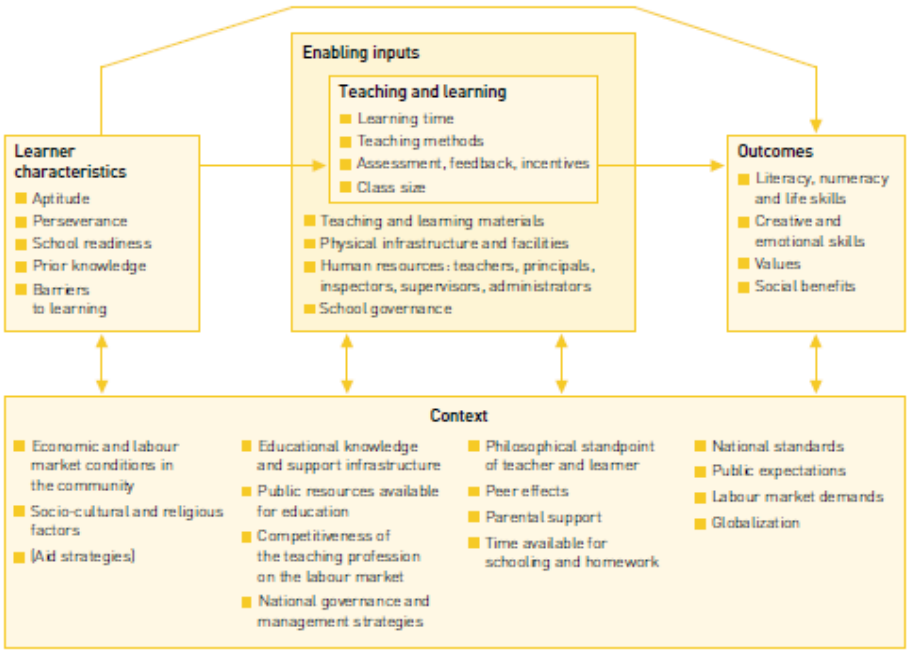

Figure 1. UNESCO (2005) GMR framework for understanding educational quality

The GMR (2005) singled out teaching and learning as the key arena for human development and change, especially when there are significant differences in students' backgrounds.[2] This distinction is further substantiated by the fact that of the top four countries

[1] *Note.* From EFA Global Monitoring Report 2005 (p.36), by UNESCO, 2005, Paris: UNESCO. Copyright by UNESCO. Reprinted with permission.

[2] The GMR (2005) based its judgment upon four influential studies: Coleman, Campbell, Hobson, McPartland, Mood, Weinfield, and York, (1966), Wang, Haertel, and Walberg (1994), Hattie (1992), and Crahay (2000).

found to offer a quality education (Finland, Korea, Canada, and Cuba) all placed a high value on teacher education and their continuous professional development (UNESCO, 2005). Thus, the quality of teachers—their education and continuing education and training—are essential to the achievement of a quality education. Central, therefore, to the success of EFA in developing nations such as Kenya is the development of teachers with sound pedagogical practices, a precept further advocated by Sifuna (1997), Abagi (1997), and Scheerens (2000).

Recent discourse analysis studies, however, have documented that the prevailing pedagogy in primary Kenyan classrooms consists of teaching methods that are dominated by formalistic methods, rote recitation, the transmission of facts, and teacher-centered classrooms (Pontefract and Hardman, 2005, Abd-Kadir and Hardman, 2007, and Hardman, Abd-Kadir, Agg, Migwi, Ndambuku, and Smith, 2009). Such pedagogy tends to promote passivity among students and can limit their activity to the memorization and recitation of facts. This could potentially place a barrier for teachers and learners from utilizing higher-order cognition. The Uwezo Kenya (2010) study evidenced that barrier through a learning assessment of Kenya's primary and secondary schools. Thirty-nine percent of six to 16 year olds could not read in English at a Standard Two level; 49% could not read in Kiswahili and 32% could not perform basic addition and subtraction problems (Uwezo Kenya, 2010). "The core lessons are clear. Lots of schooling is not the same as learning. Too many children in Kenya are not learning. We can no longer pretend that all is generally well, that good progress is being made" (Uwezo Kenya, 2010). All is generally not well with Kenya's education system, and the teacher-learner pedagogy may possibly be at the center of the maelstrom.

The purpose of this qualitative study was to chronicle the messages transmitted within Kenyan teacher training colleges (TTCs) through the formal curriculum and method of

instruction in order to discover which messages regarding pedagogical practice are internalized within novice Kenyan primary school teachers and then actualized in their classrooms. Five research questions framed the study:

1. What messages regarding classroom pedagogical practice does the faculty in Kenyan TTCs transmit through the formal curriculum of textbooks, course syllabi, and the program of study?
2. What messages regarding classroom pedagogical practice does the faculty at Kenyan TTCs transmit through the method of instruction?
3. Which messages are internalized within the novice primary Kenyan school teachers?
4. Which messages are actualized within the classrooms of the novice primary Kenyan school teachers?
5. What effect do these messages have upon the quality of education within Kenyan primary schools?

To answer these questions, a case study design using an educational connoisseurship approach was utilized to give descriptive, interpretive, evaluative, and thematic insight. The Kenyan Ministry of Education selected two colleges from the Central Province and made them accessible to the researcher. Three data streams were collected through observation, interview, and a program design evaluation to establish structural corroboration and internal validity.

Eighteen lecturers from the TTCs were selected by convenience sampling. The tutors were observed over a three-week period in order to compare the official curriculum with the actual curriculum. Factual information was recorded on six well-validated characteristics of effective teaching (Kukic, Fister, Link, and Freston, 1989, Bessai, 1990, Scheerens, 2000).

Eleven alumni from the two colleges were selected using snowball sampling and traced to the primary school in which they taught. The classroom observations were conducted over a three week period using the same observation protocol used in the college observations.

The classroom observations in the TTCs and primary schools were followed by qualitative interviews of both the college faculty and the primary teachers using the interview protocol. They were interviewed in English at one time, on a one-on-one basis. The interview included demographic information as well as their attitudes and beliefs about teaching.

In order to determine what knowledge is transmitted to the novice teachers through the formal curriculum, a design analysis of the program of study for primary teachers that included course syllabi, lectures, textbooks, and supplemental materials was performed.

Kenya has many hurdles to overcome in order to achieve the goal of a literate population. The adoption of EFA by 2015 has given thousands of children who had previously been denied schooling because of their socioeconomic status the opportunity to walk through a classroom door for the first time. However, it has not necessarily afforded them the opportunity to receive a quality education—one that promotes cognitive development and the accumulation of particular values, attitudes, and skills. The GMR (2005) placed teaching and learning as the key arena for human development and change, therefore developing teachers with sound pedagogical practices is essential for a quality education. Research into how teachers are trained in the TTCs, what they are taught, and how well the program of study addresses the realities of Kenyan classrooms, therefore, becomes imperative. This study addresses those issues and may possibly influence teacher training college programs, methods, and curriculum in Kenya and other developing nations.

CHAPTER TWO: REVIEW OF THE LITERATURE

Introduction

The horizon is a dividing line between the known and the unknown—between the seen and unseen; it is the limit or range of perception that distinguishes between the perceived and the imperceptible. The purpose of this literature review is to delineate the line on the horizon regarding Kenyan primary teacher training. It synthesizes what is currently known about how people learn to teach in Kenya in order to give a more accurate picture of the type and quality of pedagogic practices within that nation.

The review is organized into eight main sections: (a) context, (b) African indigenous education and culture, (c) historical development, (d) information infrastructure, (e) teacher training colleges, (f) teacher induction, retention, and appraisal, (g) classroom pedagogical practice and in-service training, and (h) summative discussion. The context section informs upon the necessity of a quality or effective primary education. The concept of quality or effectiveness is defined and the connection between a quality education and teacher education is made. The indigenous education section summarizes the characteristics and impact of indigenous education and the African culture upon cognition. The historical section traces the development of the current state of Kenyan education from pre-colonial to post-independence. The information infrastructure describes the state of Kenyan libraries and resource centers that are essential elements for effective education. The TTCs section provides insight into the college training of Kenyan primary teachers. The induction, retention, and appraisal section informs upon the transition of teachers from college to classroom. The classroom pedagogical practice and in-service training section chronicles what is currently known about how educators teach and what efforts have been made to improve their practices. The discussion and summary sections

synthesize the reviewed studies and advances several observations and suggestions for future research in developing nations such as Kenya.

Context

Like many sub-Saharan African countries, Kenya is a country of contrasts; it is modern and ancient, fertile and barren, pristine and polluted; it is filled with vitality and plenty yet riddled with disease and squalor. Kenya is also a land of challenge and inequity. Socioeconomically, the top 1% of the population receives nearly half of the national income while the bottom 20% of the population receives a mere 3.5% (UNESCO, 2004). Forty-seven percent of the 31 million Kenyans cannot meet their basic food requirements and subsist on less than one USD per day (UNESCO, 2004; Transparency International, 2009). Ranked one of the most corrupt nations in the world by Transparency International, widespread bribery and fraud in both private and public sectors has exacerbated the misery and poverty experienced by the majority of Kenyans (Transparency International, 2008). Billions of dollars in public and private funds are lost through embezzlement contributing to the widening gap between the rich and the poor (Transparency International, 2009). Additionally, the HIV/AIDS epidemic has propelled millions of orphans and vulnerable children into the workforce at a young age because they need to provide for themselves and their families (UNESCO, 2004). The result, from an educational viewpoint, is that a few years of primary education is the only schooling that the majority of Kenyan children have. The goals of developing a quality or effective primary education and improving teacher pedagogical practices, therefore, are critical for Kenya and developing nations like it.

The emphasis on quality or effectiveness, therefore, is of great importance. Yates (2007) has persuasively argued that long term poverty reduction and the enhancement of quality in

children's lives is predicated on a) the completion of the education cycle, and b) the reception of a quality education experience enabling them to become lifelong learners and contributing members of their society. Research by Scheerens (2000) and Verspoor (2003) suggests that within developing nations the influence of school on enhancing the quality of a child's life and their ability to learn is more important than the influence of the home and other factors such as good clothing, food, housing, water, and medical care. School and classroom intervention, then, is crucial to improving not only the quality of education in developing nations such as Kenya, but also to enhancing the quality of a child's life.

Research suggests that it is through professional development programs involving both the school heads and the teachers that address their knowledge, skills, dispositions, and commitment to create genuine teaching and learning that a quality education will be attained (Craig, Kraft, and du Plessels, 1998; Sheerens 2000; Anderson 2002; Dembele 2003; Verspoor 2003; O'Sullivan 2004). Additionally, Coleman, Campbell, Hobson, McPartland, Mood, Weinfield, and York (1966) pinpointed the teacher variable as having the greatest effect on school achievement among low socioeconomic status students, while Wang, Haertel and Walberg (1994) investigated twenty-eight factors that were most likely to help children learn and found that the two most prominent were related to the teacher. Hattie (1992) and Crahay (2000) reached similar conclusions. Central, therefore, to the success of the EFA project in developing nations such as Kenya is the quality education and training of teachers, a precept advocated by Sifuna (1997), Abagi (1997), and Scheerens (2000). What is the current state of Kenyan teacher training? Is primary teacher training equipping educators to be effective participants in producing a quality education experience for Kenyan children? To answer that question it is vital to

understand the roots of African indigenous education as well as the history of the Kenyan education experience—how and why it has developed as it has.

African Indigenous Education and Cognition

Africa is an immense continent with nearly a thousand separate language groups, and a diversity of climates, topography, and social and economic development. With so much diversity, is it possible to refer to "African" traditional education? Although there is tremendous diversity throughout the continent, African culture and identity are linked by two key qualities that transcend the cultural, linguistic and ethnic diversity of the African people: (a) communalism, the sense of belonging to a community of people, and (b) *ubuntu*, a word from the Zulu and Xhola languages that means humanness and is characterized by hospitality, friendliness, respect, compassion, and fairness. It refers to seeing the welfare of others as a primary concern (Higgs, 2008; New World Encyclopedia, 2011). The African conception of *ubuntu* and communalism is described by Mbiti (1969) in the following way:

> Whatever happens to the individual happens to the whole group, and whatever happens to the whole group happens to the individual. The individual can only say: "I am, because we are; and since we are, therefore I am." (Mbiti, 1969, p. 108)

Traditional indigenous African education communicated these values through informal means (play, imitation of and participation in adult work, dance, song, proverbs, riddles) and formal means(rote learning, initiation, apprenticeship) and had as its general goal the transmission and conservation of the accumulated wisdom and knowledge of the community from one generation to the next (Reagan, 2000; Sifuna and Otiende, 2006). Omolewa (2007)

notes that traditional African education is always used as a community's information base; it facilitates communication and decision-making and is holistic in its essence. It is a way of life, an education for living. Battiste (2002) describes it as embodying web of relationships within an ecological context that implies responsibilities for possessing and sharing various kinds of knowledge.

Educational Goals and Curriculum

More specifically, the educational goals of indigenous education included the development of: (a) physical skills, (b) character, (c) a respect for elders and authority, (d) intellect, (e) vocational skills, (f) a work ethic, (g) a sense of belonging to the family and community, and (h) an appreciation of the community's cultural heritage (Fafunwa, 1974; Higgs, 2008; Sifuna and Otiende, 2006). What is important to notice is that traditional African education was not solely geared for the development of physical and mental capabilities; rather, it embraced character building along moral, spiritual, and social lines. It emphasized social responsibility, communal participation, and the characteristics of the "good person," one who is "honest, respectable, skilled, cooperative, and conforms to the social order of the day" (Fafunwa, 1974, p. 20). The notion of spiritual reality is also a vital aspect of indigenous knowledge systems; knowledge is not seen as secular as in western systems, but as a process with a sacred purpose (Battiste, 2002).

At the heart of African traditional education is the physical environment. Sifuna and Otiende (2006) trace the development of indigenous curriculum to it—children must have the knowledge and skills to overcome, adjust to, and harness their physical world. They need to learn about the weather, geography, soil, tools, hunting, fishing, farming, herding, food preparation, and building. The physical environment also drove an economic facet of the curriculum. Each

person was taught his or her responsibility to contribute to the tribe's success and continuance. Children were seen in economic terms; "After the birth of a boy at sunset, a Ngoni mother cried to the admiring neighbors, 'See, the baby has been waiting the return of the cattle, because it is he who will tend the cattle'" (Sifuna and Otiende, 2004, p.151). The indigenous curriculum also revolved around the spiritual and moral development of the young. Religious observances necessary for placating the ancestral spirits were taught to the children as imperative for their survival and for the welfare of the clan. The laws and customs of the community as well as the accepted rules of conduct such as courtesy, honesty, and generosity were transmitted as well (Fafunwa, 1974; Higgs, 2008; Omolewa,2007; Sifuna and Otiende, 2004; Reagan, 2000).

Educational Methods

The methods of instruction can be broadly classified into two categories, the formal and the informal. The informal methods included play, (imaginative and imitative play, and physical contests) work tasks, and oral literature (myths, legends, folk-tales, dance, and proverbs). Formal methods of instruction involved apprenticeship (such as artisans or herbalists) and initiation into the tribe (physical, emotional, and mental tests as well as circumcision) (Fafunwa, 1974; Higgs, 2008; Omolewa,2007; Sifuna and Otiende, 2004; Reagan, 2000).

Oral Tradition in African Education

Traditional African societies utilize the oral tradition as the primary mode of education through which Africans learn their origin, history, culture, religion, morals, norms, vocations, and survival techniques. It is a repository of the wisdom of generations. In fact, it has been said when an old African passes away, a whole library disappears (Ki-Zerbo, 1990). Oral information is shared through both unstructured gossip and conversation and through structured means such

as verbal testimonies, eyewitness accounts, idioms, legends, myths, folklore, stories, puzzles, riddles, and proverbs (Omolewa,2007; Sifuna and Otiende, 2004; Reagan, 2000).

Stories are a main form of oral tradition and are used to convey culture, experience, values, knowledge, and wisdom. They communicate socially normative behavior, beliefs, morality, and attitudes. They are handed down from one generation to the next and thus their focus is to teach the young the values of the community (Reagan, 2000). Myths and folklore relate a certain fact or truth about the visible and invisible worlds. They can also explain a set of circumstances and how to endure or overcome them. Proverbs feature prominently in all African cultures and often form sub-languages of their own (Omolewa, 2007). They are succinct, easily remembered summaries of important ideas and experiences and thus provide an excellent window to view a community's worldview.

Why Indigenous Education is Important

Traditional indigenous education can constrain development because of its insistence upon conformity rather than upon innovation. However, it can also become the foundation of a blended curriculum and methodology. A blended curriculum can embrace the best of all cultures and fit the African child for global citizenship.

The desire for this type of integration was found by Trudell (2007) when she examined the perspectives of people living in several rural communities in Cameroon, Mali, and Kenya regarding the purposes and outcomes of formal education and what those communities believed to be the proper language of instruction in the school setting. Trudell (2007) found a tension within African parents between the desire for the modern and at the same time a yearning for the traditional. Specifically, African parents believed that education, particularly education in English, would yield the greatest monetary return for their children and family. Yet the parents

deplored the cultural cost of a modern education. They voiced the divide in language and in culture between the educated and non-educated within a community—a creation of foreigners within their own country. Trudell (2007) also found that the inclusion of local languages and local culture (activities, history, literature, values) greatly resonated with parents who desired to see their children educated in ways congruent to the local village values.

Bridges and Ridley (1999) identified four practices of traditional education worth retaining in a modern Ethiopian educational culture: the rich relationship between teacher and learner, the intimate connection between learning and doing, the extensive use of peer tutoring, and the emphasis on rhetoric—specifically argumentation, improvisation, and public speaking. Reagan (2000) also sees the indigenous value of communal responsibility, of oral tradition (proverbs, riddles, puzzles, song, and word games), and of moral and character training as integral components of a blended traditional and modern African education. Evans (2008), in his discussion of educating for global citizenship, cites a number of the methodologies advocated by Bridges and Ridley (1999) and Reagan (2000). He also advocates the infusion of critical thinking activities, issue-based inquiries and analysis, cross-cultural experiences, conflict resolution, and the exploration of multiple values and beliefs in order to prepare a child for living in an increasingly interdependent world.

There is a need, in other words, for a holistic education that embraces identity and heritage as well as cultural diversity. Among African scholars today there is a push to stop the "re-colonization" of the African mind by westerners through the adoption of western pedagogical practices such as child-centered education as well as through the continued use of European textbooks and reading material. Tabulawa (2003) argues that learner-centered or child-centered pedagogy was identified by western international aid agencies as the appropriate pedagogy to

develop and disseminate democratic social relations in developing nations. Furthermore, he contends that the primary interest in promoting such a pedagogy is ideological and political rather than educational and calls for the development of culturally responsive pedagogies. Altinyelken (2010), and Sikoyo (2010 also question the wisdom of adopting child-centered pedagogies because of the overwhelming contextual challenges (such as time constraints, a rigid syllabus, large class sizes, inadequate instructional materials, and the language of instruction) that are rampant within the classrooms of developing nations. They, like Tabulawa call for the debate about child-centered pedagogies to shift from how to implement them to whether they are appropriate in African culture at all. There is, in other words, a growing interest in comprehending and incorporating African epistemology and cognition—African ways of knowing and understanding—into the education system.

Culture and Cognition

Research into intelligence and cognition has preoccupied much of experimental psychology over the past century. From Spearman's concept of intellect as a single entity or *g*, to Piaget's notions of chronological development, to Vygotsky's "Zone of Proximal Development," to Gardner's theory of multiple intelligences, to Perkin's depiction of nature and nurture as a flexible arrangement, the ways of portraying the complex relationship between cognition and the environment or culture has evolved and is still evolving (Ormond, 2006; Gardner, 1983; Perkins 1995; Nisbett and Norenzayan, 2002). The progression of the research literature seems to indicate that to only concentrate on the internal processes of cognitive development as a single entity or as growth and age related factors and to ignore the environment and the interaction of culture and cognition is to have an incomplete view of cognitive processes.

In their meta-synthesis of cognition and culture research, Nisbett and Norenzayan (2002) argue that there are three important ways that cultural variation shapes cognition: differences in cognitive accessibility, differences in cultural expertise, and differences in cognitive processes. Variation in cognition from culture to culture is a result of the different historical developments within the society which leads to the emergence of different social activities and tools. The development of different social activities and tools subsequently leads to different thought processes, differential expertise in cognitive strategies, and differential knowledge about a domain. The implication is that different cultures will rely on qualitatively different cognitive strategies to solve problems and that different cultures will possess different cognitive processes. Nisbett and Norenzayan (2002) cite studies investigating logical reasoning among traditional societies such as Luria's (1971) work (as cited in Nisbett and Norenzayan, 2002) with Uzbek peasants to illustrate a reliance on different cognitive processes.

It would seem, therefore, that from a cognitive/cultural perspective the African culture would tend to promote learning through imitation and observation and not by questioning, which is at the heart of child-centered pedagogy. Does the African culture/cognition necessarily limit the development of critical thinking ability? Grosser and Lombard's (2008) study of the relationship between culture and the lack of development of critical thinking abilities in prospective South African teachers seems to support the importance of cultural context in the development of cognitive abilities. It should be noted, however, that the Grosser and Lombard (2008) study utilized a western developed tool (the Watson-Glaser Critical Thinking Appraisal) to measure the critical thinking abilities within the South African prospective teachers. Their conclusion that "individuals raised in a society focusing on holistic, collective thought and emphasizes social obligation (as in the African culture) will focus on paying attention to

relationships, and rely on experience based knowledge . . . and will lack an absence of critical thinking abilities" may be overreaching (Grosser and Lombard, 2008, pp.1368-1369). It does, however, serve to highlight the need for more research into the cultural context in the development of cognitive abilities.

History of Education in Kenya

In East Africa, the first formal schools were developed by Christian missionaries and were primarily designed to rehabilitate former slaves by giving them a basic education and teaching them a marketable skill (Sifuna, 2007). Funding of the schools came through the various mission societies until the 1920s when, in response to the new League of Nations' model of trusteeship and the increasing indigenous African demand for education, the British colonial government increased their educational funding and established the Advisory Committee on Native Education in British Tropical Africa. The purpose of the committee was to control the spread and content of education, especially secondary education, in order to avoid a repetition of the Indian experience where the British colonial government educational policies created a large group of Western-educated school graduates who could not fit into the social and economic life of a rural society.[3] The advisory committee, after reviewing the findings of the Phelps-Stokes Commission on colonial education in Africa, endorsed a policy of differentiated education rather than an academic or liberal education (Küster, 2007; Whitehead, 2005).

The concept of differentiated education originated in the progressive education movement in the United States (particularly the strategies advocated by Booker T. Washington, the founder of the Tuskegee Institute in Alabama) and emphasized a child-centered education

[3] The British, through their educational system in India, created an "intellectual proletariat or 'babu' class" that ultimately contributed to the rejection of British control over India (Whitehead, 2005, p. 442).

that prepared a student to become a citizen and contributor to their community (Kallaway, 2009; Küster, 2007; Ravitch, 2000). "Four Essentials of Education" were identified by the Phelps-Stokes Commission to meet the developmental and environmental needs of the African child: health, home life training, industry, and recreation (Küster, 2007). Notably absent was any emphasis on a traditional liberal arts curriculum that was rich in the arts, letters, and sciences.

The British government also embraced a policy of close cooperation (i.e. funding) with the mission societies that adopted the differentiated curricula (Whitehead, 2005). Many missionary societies agreed to the scheme in principle (manual labor and the teaching of practical skills had traditionally been a part of missionary educational policies) and in practice (the societies badly needed revenue for their schools because of the overwhelming demand for education) (Küster, 2007). Though African Kenyans attended the schools, many, especially in the 1930s, rejected the differentiated curricula as an inferior education. They perceived it to be designed to maintain the socio-economic status quo, with the British colonial government in the position of the "elite trustee," and the indigenous African in the position of the "plebeian subordinate" (Whitehead, 2005).

World War II was a turning point in the history of Africa. Britain and France recruited soldiers from many African nations, and when those soldiers returned home from the war, they had a different perspective on their own countries and on their countries' colonial relationships (Sifuna, 2007). The returnees saw the racial stratification and socio-economic injustices imposed on Africans by the British and began to agitate for independence.[4] In Kenya, the 1949 Beecher Report of the educational system objectively revealed the inequality of opportunity for African

[4] Examples of the stratification and socio-economic injustices were the unequal structure, content, and accessibility of all levels of education, the differentiated pay structure between Africans and white, and the segregated and unequal living arrangements within the towns and cities (Sifuna, 2006).

Kenyan schoolchildren, yet it recommended the continuation of the current school organization of four years primary, four years intermediate, and four years secondary and the use of examinations to curtail the matriculation of African Kenyan students. That is, the Beecher Report validated the formal exam system as an effective means of limiting the number of students who could advance into the small number of secondary school openings (there were only six secondary schools in the nation for African Kenyans). This restriction was in stark contrast with the seven years of primary education afforded to white and Asian Kenyan students (Bogonko, 1992). The result of that policy was that only 29% of the African Kenyan students were expected to be educated beyond Standard Four[5] and less than 5% were expected to attend secondary (Sifuna, 2007). The results of that report further fueled the Kenyan discontent with British rule and became a catalyst for many of the returning soldiers to agitate for independence. The 1952 Mau Mau uprising in Kenya and the growth of nationalism made it increasingly evident to the colonial powers that it was not in Britain's national interest to maintain its hold on the African colonies, and they began the process of decolonization (Sifuna and Otiende, 2006). In preparation for independence, colonial administrators abandoned their cautious approach towards a liberal education and expanded primary and secondary education opportunities to the Africans, who wanted not a differentiated, but an academic British education that would qualify them for admission to British universities and prepare them for self-rule (Whitehead, 2005).

On December 12, 1963, Jomo Kenyatta was sworn in as Kenya's first president. In the post-independence period of the 1960s and 1970s, the development and expansion of education was a priority for the new Kenyan government (Christie, Harley, and Penny, 2004). The emphasis on educational development produced within primary schools a gross enrollment rate

[5] In Kenya, grade levels are referred to as standards, e.g. the Kenyan Standard Four is the equivalent of the American Grade Four.

(GER) of 102% by mid-1980[6], but when Kenya began to decline economically, the International Monetary Fund (IMF) and the World Bank pressured the Government of Kenya to adopt structural adjustment policies[7] in order to control the economy and manage debt. One of the unintended consequences of those economic strategies was an increase in the cost of education to Kenyan parents. School fees, uniforms, learning materials, and textbooks became the responsibility of the parent, and as a result, the gross enrollment ratio (GER) fell to a low of 78% by the early 1990s with less than a 50% completion rate by the time a student reached Standard Eight (Ackers, Migoli, and Nzomo, 2001). Thus, the well-intended economic policy hindered many children, especially those from economically marginalized groups who could not pay educational fees and levies, from accessing primary education.

By the late 1990s only 34% of the estimated 7.3 million primary school children completed the education cycle and of these, only 17% matriculated to secondary school, and 1.2% to university (NPBS, 1999). Over-stretched, congested facilities, staff shortages (due to the HIV/AIDS epidemic and other factors such as increased primary school enrollments, and lack of teacher training colleges), learning resource shortages, and unqualified teachers exacerbated the declining enrollments and contributed to the poor quality of education. Other factors, such as an increase in poverty, the availability of food, the prevalence of HIV/AIDS, and the use of child labor, also contributed to the declining enrollments during this decade (World Bank, 2009).

To address some of the negative effects of the structural adjustment policies, the IMF, World Bank, non-governmental organizations (NGOs), and the Kenyan government

[6] A GER above 100% does not imply that all school-aged children are in school. Rather, it is caused by both over reporting and grade repetition (Glewwe and Miguel, 2008).

[7] In general, structural adjustment policies focus on cost containment, public sector reform, privatization, and tariff removal. Educational reform is an important part of poverty reduction strategies built into structural adjustment policies.

implemented several educational initiatives. The first of these programs was the Strengthening Primary Education (SPRED) project and it was designed to counter the declining enrollment rates. From 1991-1996, SPRED I, II, and III supported a textbook supply system through mobile libraries as well as teacher professional development programs through the institution of a Teacher Advisory Center (TAC) and Teacher Resource Centers (TRC) (Christie, et al. 2004; Hardman, et al. 2009). The underlying principle was that the falling GER would be reversed by reducing the educational costs to parents (through the supply of instructional materials) and by improving the quality of education (through mass in-service teacher training created to shift pedagogy from a predominately didactic approach to that of an activity-centered approach). The push to further improve the effectiveness of Kenyan education was expanded through the Primary School Management Improvement Project (PRISM) in 1998 that emphasized positive leadership, monitoring pupil progress, joint planning, consistency in approach, rewards, and incentives, and finally, pupil and parental involvement (Crossley, Herriot, Waudo, Mwirotsi, Holmes, & Juma, 2005).

Historical Summary

The historical context of post-independence Kenyan education, then, is a challenging mixture of early success compromised by national economic decline and the adoption of the structural adjustment policies of external donor agencies. A range of cultural, economic, environmental, and political factors challenged the ambitious reforms enacted by donor agencies and the Kenyan government to offset the educational decline. These factors included limited access to good health and nutrition, unqualified teachers, a depleted workforce due to AIDS, large class sizes that made individual attention impossible, insufficient learning materials, and overstretched, congested facilities (World Bank, 2000; Sifuna 2007). Yet the need to enhance the

capacity development (CD) of teachers (and thus the quality of education) in developing nations such as Kenya remains and that need has been accentuated by the goal of EFA by 2015. It is within this background that the current state of Kenyan pedagogical practices can be properly understood.

Information Infrastructure

After the initiation of the educational reform programs in Kenya in the early 1990s, one of the first studies conducted was the Odini (1998) analysis of the information services in Kenya. In his analysis Odini (1998) judged the country to have a "fairly good" information structure (libraries, documents centers, archives, records' centers, and learning resource centers) to provide a foundation for educational information delivery (p.186). But he found the information infrastructure largely underutilized because of high levels of illiteracy, language barriers, the prevailing classroom "chalk and talk" pedagogy, and an improper analysis of the user's needs. Odini (1998) further cited the lack of official policy requiring primary and secondary schools to have libraries as a further deterrent to accessibility and scholarship by students.

Following the Odini (1998) study was a research project with a similar focus on information infrastructures. Fairhurst, Gibbs, Jain, Khatete, Knamiller, Welford, and Wiegand (1999) assessed the effectiveness of secondary school TRC and primary school TACs as a strategy to improve the quality of education in developing nations. This team of researchers from the University of Leeds embarked upon an ambitious investigation of the issues confronting teacher development using TRCs and TACs in four countries, one of which was Kenya. The team spent four weeks conducting interviews, observations, and records surveys at TRCs, TACs, and schools within Kenya. The Fairhurst team found that the current run-down state of the resource centers were an ineffective means for improving the quality of education in the

classroom and advised further study on how to improve the services offered by the TACs and TRCs in order to affect the quality of education in Kenya.

Teacher Training Colleges

The Galabwa (2003) study on the functioning of three teacher-training institutions in Kenya echoed the findings of the Fairhurst et al. (1999) study regarding the inability of the established institutions to positively influence classroom pedagogy and to improve the effectiveness of schools. Galabwa selected three of Kenya's 29 primary school teacher-training institutes as the setting of his study: Mosoriot Teacher Training College, Murang'a Teacher Training College, and the Kenya Institute of Special Studies, which trains teachers for special education. Using interviews, group discussions and a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis, Galabwa assessed 11 aspects of the primary teacher training institutions. Those relevant to this research were his inquiries regarding mission performance, curricula, and pedagogic methodology. Mission performance referred to how well the institutions were meeting their stated mission and goals. Galabwa (2003) found the three institutions to be operating without institutional plans that supported the goals of EFA and Universal Primary Education (UPE). Furthermore, he judged the curriculum delivery as predominately chalk and talk and thus it failed to cultivate innovation or higher order cognition. Galabwa also discovered that the majority of lecturers had no experience in a primary school classroom nor were they involved in conducting research. Regarding pedagogic methodology, Galabwa found the colleges emphasized child-centered and interactive pedagogy, but a negative influence by the nature of the teacher end-of-program examinations undermined the application of this pedagogy. Galabwa concluded his report with over 20 specific recommendations to address the issues he uncovered

through his survey. The most relevant to mission, curriculum, and pedagogy were a redesigned curriculum with fewer courses and more hands-on experience assignments.

Teacher Induction, Retention, and Appraisal

Indoshi (2003) chronicled the lack of a smooth transition from pre-service training in the TTCs to induction into the schools as novice teachers. This study followed 27 bachelor of education graduates throughout their first two years as teachers. Using semi-structured interviews, Inodshi (2003) found that the expectations of the novice teachers about the profession went unfulfilled, that they felt isolated by the students, faculty, and administration, and that there was an incongruity between their college training and their classroom experiences. Indoshi (2003) recommended that a less haphazard, informal approach to teacher induction would greatly benefit the transition from college to classroom and aid in the retention of teachers. Further research is needed to understand the disconnect Indoshi seemed to find in his study.

The issue of teacher shortage in sub-Saharan Africa was specifically addressed by De Jaeghere, Chapman, and Mulkeen, (2006). Using Kingdon's multiple streams method as the framework of their study, De Jaeghere's team assessed the feasibility of key strategies typically offered as possible solutions to resolve the projected teacher shortage. This shortage is being fueled by rapid population expansion, EFA and UPE mandates, improved student dropout rates, and high mortality rates due to HIV/AIDS. One hundred fourteen secondary teachers, head-teachers, and education officials were surveyed across six countries regarding the various policy options to increase teacher supply. Though Kenya was not one of the countries included in the survey, its neighbors of Ethiopia, Tanzania, Madagascar, and Uganda were, and therefore this study can inform upon the Kenyan teacher shortage as well. The research team found an across-the-board lack of support for shortening teacher training (with or without supervision) and for

teachers to be trained in additional subject areas. In contrast, there was overwhelming support for increased in-service training, distance education, and mentorship. The results reveal that educators were more enthusiastic about strategies that decreased attrition through improved continuing professional development opportunities rather than by increasing the flow of teachers through a shortening of teacher training. In other words, reducing the amount of teacher training was incompatible with the teachers' value of education and their belief that pre-service training affects the quality of teaching and learning. Moreover, they evidence a desire and motivation among the teachers to increase their knowledge and refine their skills.

Adequate pre-service training and continuing professional training are indeed essential for increasing the quality of teaching and learning, but what about the role of teacher appraisal? Formalized appraisal of teachers' performance is viewed by educationists as a logical and essential practice to insure accountability, best practice, and quality improvement (Ormrod, 2006). Odhiambo (2005), through interviews, questionnaire, and a document survey explored and evaluated the state of teacher appraisal in Kenya. Odhiambo surveyed 115 key informants within six public and private schools within one unspecified province in Kenya. In general, his survey found that teachers and administrators perceived formal appraisal as beneficial for encouraging effective teaching, producing quality teaching, identifying areas of strengths and weaknesses, and increasing awareness of curriculum concerns. However, he also found that appraisal raised concerns about the process being authoritarian, coercive, biased, and costly. These fears are understandable in a climate that has diminished opportunities for continuing professional development as the Galabwa (2003) study highlighted. How appropriate is it to appraise an educator's professional knowledge and development if he or she is given minimal opportunities to improve through in-service and distance learning? Though formal appraisal does

have a role in informing upon the quality and effectiveness of classroom pedagogy and practice, there are other means of evaluation that are less obtrusive and more constructive.

Classroom Pedagogic Practice and In-Service Teacher Training

The Ackers and Hardman (2001), Pontefract and Hardman (2005), Abd-Kadir and Hardman (2007), and Hardman, et al. studies concentrated their investigations upon teacher-pupil classroom discourse and how such an analysis can inform upon and develop pedagogic practices in the developing world. All four employed methodologically rigorous designs and utilized the discourse interaction model of *initiation, response*, and *follow-up* (IRF) as the framework for their research. Initiation usually corresponds to a teacher question, response is the student attempt to answer the question, and follow-up is the teacher feedback to the student's response. All studies videotaped rural and urban primary classrooms throughout Kenya and recorded English, science, and math lessons except the Abd-Kadir and Hardman (2007) study which focused solely on English lessons. The Pontefract and Hardman (2005) and Hardman et al. study also conducted semi-structured interviews with teachers and pupils to gain critical reflective insight on classroom interaction.

The Ackers and Hardman (2001), Pontefract and Hardman (2005), and Abd-Kadir and Hardman (2007) studies revealed that the prevailing pedagogy in Kenyan primary schools was dominated by rote, recitation, and the transmission of facts. Ninety percent of the interaction analysis using the IRF structure disclosed that only two parts were utilized (initiation and response) with little to no feedback by the teacher. Without that feedback, both pupil contributions and opportunities to advance or examine ideas from differing perspectives were discouraged, and the development of higher order critical thinking skills was inhibited. Open-ended questions were rare, as few as 2%, while pre-planned closed questions dominated the

classroom discourse. Responses were limited to three words or less approximately 90% of the time, and were given as a completion of a sentence, the repetition of words, and choral affirmations of understanding. Two of these three studies evidenced little variation in discourse style between the three subjects. Whether it was English, math, or science, the lessons were predominately reiterative rather than developmental, and were filled with propositional knowledge (know that) rather than procedural (know how) knowledge. However, the fourth study, Hardman et al., has signaled the beginnings of a change in Kenyan classroom pedagogic practice.

The Hardman et al. investigation was conducted as a follow-up to the Ackers and Hardman (2001) study to gauge the impact of the SPRED program, specifically the School based Teacher Development (SbTD) aspect of the SPRED program. The SbTD program was a national distance teacher in-service training scheme involving 47,000 primary teachers and ran from 2001-2005. The program's aim was to improve the quality and cost-effectiveness of primary education by developing skills within the teacher that promoted active learning with textbooks.

Three teachers from every school were trained as Kenyan Resource Teachers (KRTs) by TAC tutors who provided group-based support to the KRTs. Critical reflection on beliefs and classroom practice were a significant aspect of the SbTD training modules that challenged teachers to consider other styles of teaching than those in which they were taught. It was hoped that this type of critical reflection would promote a better balance of teacher-led/student-initiated discourse and activities.

Hardman et al. found that within Kenyan primary classrooms, the use of group and collaborative work among students had significantly increased as did a greater use of teaching

aids, systematic lesson plans, and flexible classroom organizational arrangements that were conducive to group work, though it did not link these findings with student outcomes. Through their analysis, it was found that teachers who had received the most training under the SbTD initiative demonstrated the most significant change in their classroom discourse. From the semi-structured interviews, the researchers discovered that though the cascade model of SbTD (where KRTs pass on their training to their untrained colleagues) was well received and had been implemented, it had less impact on the educators than had been anticipated due to the heavy workload of the teachers that prevented them from training their colleagues.

At approximately the same time that the SPRED and SbTD initiatives progressed, the Kenya Ministry of Education, Kenyatta University, and the University of Bristol collaborated to develop a school management and leadership training program (PRISM) involving over 19,000 Kenyan primary school head teachers. Additionally, PRISM aimed to put in place a sustainable and ongoing system of in-service training that would continue beyond the four-year program (1996-2000). Crossley et al. (2005) documented the PRISM experience, and like the SPRED and SbTD initiatives, found that the modular training materials transformed school management in terms of school development plans, school management committees, and the devolution of decision-making down to the local community level. Specifically it engendered a new level of respect among stakeholders (such as school management, teachers, and parents), increased a sense of influence or control over the education process, created a high sense of efficacy among peers in the school, and provided an opportunity to develop and make use of new skills.

Herriot, Crossley, Juma, Waudo,, Mwirotsi, and Kamau, (2002) further documented the impact of the PRISM initiative on improving the quality of education through the development of head teachers support groups (HTSGs) in communities. Head teachers were encouraged

through the PRISM program to form small clusters of proximal schools (approximately six) within a community to provide a forum for head teachers, community members, and other educational officials to share ideas with each other and seek support from each other.

The PRISM team devised a strengthened cascade model that involved using trainers and trainees in dual roles of both teacher and learner. The information flow, according to their theory, would ripple back and forth between the levels rather than merely from top-down in the typical cascade model. Herriot and his fellow researchers designed a descriptive study that utilized both quantitative and qualitative approaches. Field visits by researchers interacted with key support group informants to discover if the formation of HTSGs were successful in fulfilling their purpose of creating "pockets of excellence" that affected the quality of education and the quality of life in the community. After identifying 20 HTSGs from a cross-section of Kenya's 74 school communities, the researchers launched a pilot study in one HTSG to test their instruments, their methods of inquiry, and their interpretation of the responses. These instruments included in-depth interviews, focus group discussions, observations, and an inspection of secondary documents such as statistics and minutes from the HTSG meetings. There were seven chief results of the researchers' inquiries into the success of the HTSG ripple structure. The common thread among them was an increase in engagement and collaboration among the educators.

The impact of the HTSG on school quality indicators was also assessed. Upon examining enrollment, dropout, completion, and mean Kenyan Certificate of Primary Education (KCPE) scores, a general pattern of improvement emerged. On average, enrollment increased by 5% with the greatest increase among the girls. The drop out situation showed improvement in the urban and arid districts (such as those in the Eastern, Northeastern Provinces) but not the rural districts. The researchers believed that the involvement of parents at the HTSG meetings increased

awareness of their children's' right to a quality education that was not interrupted or cut short by the pressure to contribute to the family income. The physical quality of the school facilities also improved because of an increase in parental involvement in keeping up the grounds, raising funds, and supplying labor. In general, the findings of Herriot et al. suggest that the concept of a support group across the community has rippled at the grass roots level and improved both the quality of education within the schools and the quality of life within the community.

While the PRISM and SPRED programs focused on improving the quality of primary education in Kenyan schools, secondary schools also were targeted for improvement through the 1998 Strengthening of Mathematics and Science in Secondary Education project (SMASSE). This project was implemented in collaboration with the Japan International Cooperation Agency (JICA) and was aimed at improving mathematics and science education through in-service teacher training (INSET). The JICA (2007a, b, c, d) qualitative study synthesized areas of cooperation and the lessons learned from the SMASSE project in order to inform future initiatives on mathematics and science education.

The primary focus of the SMASSE project was lesson improvement by the cascade model at both the national and district levels. It also established a mechanism through which school tuition fees would fund the district level training thus ensuring the sustainability of the training program. Central to the SMASSE initiative was the notion of capacity development (CD). JICA defined CD as the ability of developing countries to take responsibility for their problems and for the solutions of those problems. To support responsibility for problem solving, JICA clearly delineated their roles and attitudes in the project. The role of the Japanese expert was to be a *kuroko*—a behind the scenes supporter of a theatrical play without whom the play cannot proceed. This was accomplished by adopting a waiting stance—a willingness to wait on

their Kenyan counterparts to reach their own decisions in order to "own the problem and solve the problem." In order to pass onto the Kenyan staff an attitude of respecting and appreciating their coworkers and staff and to develop an appropriate attitude towards education, the attitude of the Japanese trainers was to be one of humility or modesty. "Our first job was to teach the C/P's [Kenyan Counterparts] the spirit of modesty which is found in the proverb: 'Full ears of corn hang lowest'" (JICA, 2007b, p. 34). This proverb infers that those who are filled with knowledge and wisdom should be the most humble.

Tangible outcomes from the project included: (a) changed attitudes of the teachers from apathy and arrogance to enthusiasm and humility, (b) increased interest on behalf of students toward the sciences and mathematics curricula, (c) improved lesson quality and teaching skill by the teaching staff, (d) an established system of evaluation for monitoring quality, (e) a developed organizational and economically sustainable framework, (f) 18,000 science and math teachers trained through INSET, and (g) curricula more appropriately taught. Nevertheless, perhaps the more interesting intangible outcome of the JICA (2007) study was the forthright refusal to impose an ideological construct upon Kenyan educators reflecting the norms of another culture. If teaching and learning are contextual activities, then the Japanese approach of CD would, in the long term, best support the goal of improving the quality of education because of its insistence on the indigenous development of educational systems. However, a 2008 study by Onderi and Croll uncovered a quite different set of results than reported by the SMASSE report.

Improving the quality of teaching by investigating the teacher's perspective on the effectiveness of in-service training was the subject of Onderi and Croll (2008). One hundred nine English and mathematics secondary teacher from 30 schools in the Gucha district in Kenya were

surveyed through questionnaires and informal interviews regarding the impact of SMASSE within their district. The discussions revealed that the training was seriously compromised because of a shortage of competent SMASSE personnel to deliver the training, a lack of understanding of the local context by the Japanese advisors, the expectation for funding to be generated by the community, and the scheduling of training courses during teacher vacations. Onderi and Croll (2008) found that teachers from low-performing schools tended to see SMASSE as a distraction and unhelpful for raising examination scores while those from high-performing schools were less critical. Ninety-five percent of the teachers and head teachers surveyed believed their in-service training was relevant and 90 % felt it had raised their students' examination performance. The study also found that the teachers in the high-performing schools were more likely to want examination training than those in the low-performing schools. Though this result may seem incongruous, Onderi and Croll (2008) hypothesize it is due to the expectations and pressure placed upon high-performing schools to produce high scores—a demand less keenly felt by teachers in low-performing schools. Finally, Onderi and Croll (2008) listed what the teachers and head teachers felt were the barriers to professional development. The greatest constraint was the lack of financial and material resources followed by a felt lack of expertise by the head teacher to plan and conduct the in-service training.

The different perceptions of the effectiveness of SMASSE seem to center on a misunderstanding by the Kenyans of the project design elements. The Japanese intentionally took a waiting stance in order for the Kenyans to step-up and take ownership. This was perceived by the Kenyans as a lack of capability on the part of the Japanese. The Japanese wanted sustainability, accountability, and ownership and so demanded that the bulk of the funding be done by the community. This was negatively perceived by the Kenyans; they wanted the

Japanese to fund the project. The Japanese wanted to engender professionalism and motivation and so held the trainings during vacations. This was negatively perceived by the Kenyans. They wanted compensation for the trainings and did not want to sacrifice their holiday by attending training. It would seem that the effectiveness of SMASSE was somewhat compromised by confusion around expectations, intentions, and roles—a clear warning of the difficulty in providing a seamless flow of expertise, aide, and programs into a foreign culture.

Yates (2007) further explored increasing the quality of education in Kenya but did so by connecting the provisions of resources and teacher education. Yates used the 2006 Ministry of Education, Science, and Technology (MOEST) survey (that measured textbook availability in Kenya primary schools in the subjects of math, English, and science) to gauge the effects of having access to textbooks in terms of learning gains in the national primary examination Kenyan Certificate of Primary Education (KCPE). His rationale was that these measures would serve as proxies for quality improvement in teaching and learning. In his analysis, Yates compared the KCPE performance of Standard Eight children over time within three different poverty bands (low, medium, and high) and found that the largest increase in KCPE performance since 2003 was from children living in the poorest districts. Children from middle-income districts showed a smaller increase while children living in better-off districts actually experienced declines in KCPE performance. Upon further disaggregation of the data by gender, Yates found that the highest increase in mean KCPE scores for girls was in the poorest districts. Improvements for the poorest children were also revealed through the MOEST survey data regarding repetition rates. These rates decreased the greatest in the poorest districts. These findings, according to Yates, were representative of the human capital theory perspective that views learning as a function of inputs. Yates pointed out that this data, though informative, tells

the researcher little about the capability achieved by teachers and pupils because of having textbooks or in-service training.

To measure quality changes in teacher education that revealed learning as constructions (e.g. collaborative learning) and learning as connections (e.g. community involvement), Yates investigated the use of text books by KRTs and non-KRTs that were trained through the SbTD initiative to see if there was any difference in the way they used the books. One of the aims of the SbTD program was to train teachers in the development of collaborative learning within the classroom. Yates found that only in the area of group activity with textbooks was there a slight change in pedagogical practice between the KRTs and the non-KRT trained through the SbTD initiative. This seemed to indicate the SbTD training had little effect on classroom practice. But when he compared KRTs and non-KRTs trained through the INSET program, Yates found more significant differences between the two groups in the use of paired or group work, in the utilization of textbooks in their teaching, and in classroom organizational changes that were more conducive to group and paired work. Yates made one other analysis of the NPB data examining the amount of classroom time spent reading. He found significant developments in the range of reading activities within the classroom due to the increased supply of textbooks. These changes, according to Yates, represented a change and an increase of school quality and they evidenced that the national textbook program accompanied by the in-service teacher training impacted not just learning as consequences, but learning as construction and collaboration.

Summative Discussion

The Odini (1998) and the Fairhurst et al. studies chronicled the deteriorated state of the national TRCs and TACs and their inability to positively affect the pedagogic practices of the teachers. However, the Odini and Fairhurst research can also be viewed as a baseline observation of the

general deteriorated state of education before the educational reform projects launched full swing in the mid-1990s. The Ackers and Hardman (2001), Pontefract and Hardman (2005), and Abd-Kadir and Hardman (2007) studies using discourse analysis uncovered that the prevailing pedagogy throughout the 1990s was dominated by rote, recitation, and the transmission of facts. Throughout that decade, however, the SPRED, PRISM, INSET, HTSG, SbTD, SMASSE, and other educational initiatives were in full swing within the country. PRISM, which targeted school administration, helped to transform school management in terms of school development plans, school management committees, and the devolution of decision-making down to the local community level that resulted in a new sense of ownership among the management, faculty, and community. The HTSG project, which established headteacher support groups, evidenced that the formation of the support groups not only improved the quality of education with the schools by decreasing the dropout rate and increasing the enrollment and completion rates, and improving achievement test scores, but they also improved the quality of life within the community through increased parental involvement.

The SPRED, INSET, SbTD, and SMASSE all focused on improving pedagogical practices and both the Hardman et al. research using discourse analysis and the Yates (2007) study using a correlation analysis of textbook supply and teacher training found a significant shift in classroom pedagogy from the expository to the interactive and collaborative. It would seem, therefore, that from the Fairhurst et al. study that documented the general weakened state of the Kenyan educational system, to the most recent research of Yates (2007) and of Hardman et al. that some of the reforms may be having an impact on classroom practices. These reforms, however, seem to have had little effect upon student outcomes. The 2009 Uwezo Kenya study documented the failure of nearly half of Kenya's youth (six to 16 year olds) to read, write, or

perform basic math on a Standard Two level in either English or Swahili (Uwezo Kenya, 2010). The Galabwa (2003) research on teacher training colleges that inferred instruction was being seriously undermined by both curricula and the methods of instruction may point to ineffective teacher preparation within the colleges as a root concern. However, the paucity of research regarding the program of studies and the methods of instruction within the TTCs that this literature review has uncovered calls for further research in this area.

CHAPTER THREE: MATERIALS AND METHODS

Purpose of the Study

The purpose of this case study is to chronicle the messages transmitted within Kenyan TTCs through the formal curriculum and method of instruction in order to discover which messages regarding pedagogical practice are internalized within novice Kenyan primary school teachers and then actualized in their classrooms.

Research Questions

1. What messages regarding classroom pedagogical practice does the faculty in Kenyan TTCs transmit through the formal curriculum of textbooks, course syllabi, and the program of study?
2. What messages regarding classroom pedagogical practice does the faculty at Kenyan TTCs transmit through the method of instruction?
3. Which messages are internalized within the novice primary Kenyan school teachers?
4. Which messages are actualized within the classrooms of the novice primary Kenyan school teachers?
5. What effect do these messages have upon the quality of education within Kenyan primary schools?

Significance of the Study

Kenya has many hurdles to overcome in order to achieve the goal of a literate population. The adoption of EFA by 2015 has given thousands of children who had previously been denied schooling because of their socioeconomic status the opportunity to walk through a classroom door for the first time. However, it has not necessarily afforded them the opportunity to receive a quality education— one that promotes cognitive development and the accumulation of particular

values, attitudes, and skills. The GMR (2005) placed teaching and learning as the key arena for human development and change, therefore developing teachers with sound pedagogical practices is essential for a quality education. Research into how teachers are trained in the TTCs, what they are taught, and how well the program of study addresses the realities of Kenyan classrooms, therefore, becomes imperative. This study addresses those issues and may possibly influence TTCs programs, methods, and curriculum in Kenya and other developing nations.

Setting

There are approximately twenty-nine government TTCs scattered throughout Kenya's eight provinces, and these provinces are further subdivided into districts. One of those provinces, the Central Province, was chosen for this study by the researcher because it contains the largest concentration of population and schools and because it would facilitate the timely and safe access of the researcher to the study sites. The Kenyan Ministry of Education made two colleges located within this province accessible to the researcher—Taa TTC and Maarifa TTC. Taa and Maarifa are pseudonyms; Taa is the Kiswahili word for light and Maarifa is the Kiswahili word for knowledge.

Both Taa and Maarifa TTCs have approximately 700 students and a faculty of 60. Though they have extensive playing fields and ample classroom and dormitory blocks, neither has a functioning library or computer lab. My observation was that the library and computer labs were the quietest rooms on the campuses. A cursory review of both school's computer labs revealed that the visible equipment (monitors and keyboards) was scattered on several tables and appeared quite old—at least ten or more years old.

Taa TTC is nestled in the rolling hills of the semi-rural Kikuyu District which is approximately 20 miles northwest of Nairobi. Within a two mile radius of the college are numerous educational and medical facilities including the University of Nairobi College of Education Extension Campus, the Presbyterian University of East Africa, Kikuyu Hospital, and the two premier high schools in Kenya: Alliance Girls and Alliance Boys. Within this district, approximately 25% of the population lives below the poverty line[8]. The bulk of the population relies on agriculture and informal work as their source of income (Kenya Central Bureau of Statistics, 2011; Institute of Economic Affairs, 2011).

Taa TTC was established in 1910 and is the oldest TTC in Kenya. Though the college has gone through several renovations, many of the classrooms did not have window glass, adequate lighting, bulletin boards, audio visual equipment, or working electrical circuits. The walls are concrete block and many of the roofs are constructed from tin which makes hearing difficult when there is a rainstorm. The classrooms are roughly 30 feet by 30 feet and usually had about 40 wooden desks with metal chairs in them. All the classrooms had chalkboards and several had whiteboards though I never saw a faculty member use the whiteboard. I was told that the markers are in short supply. Several of the classrooms had bulletin boards, but these were empty except for an occasional UNESCO poster heralding the need for HIV/AIDS testing. The walls were badly soiled with dirt, graffiti, and fingerprints; all needed painting. Because the walls did not extend all the way up to the ceiling, it was easy to hear the lecturers in the adjoining classrooms. The classroom floors were smoothly finished concrete that tended to amplify the noise of the desks and metal chairs when they were moved.

[8] The poverty line as defined by the Kenyan Central Bureau of Statistics (CBS) is 1, 239 Kenya Shillings per month or about 15 USD per month.

The Taa library was kept locked and had to be opened by the college receptionist/librarian. The library is on the second floor of a multipurpose building in a room roughly 30 by 60 feet. Though the twelve shelving units were filled with books, the collection was dated and dusty; the newest reference books that I found were dated 1976. When I asked if the students used the library, the receptionist/librarian said, "Not so much. Sometimes we open it at night so the students can study, but they do not check out books. They are old. There is no money for new books."

Maarifa TTC is located in the rural Murang'a District which is approximately 60 miles north of Nairobi. There are 12 tertiary institutions within the district; the largest are Maarifa TTC and the Murang'a Institute of Technology. Within this district, 30% percent of the population lives below the poverty line and most of the population rely on subsistence farming or informal work as their source of revenue (Kenya Central Bureau of Statistics, 2011; Institute of Economic Affairs, 2011).

Maarifa is the newest of Kenya's TTCs and was built in 1992. There are four two-story concrete construction classroom blocks with roofs of clay tiles. Each classroom block has about 10 classrooms that are approximately 30 feet by 30 feet and hold approximately 50 desks. Even though it is less than 20 years old, the classrooms were in a state of disrepair. Wires protruded from the ceilings and the walls where clocks and lights had been hung. Whole swaths of flooring tiles were missing from the floors, and the broken skeletons of storage cupboards populated the classrooms. Like Taa, many of the classroom walls were grimed with fingerprints and dirt and did not have window glass, audio visual equipment, or working electrical circuits.

The library of Maarifa is a two story building with one central downstairs hall that is roughly 60 by 120 feet. There is an upper mezzanine that is about 30 by 60 feet. The downstairs hall contains 24 mostly empty shelving units and about 12 study carrels that are in various states of disrepair. The reference section is located in an office off the main room and the newest reference books that I found were dated 1995. The only person I saw in the library during my three weeks of observation was the electrical technician/librarian who sat at a desk and read one of the national newspapers.

A key aspect of this study involved following the novice teachers of these two colleges into their primary classrooms. These recent graduates were found through snowball sampling in nine primary schools scattered throughout Central Province within the Kikuyu, Marang'a, and Kasarani Districts. The nine schools ranged in setting from rural to semi-rural to suburban to urban slum. They also varied: in size (from 30 to 1500 students), in socio-economic status (from low SES to middle SES), and in mean test score performance (from 169 to 358).[9] There was, in other words, a wide variation in primary school settings in this study.

Participants

College Faculty and Primary Teachers

The sampling frame of this research was the faculty and alumni of Taa and Maarifa TTCs. Eighteen faculty members who taught the core curriculum in the TTCs were observed and interviewed. Nine of the lecturers were female and nine were male. Eleven novice teachers who had recently graduated from Taa and Maarifa were observed and interviewed.[10] Seven of the novice teachers were male and four were female; all of them were under 25 years of age. Four of

[9] The Kenyan Certificate of Primary Education exam scores range from 0 to 500 with 250 as a passing score.

[10] A novice teacher is defined by the Kenya Teacher Service Commission (TSC) as a newly qualified teacher within the first two years in the classroom (Republic of Kenya, 1986).

the teachers were in their second year of teaching, three had taught for one year, and four had less than six months in the classroom.

The faculty members were selected by convenience by the deans of curriculum from each college; the deans would enter the staff lounge and ask any of the teachers who happened to be in the room if they would allow me to observe them teach. Those who were willing were placed on my schedule.

The novice teachers were selected using snowball sampling. Several names of recent graduates of both Taa and Maarifa were given to the researcher by the deans of curriculum, and from these initial contacts, other novice teachers were located.

Researcher

Because qualitative research is interpretive in nature, the researcher must assume a role in the investigation (Creswell, 2008; Merriam, 2009). In this study, I took on the role of a nonparticipant observer; I visited all research sites and recorded notes without becoming involved in the activities of the participants. This does not, however, exclude the possibility that other strategic factors such as my own biases, values, and personal experiences shaped my interpretation of what was seen and heard (Glaser and Strauss, 1967; Guba, 1978; Roman and Apple, 1990; Creswell and Miller, 2000). Therefore, I believe it important to self-disclose a few relevant details about my personal background in order to acknowledge and establish the influence it may have had on the collection and interpretation of the data.

From 1998 to 2004 I was an overseas staff member with the Rafiki Foundation, a non-governmental organization that builds and operates orphanages, schools, and medical clinics in ten African countries. During my years in Kenya, my work entailed teaching, on a bi-weekly

basis, in Kenya's only government orphanage and helping to establish the Rafiki Village—Kenya which provides a home and education to hundreds of orphans and vulnerable children. While I was serving in Kenya with the Foundation, I also taught biblical studies each week to a class of over 500 women in Nairobi. It was through this class that I became acquainted with many influential women in the nation whose friendship I have retained, and whose connections not only helped me to obtain expedited processing of a research permit, but also a letter of introduction from the Permanent Secretary in the Ministry of Education. Upon reflection, I now realize that the receipt of such a letter by the TTC principals may have accentuated the power differential between me as the researcher and the principals as the gatekeepers of the research site. On the other hand, given the hierarchal nature of the Kenyan society, it may have been perceived as an acknowledgement by the Permanent Secretary of their position of authority, as well as a necessary and proper formality authenticating my presence in their institutions.

Though my connections in Kenya are considerable, none of the participants were told of my influential ties; I did disclose to them, however, that I had lived in Kenya for six years and had some fluency in Kiswahili. Once the participants learned that I had lived and worked in their country for many years, I was warmly accepted. "Oh, then you are Kenyan; you are one of us," they would say. I believe they were more frank and more at ease with me because of my knowledge of the country, culture, and language. I also believe that my many years living within the country and among the people, especially some of the most marginalized sectors of the population, gave me insight and understanding with regard to what I was seeing and hearing within the classrooms and during the interviews. These experiences have helped to qualify me to conduct research on the Kenyan educational system and to accurately describe and expound on it.

Design

The legitimacy of qualitative research has emerged over the past century largely due to the seminal work of Barney Glaser, Anselm Strauss, and Egon Guba. Glaser and Strauss' (1967) study provided both a theoretical framework and practical strategies for building theory by inductively analyzing social phenomena. Through Glaser and Strauss' (1967) constant comparison approach, one segment of the data is compared with another to determine differences and similarities. The data is then grouped into categories in order to identify patterns, relationships, and ultimately to generate a theory based or grounded upon the data. Guba's (1978) work also legitimized qualitative research by developing a basis for naturalistic inquiry—a study that took place in a real-world setting rather than in a laboratory or other controlled setting. Such an approach is useful when, as in this study, discovering the processes at work within the classroom is the goal. "When process is the issue, naturalistic inquiry seems to offer a more useful means for its study than does the experimental mode." (Guba, 1978, p.25)

The foundational philosophical assumption that these new approaches held was that of social constructivism. Social constructivism assumes: (a) meanings are constructed by people as they engage with the world, (b) people engage and make sense of their world based on their historical and social perspectives, and (c) meaning is socially derived out of interaction within a community. These assumptions, in turn, impact the strategy and specific methods of data collection, analysis, and interpretation that are chosen for a research study (Creswell, 2009; Merriam, 2009).

In this study, I adopted a social constructivist worldview and used a case study strategy with an educational connoisseurship approach in order to give descriptive, interpretive, evaluative, and thematic insight into how the messages transmitted by the faculty in two TTCs

are internalized and applied by novice primary school teachers. To obtain an in-depth or holistic understanding of the issue, multiple forms of data were collected through observation, interview, and a design evaluation. These three data streams were then analyzed using constant comparison. I felt that using three streams of data would establish structural corroboration and that the persistent observations would establish the internal validity needed to give insight and meaning to this phenomena.

Materials

There were two venues in this study: the TTCs and the primary school classrooms which employed novice teachers from the observed TTCs. Because the purpose in the TTC venues was to discover what knowledge was being transmitted to the novice teachers through the formal curriculum and method of instruction, the materials included a design analysis that rated seven facets of the college program of study. (See APPENDIX A DESIGN ANALYSIS OF TEACHER TRAINING COLLEGES.) These facets are an amalgamation of the principles, criteria, and standards set forth in the National Council of Teacher Quality (2010) *Evaluating the Fundamentals of Teacher Training Programs: Texas* (NCTQ), the Council of Chief State School Officers (2010) *Model Core Teaching Standards: A Resource for State Dialogue,* the National Council for the Accreditation of Teacher Education (NCATE), the National Reading Panel (NRP), and the National Council for the Teacher of Mathematics (NCTM).

Although past and pending NCTQ reviews of colleges of education within the United States are being questioned about their reliability, validity, methodology, and data collection procedures, the core standards they utilized are valid. They are particularly relevant and applicable to developing nations because of their practicality and sustainability and can be subsumed under other standards set out by organizations such as (NCATE) (C. Reed, W.

Kirwan, and N. Zimpher, correspondence with U.S. News and World Report, February 9, 2011, forwarded by K. Biraimah; NCTQ, 2010; NCATE, 2010). They were, therefore, deemed by this researcher as appropriate standards to include in the design analysis portion of this study.

The analysis of the courses (APPENDIX B RATING THE COURSES), (reading, mathematics, general education, and professional preparation) included an examination of textbooks (APPENDIX C TEXTBOOK QUALITY), schemes of work[11] (APPENDIX D SCHEMES OF WORK), and student accountability (APPENDIX E STUDENT ACCOUNTABILITY). Twenty-four college lectures conducted by eighteen different college tutors were observed (APPENDIX F TEACHER TRAININC COLLEGE LECTURE AND PRIMARY TEACHER OBSERVATION PROTOCOL). These eighteen instructors were interviewed in English after the classroom observations using the interview protocol (APPENDIX G TEACHER TRAINING COLLEGE FACULTY INTERVIEW PROTOCOL). Within the primary school venue, eleven novice teachers were observed teaching for 50 hours using the observation protocol (APPENDIX F TEACHER TRAININC COLLEGE LECTURE AND PRIMARY TEACHER OBSERVATION PROTOCOL) and they were interviewed in English using the interview protocol (APPENDIX H PRIMARY SCHOOL TEACHER INTERVIEW PROTOCOL).

Brief Description of the TTC Materials

The design analysis of the TTCs (APPENDIX A DESIGN ANALYSIS OF TEACHER TRAINING COLLEGES and APPENDIX B RATING THE COURSES) rated their program of study based on seven facets: (a) prepares teacher candidates to teach reading, (b) prepares teacher candidates to teach mathematics, (c) prepares teacher candidates to teach broad content

[11] Schemes of work are the unit plans filed by each professor with the Dean of Curriculum. They include the covered topics, sub-topics, objectives, teaching activities, learning activities, resources and means of evaluation.

areas relevant to elementary teaching, (d) prepares teacher candidates professionally, (e) offers all courses at least once a year, (f) assigns faculty to teach in areas of expertise, (g) maintains a high standard of certification.

The lecture observation instrument at the TTC venues (APPENDIX F TEACHER TRAININC COLLEGE LECTURE AND PRIMARY TEACHER OBSERVATION PROTOCOL) was a modification of the Kukic, Fister, Link, and Freston *Scales for Effective Teaching* (1989) (APPENDIX R SCALES FOR EFFECTIVE TEACHING PROTOCOL).[12] This instrument has received positive reviews in the *Mental Measurements Yearbook, 12th edition* from Bessai (1990) and Ferro (1990) as a competent means of developing a comprehensive picture of a teacher's pedagogical practice. The key strength of the Scales for Effective Teaching (SET) protocol is its ability to minimize subjectivity and maximize reliability through its behaviorally anchored rating scheme of validated characteristics of effective classrooms (Kukic et.al. 1989, Bessai, 1990, Scheerens, 2000). The purpose for using classroom observation was to observe the pedagogical practices implemented within the classrooms of the TTCs faculty in order to discover which messages were being communicated through the method of instruction. The logic of using the SET protocol to evaluate the college faculty is that those who prepare the next generation of teachers should themselves be effective practitioners in the very skills they espouse and they should also model those methods in the classroom.

The semi-structured interviews at the TTCs (APPENDIX G TEACHER TRAINING COLLEGE FACULTY INTERVIEW PROTOCOL) were conducted in English at one point-in-time and lasted between 20 and 30 minutes. They included closed-ended demographic questions as well as open-ended attitudinal and behavioral queries. The purpose for using the semi-

[12] *Note.* Used by permission from Sopris West Publishing.

structured interview method was to chronicle what the faculty said about their teaching as compared to what was observed within their classrooms regarding the teaching methods they taught and modeled.

Brief Description of the Primary Teacher Materials

The classroom observation in the primary school venue (APPENDIX F TEACHER TRAININC COLLEGE LECTURE AND PRIMARY TEACHER OBSERVATION PROTOCOL) also used the modified Kukic, Fister, Link, and Freston *Scales for Effective Teaching* (1989). The purpose for using classroom observation was to observe the pedagogical practices implemented within the classrooms of the novice teachers in order to discover which methods taught or modeled in the TTCs had been internalized and /or actualized by the novice Kenyan primary school teachers.

The semi-structured interviews of the primary teachers (APPENDIX H PRIMARY SCHOOL TEACHER INTERVIEW PROTOCOL) were conducted in English at one point-in-time and were between 20 and 30 minutes in duration. They included closed-ended demographic questions as well as open-ended attitudinal and behavioral queries. The purpose for using the semi-structured interview method was to chronicle what novice teachers said they learned in their TTCs as compared to what was observed within their classrooms regarding their teaching methods.

Procedure

A case study design was used to chronicle the messages transmitted within Kenyan TTCs through the formal curriculum and method of instruction in order to discover which messages regarding pedagogical practice are internalized within novice Kenyan primary school teachers and then actualized in their classrooms.

General Steps of Implementation

The Kenyan Ministry of Education selected two colleges from the Central Province (Taa and Maarifa Colleges) and made them accessible to the researcher. In order to determine what knowledge is transmitted to the novice teachers, a design analysis of the program of study for primary teachers, course syllabi, lectures textbooks, and supplemental materials was performed.

Eighteen lecturers from the TTCs were selected by convenience sampling. The tutors were observed over a three-week period using the SET observation protocol (APPENDIX F TEACHER TRAINING COLLEGE LECTURE AND PRIMARY TEACHER OBSERVATION PROTOCOL) in order to compare the official curriculum with the actual curriculum. A record of the tutors, colleges, classes, and times is recorded in APPENDIX S COLLEGE TEACHER TRAINING OBSERVATION LOG.

Factual information was recorded on six well-validated characteristics of effective teaching (Kukic etal. 1989, Bessai, 1990, Scheerens, 2000). Though effective schools literature links numerous characteristics that promote student growth, these six were selected because these behaviors could be observed within the limited time frame of this study. The characteristics of effective teaching that were documented were: (a) learning objectives, the teacher clearly stated what he or she expected the students to be able to do or learn because of the instruction, (b) utilization of instructional materials, the teacher used appropriate instructional materials and modified, improvised, or adapted them to meet the needs of the students, (c) instructional strategies and techniques, the teacher chose teaching techniques that facilitated the accomplishment of the learning objectives and were adapted to the needs and feedback of the students, (d) academic learning engaged time, the teacher provided group and individual learning activities in which all students could be involved, (e) instructional efficiency, the pace of

instruction was varied, was based on student feedback, and the duration of presentations and activities was age appropriate, and (f) instructional style, the teacher demonstrated personal enthusiasm and a positive attitude toward both the students and the subject matter.

Eleven alumni from the two colleges were selected using snowball sampling and followed to the primary school in which they taught. The head teachers of each school in which the novice teacher taught was contacted and permission was sought and obtained to observe and interview them. The classroom observations were conducted over a three-week period using the same modified SET observation protocol used on the college observations. What was seen and heard was recorded without making judgments or drawing inferences. A record of the teachers, schools, subjects, grade level, and times is recorded in APPENDIX T PRIMARY TEACHER OBSERVATION LOG.

The classroom observations in the TTCs and primary schools were followed by qualitative interviews in English of both the college faculty and the primary teachers using the interview protocol. The college tutors and the primary teachers were interviewed at one time, on a one-on-one basis. The interview included demographic information as well as their attitudes and beliefs about teaching and each interview took approximately 20 to 30 minutes.

Data Analysis

The design analysis of the TTCs was computed by rating the degree to which the institution met seven facets (APPENDIX A DESIGN ANALYSIS OF TEACHER TRAINING COLLEGES). The rubric used to evaluate the TTCs was adapted from Greenberg and Walsh (2008), Walsh, Glaser, and Wilcox (2006) and the National Council on Teacher Quality (2010) with the authors' permission. A final score was calculated on a weighted scale that gave more

emphasis to reading, mathematics, general education, and professional preparation courses and less to course frequency, faculty expertise, and exit standards (Table 1). The scores of the design analysis ranged between 0 and 45. Reading, mathematics, general education, and professional preparation scores were tabulated on the basis of textbook quality, schemes of work quality, and student accountability (Appendices B-E). Course frequency, faculty expertise, and exit standards were rated as either "meets the standard" (that is, all courses were held yearly, or the faculty taught in their area of expertise, or the college upheld their published exit standards) and given 45 points, or they were rated as "does not meet the standard" (that is, courses were not held yearly, or the faculty did not teach in their area of expertise, or the college did not uphold their published exit standards), and given zero points. This scale was designed to capture only the most egregious instances of course frequency, teaching assignments, and exit standards infractions. The rationale for the "all or nothing" scale was primarily pragmatic—a thorough records review was prohibited by the Ministry of Education. I had to depend on the information provided by the deans of curriculum.

The classroom observations were analyzed using the modified SET protocol (APPENDIX F TEACHER TRAINING COLLEGE LECTURE AND PRIMARY TEACHER OBSERVATION PROTOCOL). Behavioral statements from the SET performance levels were matched to the data thus minimizing subjectivity (Kukic et al.). The amount of time that both the college instructors and the primary teachers were observed was also charted (APPENDIX S TEACHER TRAINING COLLEGE LECTURE OBSERVATION LOG and APPENDIX T PRIMARY TEACHER OBSERVATION LOG).

The semi-structured interviews were coded to establish the predominate themes among the teachers and render accurate generalizations about their perceptions and attitudes about

teaching. The TTC interviews were organized into five general categories: educational background and experience, teaching style, core beliefs, resources, and professional development. The data analysis process involved organizing the interview data into meaningful categories (APPENDIX I INTERVIEW ANALYSIS CODING). Using the constant-comparative method originally developed by Glaser and Strauss (1967), data entries were compared with other data entries to establish patterns, relationships among the patterns, and emerging themes. Finally, the three elements of TTCs program evaluation, the classroom observations, and the semi-structured interviews were triangulated to answer the main research questions.

Table 1. Teacher Training College Design Protocol

Facet	**Weight of Rating**
Reading preparation	0.2
Mathematics preparation	0.2
General education preparation	0.2
Professional preparation	0.2
Courses offered once a year	0.05
Faculty teaches in area of expertise	0.05
Exit standard upheld	0.1

Limitations

Though qualitative research can help uncover the complexities of a system, phenomenon, or situation, it is not without limitations. The trustworthiness of the data quality is limited by four

key issues: credibility, transferability, dependability, and confirmability (Creswell, 2008). First, the findings and interpretations may have limited credibility due to a lack of honesty and openness by the participants. To address these concerns, this researcher conducted persistent observations and triangulated the data sources.

Second, the transferability of the results, that is how applicable the results from the Kenyan context will be to other contexts, is limited to developing nations of similar character. To address this concern, this researcher utilized thick descriptions to help increase the successful transfer to other contexts.

Third, the dependability of the results, that is the reliability of the results, was threatened by the ever-changing context within which this research occurred. To address this concern, this researcher described the changes that occurred in the setting and how those changes affected the way the research was conducted.

Fourth, the confirmability, or the degree to which the results can be confirmed and corroborated by others, was susceptible on two fronts. The very presence of the researcher may have biased the classroom behavior and the interviewees' responses. Also, the ability of people to articulate and perceive are unequal, especially in a cross-cultural setting, and may have biased the responses of the interviewees and the interpretation of the interviewer. To enhance confirmability, this researcher documented the procedures for checking and rechecking the data throughout the study. After the study, the data were triangulated by sorting through the observations, interviews, and formal curriculum data to find common themes or categories.

Delimitations

Three main delimitations bound this study. First, the literature review was limited to the past ten years of research regarding Kenyan pedagogical practices. Though it may be interesting to examine the full body of research regarding Kenyan pedagogical practices, it is more relevant for the purposes of this study to delineate the current state of educational practices in Kenya. A ten-year survey was judged sufficient to supply that information and form a sound research base.

Second, to understand the messages being transmitted by the TTCs and perceived by the teachers, only novice teachers, (that is teachers who have been in the classroom for two years or less), were studied. This categorization and selection is in harmony with the definitions of novice set forth by the Kenya Teacher Service Commission Code of Regulation for Teachers (1986).

Third, the choice of a qualitative approach and the accompanying methodologies of design analysis, observation, and interview are consistent with this type of study. Little is known about the TTCs' curriculum and method of instruction and how it is internalized and actualized by primary school teachers. A qualitative approach that includes the participants' views, stresses the context of those views, and that highlights the meaning the participants hold about educational issues provided the thick, nuanced data needed to understand this phenomenon. Additionally, it provided a platform to advocate for change and for improving the quality of education in the lives of the students (Creswell, 2008).

Assumptions

This researcher assumed that the college faculty and classroom teachers involved in this research were competent and qualified educators. Furthermore, this researcher assumed that the

responses of the college faculty and teachers in the interviews were authentic expressions and were given without collusion or coercion.

Ethical Considerations

This study conformed to the ethical code of conduct and principles set forth by the International Review Board at the University of Central Florida (SBE-11-07443) and the American Psychological Association's (APA's) *Ethical Principles of Psychologists and Code of Conduct* (2002). Specifically, this researcher only collected information from the participants' records that were "germane to the purpose of the study" (APA, 2002, 4.04(a) (b)). This researcher took "reasonable steps to disguise the identity of the participants through a coding system," maintained confidentiality in creating and storing a database, and acquired consent to do this study from the headmasters and governmental officials involved. (APA, 2002, 4.07)

Rights of the Participants

This researcher respected the dignity and worth of all participants as well as their rights to privacy, confidentiality, and self-determination. Participants' culture, race, religion, and socioeconomic status were respected by this researcher (APA, 2002). The participants were informed of the right to decline or withdraw from participating in the study. This researcher protected participants from adverse consequences of declining or withdrawing from participation through education and monitoring of the school staff. Finally, the participants were assured of the confidential nature of the study and to whom they could apply for answers to their questions (APA, 2002).

Summary

As African countries press toward the realization of EFA and UPE, quality concerns naturally emerge. This study chronicled the messages transmitted within Kenyan TTCs through the formal curriculum and method of instruction in order to discover which messages regarding pedagogical practice were internalized within novice Kenyan primary school teachers and actualized within their classrooms in order to gauge the possible impact on the quality of education. To that end, a case study design utilizing course ratings, classroom observation, and semi-structured interviews was employed. The program design analysis, course ratings, classroom observation, and semi-structured interviews were triangulated and harmonized to determine if the messages transmitted by the Kenyan TTCs' curriculum and method of instruction were being internalized and actualized by the novice primary school teachers.

CHAPTER FOUR: RESULTS

Descriptive Data

Qualitative research has been characterized as bricolage—"a pieced together set of representations that are fitted to the specifics of a complex situation" (Denzin and Lincoln, 2000, p. 4). This study on the messages transmitted within Kenyan TTCs through the formal curriculum and method of instruction is no exception; the observations of the researcher, the interviews of the classroom teachers, and the design analysis of the TTCs have been pieced together to form a judgment as to which messages regarding pedagogical practice are internalized within novice Kenyan primary school teachers and actualized in their classrooms, and how those messages may be affecting the quality of education in that nation.

Questions about Credibility

How credible are the results of this study? Can we assume that the 24 hours of observation data from the TTCs and the 50 hours of observation data from the primary schools is a representative sample of the teaching practices of the Kenyan college faculty and of the Kenyan primary teachers? Five procedures were applied to this study to help insure the credibility of the data. First, thick descriptions were recorded to provide the nuanced data needed to understand this phenomenon and to increase transfer to other contexts. Second, the data were triangulated with multiple methods (the observations, interviews, and program design) to locate common themes and thus increase validity. Third, this researcher self-disclosed her background that has shaped her interpretation. Fourth, the six-week length of the study with repeated observations allowed the researcher to build trust with the participants making them more comfortable to disclose information. Fifth, this researcher has provided clear documentation of all research decisions and activities to validate that the findings are grounded in the data.

Data Organization and Presentation

The data presentation in this chapter is organized into six main sections: (a) Data Analysis of the College Observations, (b) Data Analysis of the College Faculty Interviews, (c) Data Analysis of the Primary School Teacher Observations, (d) Data Analysis of the Primary School Teacher Interviews, (e) Design Analysis of the Formal Curriculum at the TTCs, and (f) Summary of the Data Analysis. Figure 2 is a detailed outline of both the main divisions and subdivisions in the data analysis.

Data Analysis of the College Observations

To better understand the observations, it is necessary to understand the general atmosphere and program of study at the TTCs. A typical day is comprised of seven, one hour lessons beginning at 7:30 a.m. and ending at 4:00 p.m. Sports and drama practice are held from 4:00 to 6:30 followed by evening studies from 7:30 to 10:00. Students at Kenyan TTCs study ten subjects in year one: (a) mathematics including aspects of business studies, (b) English including aspects of library science, mother tongue, and drama, (c) Kiswahili including aspects of mother tongue and drama, (d) science integrated with home science and agriculture, (e) religious education (either Christian or Islamic), (f) social studies including aspects of business, (g) professional studies including special needs education, guidance and counselling, and legal issues in education, (h) creative arts which encompasses music, art, craft, and drama, (i) physical education, (j) information communication technology (ICT) (Kenya Institute of Education, 2004). Year one students also have one session of teaching practice. In year two, they take five core subjects (English, Kiswahili, professional studies, physical education, and ICT) and choose to specialize in either the humanities (music, art, craft, social studies, religious education) or the sciences (science, home science, agriculture, mathematics). The second year students typically

have two sessions of practice teaching in a local school and must pass a final exam before they can be certified as teachers.

1. Data Analysis of the College Observations
    a. Learning Objectives
    b. Utilization of Instructional Materials
    c. Instructional Strategies and Techniques
    d. Academic Engagement
    e. Instructional Efficiency
    f. Instructional Style
    g. A Revealing Observation: Bloom's Taxonomy
2. Data Analysis of the College Interviews
    a. Educational Background and Teaching Experience
    b. Teaching Style
    c. Core Beliefs about Teaching
    d. Resources
    e. Professional Development
    f. Revealing Comments Regarding Bloom's Taxonomy
3. Data Analysis of the Primary Teacher Observations
    a. Learning Outcomes
    b. Utilization of Instructional Materials
    c. Instructional Strategies and Techniques
    d. Academic Engagement
    e. Instructional Efficiency
    f. Instructional Style
4. Data Analysis of the Primary Teacher Interviews
    a. Core Beliefs about Teaching
    b. Preparation at the TTCs
    c. Teaching Style
    d. Teaching and Contextual Factors
5. Design Analysis of the Formal Curriculum in the TTCs
    a. Course Frequency, Faculty Expertise, and Exit Standards
    b. Textbooks, Schemes of Work, and Accountability
6. Analysis Summary

Figure 2. Outline of the Data Analysis Presentation

Twenty-four hours of classroom observations were conducted at Taa and Maarifa TTCs using the modified SET protocol. Eighteen instructors were observed, nine male and nine female. The teachers, college, class, and observation times are recorded in APPENDIX S TEACHER TRAINING COLLEGE OBSERVATION LOG. Factual information was recorded on six

characteristics of effective teaching that have been identified as characteristics of effective classrooms (Kukic etal. , Bessai, 1990, Scheerens, 2000). These characteristics were selected by the researcher because they could be easily documented, and because of the time constraints of the study. What was seen and heard was recorded without making judgments or drawing inferences (APPENDIX J TEACHER TRAINING COLLEGE OBSERVATION DATA).

There are two main reasons for observing and evaluating the college faculty. First, those who prepare the next generation of teachers should themselves be effective practitioners in the very skills they espouse, and second, they should also model those methods in the classroom. Therefore, it is logical to observe and evaluate the pedagogical skill and style of the college faculty. The six characteristics that were observed by the researcher were: (a) learning objectives, the teacher clearly stated what he or she expected the students to be able to do or learn because of his or her instruction, (b) utilization of instructional materials, the teacher used appropriate instructional materials and modified, improvised, or adapted them to meet the needs of the students, (c) instructional strategies and techniques, the teacher chose teaching techniques that facilitated the accomplishment of the learning objectives and were adapted to the needs and feedback of the students, (d) academic learning engaged time, the teacher provided group and individual learning activities in which all students could be involved, (e) instructional efficiency, the pace of instruction was varied, was based on student feedback, and the duration of presentations and activities was age appropriate, and (f) instructional style, the teacher demonstrated personal enthusiasm and a positive attitude toward both the students and the subject matter. The data is presented according to these categories. The examples given in the various sections are representative of the larger data set of a particular behavior or event.

Learning Objectives

Did the teachers clearly communicate what he or she expected the students to be able to do or to learn?

During the 24 hours of observation at the TTCs, only one of the 18 lecturers began by communicating the learning objective for the class. She was a science tutor and began the class by outlining the main points of her lecture on the board and saying, "Today our point of interest is communicable and nutritional diseases. You will learn what they are, how you tell if one is contracted, and how to prevent them." The other 17 instructors either opened their notes and began reading them, or asked the students where they left off in the last session, or began by giving a brief topical statement such as, "Today we will go through the Tana River Project."

Utilization of Instructional Materials

Did the lecturers use appropriate instructional materials? Did he or she modify, improvise, or adapt materials to meet the needs of the students?

During the 24 hours of classroom observation in the colleges, eleven of the 18 instructors did not use any instructional materials other than their notes and the chalkboard. Typically, the tutors would enter the classroom carrying a well-worn file of course notes. He or she would place the file on the small table at the front of the classroom, open the file, and begin to read the notes. The students appeared to have written verbatim what the instructor read. Occasionally, the instructor would write a key word or key idea on the chalkboard for emphasis.

Two tutors used a required literature book and had students take turns reading aloud from it. Three lecturers read questions from an old exam paper as a way to review for an upcoming test. One math instructor had students cut out triangles and parallelograms from scrap paper to help them understand area, and one social studies teacher brought in eight maps for the students to examine. The failure of the tutors to use other materials during their instruction can be illustrated by the following four representative instances.

Physical Education

The physical education teacher was an energetic female instructor who, after receiving her degree, taught for two years at the secondary level. She has been at this college for the past ten years and seems well liked by both faculty and students. The physical education class was gathered in a classroom to review the game of volleyball. But instead of bringing a volleyball (which the college had) to demonstrate proper methods, the instructor waded up a tissue and used it to illustrate the various techniques. A waded up tissue, however, could not accurately relate the skills and techniques, and so the demonstration was largely ineffective.

Creative Arts

The creative arts class was learning about jewelry and ornaments. The female instructor had been teaching creative arts for 15 years at this college yet she had no examples of jewelry or ornaments to display, nor did she bring any supplies to the class for the students to examine. Ironically, she emphasized the need to improvise materials when none were available.

Math

This math class was taught by a female teacher who had been with the school for 12 years. She had taught at the secondary level for four years before coming to this college. Her class was reviewing teaching and learning aids, but instead of bringing the place value trays, place value pockets, and fraction boards (which this researcher saw in the staff room), the instructor drew them on the chalkboard while verbally relating detailed instructions on how to make the materials.

Education

The education instructor was a male teacher who also served as the examination officer. He had a master's degree in education, but the only teaching experience he had was at the college level. During class, he spoke on the importance of using graphic materials and audio visual equipment to help students visualize and understand, but the entire lecture was done without the use of any graphic materials or audio visual equipment. Quite a bit of the lecture was spent on using radio broadcasts in the lessons. However, when the tutor asked how many of the primary schools in which the students were posted had radios, his students replied that none of the primary schools had them. None of the primary schools I visited had a radio either.

Instructional Strategies and Techniques

Did the tutor use teaching techniques that facilitated the accomplishment of the learning objectives? Were they adapted to the needs of the students?

Two-thirds of the tutors that I observed at the colleges used instructional techniques and strategies which did not relate specifically to the learning objective. Specifically, these instructors read their notes while the students appeared to copy verbatim what was read to them. Occasionally the tutor asked a question or asked the students to recite the point he or she had just given. In the weeks I spent at the colleges, I never heard a question posed by a student to the instructor. This could have been due to my presence, but because the instructors never commented on the lack of questions, I believe this was standard operating procedures for the classrooms. There were, however, several exceptions to the read notes/take notes strategy. The following are representative situations of what I observed.

Social Studies

The social studies teacher that I observed has been teaching at Maarifa for 16 years. She brought eight maps of Kenya to class and had the students divide into eight groups to examine the maps and practice scale measurement. As the groups worked out various problems, she moved around the room and corrected errors and clarified terms and procedures. This was the only true group work that I observed in the 24 hours of classroom observation at the colleges.

Education

The topic was comparative education in East Africa. Two groups presented information about education in Kenya and Tanzania (the Uganda group presented in the last class session). One group member stood and read the notes the group had compiled about the country it had been assigned. However, the main points given about Kenya did not correlate with the main points given about Tanzania. There was, in other words, no ability to compare the education between the East African countries nor did the instructor attempt to make a comparison after the presentations. Though this was technically group work, only one student presented from each group and the presentation by the students modeled the read notes/take notes strategy they had repeatedly experienced.

English

Two of the English classes I visited were reading *Scarlet Song* by Mariama Ba. Both classes were taught by veteran female teachers who had been with the colleges for over ten years. At the beginning of the class, the students moved into groups. This was not because there was going to be group work, but rather it was because they needed to share a book. Each class had about 35 students that shared 7 books. Though the classes were conducted by different instructors, both followed the same plan of having a student read a paragraph aloud and then having the class discuss the vocabulary and main ideas from that paragraph as a class.

Academic Engagement

Did the tutor provide group and individual learning activities in which all students could be involved?

Academic engagement refers to the time in which students are involved in learning activities. Fifteen of the 18 instructors that I observed provided little or no opportunity for student involvement while three tutors provided opportunity for most students to be engaged. Those who provided little or no opportunity for student involvement read their notes and asked a few questions, which meant that the extent of student engagement was limited to note taking. The three exceptions were in a social studies class, a maths class, and a Christian religious education (CRE) class.

Social Studies

The social studies class was led by a female tutor who had been at the college for 16 years and had taught for three years in a secondary school. She brought eight maps of Kenya and had the class move into small groups, one map for each group. The groups self-formed and were gender mixed. The instructor gave several measuring problems and scale problems for the class to solve. She moved between groups and gave correction and explanation. A lack of measuring instruments (only two rulers and two protractors in this class of 35) meant sharing between the groups which they did with great ease. All were bent over the maps and intently engaged in the problems. I did notice, however, that in some groups the same person performed all the measurements while the other members watched or gave advice. The students genuinely enjoyed the activity and seemed to be helped by the peer discussions within the group.

Math

The math class was led by a male tutor who had been at the college for over 20 years and who was the department head. He entered the room with his well worn file of notes and stated that the topic would be how to find the area of a parallelogram and triangle. He had the students cut out a parallelogram and a triangle from scrap paper. This was a slow process because no one had scissors; a few had razor blades and these were passed around the room, but the majority tore the shapes. Why the shapes needed to be cut out was unclear; they could have just as easily drawn the polygons and calculated the area. Although all the students were actively involved in the lesson, the activity really did not serve a purpose that I could understand. Notably there was no instruction on how to teach primary students to find the areas of these polygons.

CRE

In Kenya, either CRE or Islamic religious education (IRE) is part of the primary syllabus. In one CRE class, the female instructor, who had taught for over 15 years in the college, twice asked the students to "Explain to your neighbor the difference between joy and happiness/pride and humility." After two to three minutes, the instructor would point in a rather accusatory manner to a student and ask "What did he say?" and the student would have to report what his or her partner had said. The tutor would then evaluate the response by how close the person had come to giving the definition the teacher had read previously in the notes. If it was not within the parameter of the notes, it was judged as incorrect or incomplete even though a number of the statements made by the students were relevant and reasonable. This firm adherence to the notes was a common thread in all of the classes—little "out-of-the-box" thinking or responding was allowed by the tutors.

Instructional Efficiency

Did the instructors vary the pace of instruction based on student feedback or on the type of activity or presentation?

Seventeen of the 18 tutors' instruction that I observed occurred independent of any student feedback. This, I believe, was largely because of the note giving/note taking style of instruction. All instructors carried with them a well-worn file of notes to each classroom. The files were almost always immediately opened, and the tutors would then commence reading the notes at a steady, practiced pace. In the 24 hours of observation, I never heard a student ask for something to be repeated or clarified. The one exception in which the pace of much of the instruction was based on student feedback was in the social studies class on map reading. The students were in small groups and were solving scale measurement problems. The instructor, as she went from group to group, noticed that the majority of students were miscalculating the scale problems. She stopped the group work and reviewed ratios and scales. In that same class, several groups measured distances between map points incorrectly, and because the instructor was monitoring the group work, again stopped and reviewed the proper technique for measuring distances. She did so with a bit of humor by telling the students they must have taken a short-cut on the last measurement.

Instructional Style

Did the teacher demonstrate personal enthusiasm and a positive attitude toward both the students and the subject matter?

Thirteen of the 18 instructors that I observed demonstrated little or no enthusiasm toward students or the subject matter. The instructors seemed bored with the material and read their notes without enthusiasm, eye contact, change in tone, or body movement. Their presentations were flat and they had little to no interaction with the students. The five exceptions were in a

social studies class, a science class, a creative arts class, an English class, and a physical education class.

Social Studies

This was the same instructor who had brought the maps in for the previously observed class to practice measurements and map reading. She entered the room carrying her notes, as all instructors do, opened them and laid them on the small table at the front of the classroom. As she spoke, she would at times read directly from the notes, but she was not tied to them as other tutors were. She was lively in her presentation, smiled and joked, called on students by name, and frequently gave positive feedback to the students during group work. She maintained a high level of personal and student enthusiasm and was positive toward the students and the subject matter.

Science

This science teacher was a female lecturer who had been with the college for ten years. She clearly outlined the lesson objectives and the main points she would be covering, namely communicable and nutritional diseases. Though there were over 50 pupils in the class, the tutor called students by name and gave numerous comments of affirmation to those who answered her questions correctly. Most of the 18 tutors that I observed would point to a student, but this science teacher knew the students' names which evidenced her personal interest in them.

As the lesson proceeded, she became quite animated when speaking about nutrition. At one point as she spoke on how nutritionally imbalanced the traditional weaning food in Kenya was (green bananas, potatoes, and greens), and challenged the students, "Transform your society! This food is not nutritionally sound." In other words she was linking subject content with practical application—something rarely done in the other classes that I observed.

There was one other event that occurred during this lesson that was filled with great irony. As the instructor spoke on nutritional diseases such as kwashiorkor and marasmus, her lecture was interrupted by a college administrator. He announced to the class that only those who had a numbered card (which he distributed) would be allowed to eat lunch and dinner. Only ten students in this large class of 50 received the card—the rest would go hungry until their school fees were paid. Because of the rural setting of the school, many would undoubtedly go without food until their parents wired money. Ironically, the issue of malnutrition in Kenya was brought to a very personal level.

Creative Arts

Like the science teacher, the creative arts tutor maintained a high level of personal and student enthusiasm. He evidenced a close relationship with his pupils by commenting to them, "You have just returned from your posting in schools. Some have done very well. In fact, I heard reports that the children were weeping when you left. You have made a change in their schools and in their lives. This is the heart of teaching." Though the class was a review of an old exam paper in preparation for an upcoming exam, his revision was done extemporaneously and was lively. He was careful to elicit answers from most of the students and kept their interest by sketching examples on the board.

A Revealing Observation: Bloom's Taxonomy

During a maths class in which the tutor lectured on the importance of evaluation and continuous assessment, she referred to Bloom's Taxonomy[13] as the foundation for generating test questions. She asked the class to list the levels of the taxonomy, and then said, "Of course in

[13] At both TTCs, the faculty referred to the original 1956 Bloom's Taxonomy. None were aware of the revised Taxonomy.

primary we are only interested in the first three levels. The rest are for secondary." This was stated as a fact and it went unquestioned or unchallenged by the students.

Data Analysis of the College Interviews

Enlisting the support of the deans of curriculum from both Maarifa and Taa TTCs was critical in order to gain access and cooperation from the faculty. Although I had received a research permit and a letter of introduction from the National Council of Science and Technology, I still needed to request permission from the Kikuyu and Murang'a District Commissioners and District Education Officers. Because there was no published list of district phone numbers, physical addresses, or e-mail addresses, I had to drive to each district and ask directions to the offices from a passerby or vendor. Once I found the offices, I often had to wait until the official had time or was scheduled to return to the office. All eventually granted permission and wrote letters to that effect (APPENDIX Q PERMISSION TO DO RESEARCH IN KENYA). These letters were given to both college deans, however, the dean from Maarifa TTC, even with the letters, initially refused to cooperate. "Your research permit states that you have clearance until 2014. Come back another year." His reticence to allow me access to his faculty was founded upon a bad experience with a researcher from Denmark who interrupted classes and who made demands on the time of the faculty. Though I assured him I would do neither, he told me to call next week when he would make his final decision.

I placed a call to the Director of Adult Education in Kenya, an acquaintance of mine, and she was able to speak with the Permanent Secretary at the Ministry of Education. The Permanent Secretary arranged to have a letter written instructing the colleges and primary schools to cooperate with this research project. I collected the letter the next day from Jogoo House, (Ministry of Education) and delivered it to both colleges. The letter enabled me to gain access to

the colleges; however, it did not afford me complete cooperation. The deans informed me that I would be allowed to observe in the classrooms, but no formal interviews, written surveys, or tape recordings were allowed.

With my ability to interview the faculty severely curtailed, I did two things. First, I memorized the interview questions and second, I asked as many of the questions as I could while I walked with the instructor to and from the faculty lounge. Each interview took between 20 and 30 minutes. The key was to make the quasi-interview conversational and brief. In this way, I managed to get nine full interviews and seven partial interviews from the TTCs faculty (APPENDIX K TEACHER TRAINING COLLEGE INTERVIEW DATA). Two members hurriedly left the classroom leaving me with no opportunity to speak with them. The results of the full and partial interviews were coded and grouped by key words in order to compare the data and establish major themes. They are presented by the questions I asked the instructors (APPENDIX G TEACHER TRAINING COLLEGE FACULTY INTERVIEW PROTOCOL) and the themes that emerged from their responses (APPENDIX I INTERVIEW ANALYSIS CODING).

Educational Background and Teaching Experience

Sixteen of the quasi-interviewed faculty had a bachelor's degree and of these, three had continued their education and earned a master's degree. Three of the tutors had taught in a primary school, six had taught in a secondary school, and seven had been posted to the TTCs straight out of college with no primary or secondary teaching experience.

Teaching-Style

Fifteen of the sixteen tutors characterized their teaching-style as student-centered. When asked what they meant by student-centered, most stated that it meant they involved the students

with questions and discussion. One female instructor who taught mathematics described her teaching as a mixture of lectures and notes, questions and answers. Her comments highlighting time constraints, a full syllabus, and the responsibility of student learning placed on the teacher are representative of the thoughts of many of her colleagues.

> I try to involve the students, but there is very little time. We would never cover the syllabus if we did activities. I tried once to shift the responsibility for the material onto the students. I told them I would not teach on decimals until they had read the chapter and completed an assignment. That class never read it; they never learned decimals. You see the pressure is on the tutor to teach. They expect you to give them the notes. They do not read on their own and they don't do assignments. This is what they are used to doing. It is not a good system here in Kenya.

Core Beliefs about Teaching

Three of the questions sought to elicit the tutors' core beliefs about teaching. They were asked: (a) If you were invited to give a seminar to pre-service teachers, what subjects or topics would you present? (b) What do you hope to accomplish in the lives of pre-service teachers? (c) If you were to visit the classroom of one of your former students, what would you hope to see them doing? How would you know that you had been successful?

Four topics emerged as central in the minds and hearts of the instructors: curriculum, practical/interactive teaching, ethics and morals, and child development. Regarding the curriculum or syllabus, the tutors recognized the centrality and importance of teaching it, but several also expressed a frustration at being driven by the mandate to complete the syllabus.

They felt this undermined their ability to do more practical or interactive teaching. As one male English tutor explained:

> There should be a relationship and interaction between the teacher and the student, but there is so much push for academics and performance on the exams. There is no time for interactive teaching. We must move through the syllabus. There is no time for in-depth discussion or points of interest. We must complete the syllabus.

The tutors voiced the importance of practical, interactive teaching, but felt helpless to implement it within their own classrooms.

> There is no time for this. We would never cover the syllabus. The other day we were covering prisms. I could have had the students spend the two hours exploring nets and other activities, but this is just one small part of the syllabus. It would be at the expense of something else.

Their core belief in using practical activities was tied to their knowledge of child development and the need to involve the student in his or her learning. Several mentioned Montessori as a model they would like to explore, but could not see how it could be implemented given the realities of a Kenyan classroom. Finally, many of the instructors voiced the need to impart ethics and morals into the lives of their students. As one male education tutor stated, "They are young and we are turning them over to be models to the children. We must make sure they have proper ethics and morals."

Resources

Two of the interview questions probed the sufficiency of classroom materials, audio-visual materials, and other teaching resources. All of the tutors stated that books and other resources were in short supply. The students are required to purchase 12 textbooks, 6 novels, 2 dictionaries, and numerous other resources (mathematical instruments, sewing supplies, computer supplies, art supplies, musical instruments, etc.) before they can be admitted to the school. However, most students cannot afford the price of one textbook let alone 12. One female instructor explained the strategy the students had developed to get around the textbook requirement:

> The students don't have books. Okay, what happens is that they are required to purchase the books when they come to college. But what they do is they borrow the books and get in the registration line and show the books. Then they give them back. The books are passed around the registration lines. The students don't have money for the books so they are dependent on you to give them your notes. That is why you read your notes.

A female education teacher commented, "We have no books, no maps, no charts, no laboratory equipment, no internet, and the library is empty." The frustration of teaching without resources and how it hampered both the amount of material they could cover and how they covered it was echoed by all the tutors.

Professional Development

The last two questions focused on the tutors' ongoing professional development. The first question asked what professional journals or publications they read. None of the instructors had access to these resources. The second question asked if they had attended any workshops or

seminars in the last year and how they had implemented the information. Only one of the tutors had been to a workshop. She had just returned from a math seminar.

> For the past two years we have gone to a workshop to train us how to train the teachers. This one gave us an opportunity to use practical activities. Like in algebra, we would just write 20 + X = 50 and show them on the board how to solve it. Now I learned that if I begin using cards for the numbers and cards for the letters and insert them, the students get it very quickly.

Some expressed a sense of hopelessness about professional development. "No, there is no chance for professional development. Even if I did have professional development, I could not implement it. We have a structured syllabus that does not allow changes." Others stated that in the past international bodies like the British Council had provided opportunities for professional growth, but that practice had ceased many years ago. Still others stated that one time the department head had gone for computer training and when he returned he gave them the information, "It was cascade. But we don't have computers so we could not implement."

Revealing Comments Regarding Bloom's Taxonomy

After hearing one of the math tutors state that only the first three levels of Bloom's Taxonomy applied to primary school students, I began to specifically ask other instructors, especially the education teachers, how they viewed the cognitive processes described by the taxonomy as applying to primary aged children. The math tutor who had made the statement in class confirmed that teaching to the first three cognitive levels of Bloom's was an accurate statement of how the taxonomy was applied in the TTCs and primary schools.

> In primary it is the first three levels. Consider the examinations in primary; they are 100% objective and multiple choice. The analysis, evaluating, and synthesizing do not occur. We teach for the exams; I teach for the exams. We teach how to do the exam questions. What happens is there is a lot of cramming. It is a system based on who can remember the most factual information. When you ask second year students some material that was covered in the first year, they cannot remember. It was learned for the exam and then forgotten. It is unfortunate, but that is where we are. I have heard the Ministry is going to overhaul the system to promote more thinking, more problem solving. I hope they make those changes.

The Examination Officer who also taught many of the education classes at one of the TTCs responded to my query about the application of Bloom's Taxonomy in the primary school saying, "Well, Bloom's gives us those domains and some can be applied to primary, but a better understanding is through Piaget. It is better to match the learners to the stages that Piaget sets out. In that way you link knowledge with activities. You see, we must have child centered education. This is what is set forth in the syllabus. Have you seen the syllabus?" He then opened to the front pages of the syllabus and read from the objectives of primary education.

> 2.1.1 Bearing in mind the child as the center of education, teacher education should prepare teachers who can: (i) provide suitable learning opportunities; (ii) develop the child's communicative skills; (iii) develop the individual child's potential abilities to the maximum through a variety of creative learning experiences; (iv) develop the child's sense of citizenship and National (sic) attitude; (v) develop awareness of and appreciation for other national and

> international community; (vi) develop the child's ability in critical and imaginative thinking in problem solving and self/expression; (vii) develop positive attitude to the moral and religious values of his community. (Kenya Institute of Education, 2004, p. ix)

I asked him what his understanding of a child-centered education was, and how this was taught at the college. He replied, "Child-centered means involving the learner; it means participation; it means the focus of the lesson is on activities. This is the essence; is my teaching a monologue or is it a dialogue? The teacher and learner are both involved by asking questions of the child."

I questioned two other education tutors about their understanding of Bloom's Taxonomy. Both stated that at the TTCs all levels are used. When I asked each to give me an example of how they incorporated the higher cognitive levels into their lessons, they replied that they, as instructors, had to analyze and evaluate the students' schemes of work. One of the tutors could not state how they asked the students to analyze, synthesize, or evaluate, while the other said that after teaching practice, the students had to reflect on how the lesson had gone. When I asked if primary students are taught using all the cognitive processes, they answered that it was mostly the lower levels, with the higher levels covered more in secondary school and college.

Design Analysis of the Formal Curriculum in the Teacher Training Colleges

In order to discover what knowledge was being transmitted to the novice teachers through the formal curriculum, a design analysis rated seven facets of the college program of study: (a) prepares teacher candidates to teach reading, (b) prepares teacher candidates to teach mathematics, (c) prepares teacher candidates to teach broad content areas relevant to elementary teaching, (d) prepares teacher candidates professionally, (e) offers all courses at least once a

year, (f) assigns faculty to teach in area of expertise, (g) maintains a high standard of certification (APPENDIX A DESIGN ANALYSIS OF TEACHER TRAINING COLLEGES). This involved collecting, examining, and rating the schemes of work[14] on file with the deans of curriculum at the TTCs, and the official textbooks for reading, mathematics, education, and two general content areas (Appendices A – E).

Taking an expertise-orientation, the design evaluation of the formal curriculum for the two colleges was approached using an educational connoisseurship approach. Like critics of the arts, an educational connoisseur brings his or her expertise into the evaluation process through description, interpretation, evaluation, and thematic analysis (identifying dominant features or pervasive qualities). It is descriptive in nature; it is field focused, and centrally concerned with what gives teaching and curriculum its distinctive character and purpose. The word connoisseur comes from the Latin *cognoscere* which means to know or to understand. The educational connoisseur knows what to look for and is able to bring understanding of the school or classroom experience. She takes into consideration the complexities of the real-world settings and possesses the perceptual acuity to make sense of them using established criteria and standards (Eisner, 2002; Vars, 2002; Eisner, 2000; Fitzpatrick, Sanders, and Worthen, 2004).

The logic of such an evaluation entails: (a) establishing criteria of merit, (b) constructing standards, (c) measuring performance and comparing it with the standards, and (d) synthesizing and integrating data into a judgment of merit or worth (Fournier, 1995; Scriven, 1999; Eisner, 2000; Fitzpatrick, Sanders, and Worthen, 2004). The criteria and standards in this analysis were an amalgamation of those put forth by the National Council for the Accreditation of Teacher Education (NCATE, 2010), the National Council of Teacher Quality (NCTQ, 2010), Teacher

[14] A scheme of work is the Kenyan equivalent of a U.S. course syllabus.

Education Accreditation Council (TEAC, 2011), the National Reading Panel (NRP, 2000), and the National Council of Teachers of Mathematics (NCTM, 2009). Though it is true that these are U.S. based organizations, the principles, criteria, and standards utilized were kept general enough to address the design facets that were scrutinized in the Kenyan TTCs. For example TEAC (2011) states regarding faculty expertise:

> Faculty members must be qualified to teach the courses in the program to which they are assigned, as evidenced by advanced degrees held, scholarship, advanced study, contributions to the field, and professional experience. TEAC requires that a majority of the faculty members must hold a graduate or doctoral level degree in subjects appropriate to teach the education program of study and curricula. (TEAC, 2011, p.4)

In Kenya, only 1.2% of secondary graduates matriculate to the university and even fewer earn advanced degrees (Ministry of Education, 1999). Because of this, it would be unrealistic to expect TTC faculty to hold advanced degrees, but it would be realistic to expect them to have baccalaureate degrees and to teach classes within that degree. Therefore, the above criteria was adapted to "the faculty teach in their area of expertise" in order to reflect the current Kenyan context.

The design analysis was computed by rating the degree to which the institutions met each facet and calculating the final score on a weighted scale with a range of scores between 0 and 45. Course frequency, faculty expertise, and exit standards were rated as either "meets the standard" (that is, all courses were held yearly, or the faculty taught in their area of expertise, or the college upheld their published exit standards) and given 45 points, or they were rated as "does not meet

the standard" (that is, courses were not held yearly, or the faculty did not teach in their area of expertise, or the college did not uphold their published exit standards), and given zero points. This scale was designed to capture only the most egregious instances of course frequency, teaching assignments, and exit standards infractions. The rationale for the "all or nothing" scale was primarily pragmatic—a thorough records review was prohibited by the Ministry of Education. I had to depend on the information provided by the deans of curriculum.

Reading, mathematics, general studies, and professional preparation courses at the TTCs were assessed by rating the course textbook quality, the published scheme of work, and the student accountability. The rubric used to evaluate the TTCs was adapted from Greenberg and Walsh (2008), Walsh, Glaser, and Wilcox (2006) and the National Council on Teacher Quality (2010) with the authors' permission and founded upon the principles and standards set forth by NCATE (2010), TEAC (2011), NRP (2000), and NCTM (2009). These were multiplied by the assigned weight for the summative design evaluation. A final score was calculated on a weighted scale that gave more emphasis to reading, mathematics, general education, and professional preparation courses and less to course frequency, faculty expertise, and exit standards.

Regarding textbooks, if the text accurately and thoroughly covered five key areas of the subject, it could receive a maximum score of 15 points. If the text did not cover all five key areas of the subject, each subject area that was not addressed received a score of one, two, or three depending on the accuracy and thoroughness of the coverage. If the text was neither accurate nor complete in any of the areas, it received score of a zero. Even though few of the college students had textbooks, all of the instructors did have them and used them as a basis for their notes and lectures. Therefore, the textbooks do impact the formal curriculum in the TTCs and a review of them is valid.

Regarding schemes of work, each scheme was analyzed for the frequency that a particular component was taught with a maximum score of three for each component. If no lectures were dedicated to a key component, it received a score of zero. If part of one lecture was dedicated to a certain component, it received a score of one. If one whole lecture was dedicated to a certain component, it received a score of two. If two or more lectures were dedicated to a certain component, it received a score of three. The scores ranged from zero to 15.

Regarding student accountability, three primary means for holding students accountable for demonstrating their knowledge of a content area were assessed: (a) homework, (b) quizzes, tests, and exams, and (c) practice teaching. Each of these accountability areas was rated zero if there was no evidence of any assignments, assessments, or practice teaching in the key areas. It was rated one if part of an assignment, assessment or practice teaching dealt with the key areas. It was rated two if one assignment, assessment, or practice teaching dealt with the key areas. It was rated three if more than one assignment, assessment, or practice teaching dealt with the key areas. The scores ranged from zero to 15.

The individual analyses of textbooks, schemes of work, and accountability are located in APPENDIX C TEXTBOOK QUALITY, APPENDIX D SCHEMES OF WORK QUALITY, and APPENDIX E STUDENT ACCOUNTABILITY, and the summative results of the TTC design analysis are in Tables 3 and 4. A school scoring at 70% or better (31.5 points) was considered to have a stronger design. A school scoring below 70% (less than 31.5 points) was considered to have a weaker design. Both Taa and Maarifa TTCs evidenced a stronger formal curriculum design scoring 35.16 and 35.72 respectively.

Course Frequency, Faculty Expertise, and Exit Standards

The Taa and Maarifa course of study for students is a fixed program and therefore all courses are offered yearly. Regarding faculty expertise, the deans of curriculum in both colleges stated that all faculty members teach in their area of expertise, (though I was not allowed to independently confirm the veracity of this fact). Finally, all students are required to qualify in the teaching practice competencies, take exams in all courses, and pass an exit exam before receiving a diploma as a primary teacher. Both Taa and Maarifa colleges met the standard for these facets and received full points (45) in each category.

Table 2. Taa College Design Analysis Summary

Facet	**Weight of Rating**	**Multiplied by**	**Individual Score (Range 0-45)**	**Weighted Score (Range 0-45)**
Reading preparation	0.2	X	19.08	5.22
Mathematics preparation	0.2	X	33.33	6.67
General education preparation	0.2	X	37.33	7.47
Professional preparation	0.2	X	34	6.8
Courses offered once a year	0.05	X	45	2.25
Faculty teaches in area of expertise	0.05	X	45	2.25
Exit standard upheld	0.1	X	45	4.5
Total Institution Score				35.16
Name of Institution Taa				

Table 3. Maarifa College Design Analysis Summary

Facet	Weight of Rating	Multiplied by	Individual Score (Range 0-45)	Weighted Score (Range 0-45)
Reading preparation	0.2	X	26.75	5.35
Mathematics preparation	0.2	X	34.33	6.87
General education preparation	0.2	X	35.84	7.17
Professional preparation	0.2	X	36.67	7.33
Courses offered once a year	0.05	X	45	2.25
Faculty teaches in area of expertise	0.05	X	45	2.25
Exit standard upheld	0.1	X	45	4.5
Total Institution Score				35.72
Name of Institution Maarifa				

Textbooks, Schemes of Work, and Accountability

Textbooks

All public teacher training colleges are required to use the same textbooks. The mathematics, science, social studies, and teacher education texts scored between 10 and 12 points out of 15 possible (APPENDIX C TEXTBOOK QUALITY). Points were usually subtracted because of a lack of coverage. For example, in the teacher training texts, the topic of curriculum was omitted in one book and slightly mentioned in the other. The texts used for reading preparation received the lowest score, 4.75 out of 15. The topics of comprehension, fluency, and vocabulary received one to two paragraphs while phonemic awareness was not mentioned in one of the texts. Phonics was covered in both texts but without much depth or detailed strategies for implementation.

Schemes of Work

The schemes of work are the Kenyan equivalent of a U.S. course syllabus. The schemes for the various courses were on file with the deans of curriculum. Almost all were handwritten and dated 2004/2005 which corresponded to the adoption of the new primary teacher training college syllabus. Some of the schemes were difficult to read and were also lacking in details. Neither school had a copy machine nor was I allowed to leave the campus with the documents to make copies. Data collection on the schemes, therefore, was limited to what I could hand-write over a period of six hours in each institution.

The framework for the schemes of work was the Primary Teacher Education Syllabus (KIE, 2004). The instructors, it seemed, copied the main points from the course summary given in the syllabus, plotted out a teaching timeline, copied or reworded the objectives given in the syllabus, and added the teacher/learner activities, resources, and evaluation strategies that were listed at the back of the syllabus. Table 5 is a sample of a portion of the mathematics scheme of work from one of the colleges and Table 6 is the same material as it is laid out in the Primary Teacher Education Syllabus (KIE, 2004). A comparison of the scheme with the syllabus reveals that the schemes are largely a simple reconfiguration of the Primary Teacher Education Syllabus (KIE, 2004).The other schemes that I examined had similar reconfigurations and similar generic, non-specific entries for teacher activity, learner activity, and evaluation. From a content and coverage point of view, all the schemes of work scored perfect marks. The instructors had successfully mapped out a strategy for covering the content of the syllabus within the specified time period (APPENDIX D SCHEMES OF WORK).

Table 4. Partial Math Scheme of Work

Number of Lectures	Topic	Objective	Teacher Activity	Learner Activity	Resource	Evaluation
1	Multiplication as repeated addition	Identify activities that show multiplication as repeated addition and as an array	Demonstrate, give examples, illustrate, discuss, give notes, ask questions	Copy notes, answer questions, discuss, solve problems	Indimuli et al (2009)	Oral and written
1	Multiplication, array					
2	Development stages of teaching multiplication	Identify development stages of teaching multiplication				
1	Approximate products	Approximate products				
2	Common errors, sources of errors and remedial work in multiplication	Identify and correct common errors in multiplication				

Table 5. Math Syllabus Excerpt

4.2.0 Multiplication and Division
4.2.1 Specific Objective
At the end of the topic, the learner should be able to: a) Identify activities that show multiplication as repeated addition and as a rectangular arrangement (array) b) Identify development stages of teaching multiplication c) Approximate products d) Identify and correct common errors in multiplication
4.2.2 Content
4.2.2.1 Multiplication as repeated addition
4.2.2.2 Rectangular arrangement (array)
4.2.2.3 Developmental stages of teaching multiplication
4.2.2.4 Approximate products
4.2.2.5 Common errors, sources of errors and remedial work in multiplication

Accountability

Student accountability was the third facet used to rate the courses (APPENDIX E STUDENT ACCOUNTABILITY). The schemes of work were examined to find evidence that the students demonstrated their knowledge of the subject through graded homework assignments, quizzes, tests, and exams, and in teaching practice. Because of the exam-oriented education in Kenya, all the schemes had scheduled examinations. Often not recorded were instances of graded homework and evaluations of practice teaching to demonstrate they had applied the skills and concepts taught at the TTC.

Data Analysis of the Primary Teacher Observations

The deans of the two TTCs each gave me the names of two recent graduates of their colleges. Using snowball sampling, I located nine more graduates who had been posted to primary schools in the Central Province and who were willing to be in the study.

Locating the students and finding their schools was a time consuming and arduous process because of poor telephone connections and the two major road construction projects that are underway within the country. Though mobile phones are ubiquitous throughout Kenya, the providers frequently shut down the phones due to spikes in usage, and often the connections are faint and filled with static. If I was trying to find a school and needed further clarifications on the directions, my driver would have to pull over to the side of the road and turn the engine off so I could hop out of the car and hear the other person.

The Thika Road and Bypass Road construction projects mounted another challenge. Thika Road bisects the country north and south, and the Bypass Road will roughly connect the country east and west—from the Jomo Kenyatta Airport to Sudan. Currently, no matter where you travel, your trip will be impacted by congestion, construction, and construction delays. Until we found an alternative route to the Kikuyu District, my driver and I would leave the Rafiki Village, where I was staying, at 6:15 a.m. to avoid (usually unsuccessfully) the congestion on Thika Road. We would often return 12 hours later after fighting the traffic, once again, all the way home. Roads and round-a-bouts that were on the map were often swallowed up by excavations with no marked detour in sight, leaving us to guess how to get to the destination. The drive to Murang'a District was equally challenging; the 60 mile trip could take anywhere from 90 minutes on a good day to three tortuous hours on a bad day. Altogether, I logged about 1, 900 miles on this study—roughly the distance from Orlando, Florida to Salt Lake City, Utah.

Probably one of the most difficult schools to access was the one located within the Mathare slum, one of the largest slums in Kenya with a population estimated at 700, 000 (KCBS, 2010). The slum is a tightly packed maze of unmarked, narrow, deeply potholed, dirt streets; there are no street numbers or street lights. There are no city services such as trash collection or fire protection; water and power are scarce and frequently interrupted. High rise buildings that are roughly constructed of unfinished cement blocks make it impossible to see anything but what is directly ahead and behind.

We were not exactly sure of the school's location; we had general directions to get us close and then had to rely on street vendors to direct us. We crawled through the streets vying with goats, donkeys, dogs, and people for space on the road. We had been making our way through the slum for about 90 minutes when we finally found the street on which the school was located. The street, however, was impassable by car. James, my driver, parked the car and I told him to stay with it lest we return to a shell that once was a Toyota. I began to make my way up the hilly street in the direction we had been told the school was located. Raw sewage was running down the middle of the street which made navigation in my heels and skirt even more tenuous. As I turned the corner toward the school, the thought went through my mind, "If I were to get lost or mugged, I wonder how long I would have to wait until James came looking for me?" It was the only time I felt afraid and a bit vulnerable. Fortunately, I found the entrance to the school without either happening to me, and I was warmly received by the head teacher.

Eleven novice primary teachers, seven male and four female, were observed within their classrooms over a three week period using the modified SET protocol. A total of 50 hours of observations were recorded on the six characteristics of effective teaching: (a) learning objectives, (b) utilization of instructional materials, (c) instructional strategies and techniques,

(d) academic learning engaged time, (e) instructional efficiency, and (f) instructional style. These characteristics were selected by the researcher because they could be easily documented, and because of the time constraints of the study. What was seen and heard was recorded without making judgments or drawing inferences (APPENDIX L PRIMARY TEACHER OBSERVATION DATA). Classes varied in length from 45 to 55 minutes depending on the school and the level.

Learning Objectives

Did the teachers clearly communicate what he or she expected the students to be able to do or to learn?

Like the college lecturers, the primary teachers carried a file containing subject notes into the classroom. All began the lesson by drawing two vertical lines on the board that divided the chalkboard into three sections. The date was written at the top right section, the topic in the center section, and the left section was left blank. None of the eleven teachers that I observed during the 50 hours of observation communicated the learning objective for the class. A topic statement was the closest any of the teachers came to stating a learning objective. Some examples of the types of statements that were given are: "Today we continue with plants." "We will review livestock parasites." "We will revise pressure in liquids for the exam." The teacher would then either begin to read her notes or lecture on the topic while writing down the key points on the board.

Utilization of Instructional Materials

Did the teachers use appropriate instructional materials? Did he or she modify, improvise, or adapt materials to meet the needs of the students?

For 43 of the 50 classroom observations that I conducted in the primary classrooms the teachers used only the chalkboard for instruction. Though it is true that educational resources are scarce in developing nations such as Kenya, the lack of any effort to improvise materials was

overwhelming. For example: (a)A review of division in a Standard Two Class was conducted without manipulatives—even easily accessible manipulatives such as the stack of books on the teacher's desk-; (b) in a lesson on plant structure in a Standard Two Class, the plant parts were drawn on the board even though the school was surrounded by gardens filled with plants that could have easily been observed; and (c) the parts of a bicycle were drawn on the board during a vocabulary lesson in a Standard Four Class even though a bicycle was parked next to the administration block and could have been wheeled into the room.

During seven of the 50 classroom observations, the teacher used something other than the chalkboard. Three times, the teacher used an old test to generate questions for the students to answer. The other four times, the teacher actually brought in instructional materials that related specifically to the learning objective. All of these were in science classes and the specifics of those incidents follow.

Science, Standard Five Class

This science class was in a public primary school located in a semi-rural area of the Kikuyu District. The school had a population of 561 low SES students and a staff of 19 teachers. The school had three classroom blocks built in the shape of a U. The center of the U was a large patch of dirt beaten hard by hundreds of running feet and it had a large concrete block with a flagpole next to it. In the morning the students would stand at attention, sing the national anthem, sing a selected hymn, pray, and listen to a short speech made by the head teacher who stood on the concrete block. The whole ceremony typically lasted 30 minutes, and the students stood without complaint, listened intently, and sang heartily.

The classrooms in this school were made of concrete block and had tin roofs. None of the windows had glass in them and there was no power or running water in the school. The

bathrooms were pit toilets placed at the edge of the school grounds. The classrooms were approximately 30 feet by 30 feet. Each classroom could accommodate 50 students with its four rows of wooden slat desk/benches that held two students (or three in the younger grades). The front wall was painted black and used as a chalkboard. The other three walls were absent of bulletin boards and were heavily soiled with dirt and fingerprints. A few of the classrooms had a hand-made poster pasted onto the wall. Aside from the pupil desks and a small table for the teacher, there was no other furniture in the rooms. The floors were concrete and cleanly swept. In fact, the entire school was absent of trash.

The teacher that I observed was a recent female graduate of Taa College. She had asked students to bring in samples of food crops. She began the class by dividing the chalkboard into thirds and then asked, "Have you brought the things I have told you?" The students pulled out small handfuls of beans, rice, sukuma-wiki, maize, tomatoes, etc., and these were placed on a table in the front of the room. One by one she held up the sample and had the students identify it and then categorize it as a tuber, cereal, vegetable, legume, or fruit. After this was done, she said, "Now you will write the notes." She wrote down notes from her file on the board, and the students spent the remainder of the lesson copying the notes.

Science, Standard Six Class

This science class was in a primary school that was also in the Kikuyu district, but it was a private suburban school of 110 students and 13 teachers. The school was on a hillside and was built in the shape of an L. The center of the L was used as the playground and had a slide, climbing bars, and several swings. This was the only playground equipment that I saw in any of the nine primary schools that I visited. The buildings were concrete construction with tin roofs; the school had power but did not have running water. Pit toilets were located further up the hill at

the edge of the school grounds. The classrooms were very small—about 15 feet by 15 feet and were freshly painted. The front wall had an actual blackboard; there was one child per wooden desk and each classroom had a small two shelf bookshelf that held a classroom set of readers.

My visits to this school were in the afternoon; twice I came during the lunch hour and observed the meal service. There was no room designated as a lunch room. The students sat on the ground under trees eating heaping plates of rice and cabbage or beans and chapatti (a tortilla-like bread fried in oil). These dishes were cooked in a large metal pot outside of one of the classrooms over a charcoal fire by two female caterers. Students and staff alike ate the same fare.

After lunch, the head boy would ring a bell and the students would file into the classrooms. The science class that I observed was taught by a recent female graduate of Maarifa TTC. This was her second posting since graduation; she left her first school because of the rural setting and the 70+ students in each class. She wanted to be near Nairobi and she did not want to teach in a school with a large student population. Her science class at this school had six students in it.

She had brought soil samples of clay, sand, and loam and poured them onto a desk. She lectured on the properties of the soils and wrote the main points of her lecture on the board. Next, she invited each student to come forward to touch the three soils. They were then told to write down their observations about the soils in their exercise books. After all the students had an opportunity to touch the soils, the teacher concluded the lesson by asking questions about the texture of the soils and how it affected drainage, capillarity, and stickiness.

Science, Standard Seven Class

This science class was in a private primary boarding school in the Murang'a District. It is a rural school with 417 students and 13 teachers; it had the distinction of having the student with the highest KCPE score in the nation last year. The two-story classroom blocks that are adorned with Greco-Roman columns seemed rather anachronistic with the surrounding fields of maize and banana trees. The center courtyard is paved with concrete stones, and it is here that the students assemble each morning for singing, prayers, Scripture reading, and a message by the head teacher.

The classrooms are about 30 feet by 60 feet and lined with wooden desks and metal chairs that seat up to 50 students. There is no other furniture in the rooms except a small wooden table near each chalkboard. This school has power, a borehole for water, and pit toilets. The classroom windows all have glass in them, and two walls of each classroom are painted black to serve as chalkboards. There are no bulletin boards, and some of the rooms have hand-drawn posters glued to them from past units of study. The floors are concrete and are fairly clean; wash women daily carry buckets of water from classroom to classroom and mop the floors with rags before classes begin.

This novice teacher was a male and a recent graduate of Maarifa TTC. He brought two empty water bottles to class and used them to demonstrate pressure in liquids—specifically, that liquids transmit pressure equally in all directions, and that pressure increases with depth. The teacher filled the first bottle with water and sealed it. He made several tiny holes in the bottle and then squeezed the bottle. Water came out with equal force in all the directions. Next, he filled the second bottle with water and made tiny holes at different heights. The speed with which the water spurted out increased from top to bottom illustrating that pressure increases with depth. He

lectured on the principles and wrote his main points on the chalkboard. The students dutifully copied down the points and eagerly raised their hands to answer his questions.

Science, Standard Eight Class

This science class was held in an urban school within the Mathare slum. It is a private school that operates solely by charitable donations and has about 700 primary students, 300 secondary students and 39 teachers. The children are all orphans and vulnerable children, and in addition to providing uniforms, books, and a tuition/fee free education, the school also feeds them breakfast and lunch.

The school building is a five-story roughly constructed concrete structure. There is no running water, and though I did see a few light fixtures, on the days I observed there was no power. The building, I was told, had gone through many classroom additions as funds became available. The treads of the stairs were of varying heights and slanted downward forcing you to hold onto the metal railing to either help pull yourself up the stairwell or to prevent yourself from falling down it.

The classrooms were very small—no more than 12 feet by 20 feet. If the room was on an exterior wall, there were usually one or two small windows that let in light and air; if it was an interior room, there was usually one window that opened onto the two foot wide hallway and let in the noise of the other classrooms and little else. Thirty to 50 children filled each classroom; they sat on wooden slat desk-benches.

The teacher I observed was a recent female graduate of Maarifa TTC. She had lived with her family as a young child near the school and when she was on her holiday breaks from the TTC had volunteered at the school. She told me that she felt compelled to help these children get

an education so that they (like her) could move out of the slum to a better life. She was very passionate about her work as a teacher in the slum. She said that she had interviewed at other schools, and because of her high marks and athletic abilities, was recruited by some of the top primary schools in Kenya, but she chose to accept this difficult posting.

For a lesson on food poisoned by chemicals, this teacher brought to class two sets of surgical gloves and several empty chemical bottles. She asked two students to demonstrate how to put on surgical gloves. These gloves were to be used when handling chemicals, she informed the class. Next, she held up chemical containers. She told the students not to reuse them to store food stuffs and to properly dispose of them when they were empty. She finished with several more points about chemical poisoning and had the students copy these points in their exercise books.

Instructional Techniques and Strategies

Did the teacher use teaching techniques that facilitated the accomplishment of the learning objectives? Were they adapted to the needs of the students?

Seven of the 11 teachers that I observed used instructional techniques and strategies which did not relate specifically to the learning objectives of the lesson. In particular, the teachers read their notes and the students copied verbatim what was read to them. The main points were outlined on the chalkboard as the teacher spoke, and these were reviewed with choral recitation. For example, "There are three methods of controlling livestock parasites: drenching, dipping, and paddock rotation. Repeat for me the three methods." At times, the teacher would interrupt the note giving by asking a question about a point she or he had just made. There were four exceptions to this routine and that was when the teacher used a demonstration (as related in the last section) or asked students to speak with their partner about a particular topic.

Academic Engagement

Did the teacher provide group and individual learning activities in which all students could be involved?

Academic engagement refers to the time in which students are involved with learning activities. Three of the 11 teachers that I observed provided an opportunity for all the students to be involved in an activity. As previously related in the materials section, one of the teachers had each student touch different soil samples and then record his or her observation about the soil.

A second example of a teacher involving all students was in a private suburban school in the Kasarani District that had 497 students and 21 teachers. The two-story school was built of finished concrete block and had beautiful murals painted on the exteriors of the buildings depicting a variety of subjects such as African wildlife, Kenyan heroes, and the school crest and motto. The classroom blocks were in the shape of a U with a central courtyard that was paved with stones and landscaped with large trees and hedges. The school had power and running water—the faculty had standard western style flush toilets and the students had the typical African *choo* (a toilet that is level with the ground and is flushed).

The classrooms were about 30 feet by 30 feet and were filled with 45 to 50 desks set up in rows facing a chalkboard. There was no other furniture in the rooms except for a small table near the chalkboard which the teacher used. The students sat at individual top-opening wooden desks that were filled with textbooks and exercise books. Like the grounds, the classrooms were immaculate and each room had at least one or more hand-drawn posters pinned to a strip of wood that was attached to the wall and ran along the length of the sides of the classroom walls.

This teacher was a recent male graduate of Maarifa TTC; this was his fourth month as a teacher. During a science class, he asked his students to speak to their neighbour about the

difference between sedatives and stimulants. The students immediately rose from their desks and huddled with one or two other students. They carried on hushed conversations—even though 40 students were speaking in small groups, the room was still relatively quiet. After several minutes, he told the students to return to their desks and report what their group had decided. The students eagerly raised their hands to answer and add to the discussion.

A third example of involving all the students occurred in a semi-rural "high-cost" public school in the Kikuyu District.[15] The school has 205 students and eight teachers and is in close proximity to Taa TTC. Many of the students board at the school with the teachers serving as house-parents. There is a single classroom block; the cafeteria and dormitories are in separate buildings across the campus. The school has power and running water. In the morning, the students stand near the flagpole and face the school building for the morning assembly. The classrooms are roughly 30 by 60 feet and have a mixture of single wooden desks and wooden slat bench/desks. The walls of the classrooms are badly soiled and in need of paint; the concrete floors are littered with dirt and papers. Most of the classrooms have hand-drawn posters on the wall. The teacher that I observed was a recent male graduate of Taa College. He was the Kiswahili teacher for the school and was passionate about the subject. Once he entered the classroom, no English was allowed—only Kiswahili. During this particular lesson, the class was learning how to write a formal business letter. After having a number of students come to the board and identify parts of the letter, he had all students write a letter to me at the University of Central Florida. They were very excited about the project and quietly worked on it for the remainder of the lesson.

[15] A high-cost public school refers to a school usually owned by the Presbyterian Church of East Africa that has the teaching staff funded by the government. The parents pay fees and provide the textbooks for the school.

The other eight teachers provided little to no opportunity for student involvement. The lessons were characterized by note reading by the teacher and note taking by the students. Questions and choral recitation were interspersed throughout the note taking. The students were willing to answer questions and eagerly raised their hands. In the rural schools, the custom for answering a question was to raise a hand and say "Sha, sha, sha," to get the teacher's attention. In the urban and suburban schools, the students quietly raised their hands and always stood to answer when called upon.

Instructional Efficiency

Did the teachers vary the pace of instruction based on student feedback or on the type of activity or presentation?

Four of the 11 teachers' instruction that I observed occurred independent of student feedback and this was primarily driven by the note giving/note taking style of instruction. The notes were read at a steady, practiced pace interspersed with a few questions and requests for choral recitation. I never heard a student ask for a point to be repeated or clarified. The other seven teachers did modify the pace of their instruction based on student feedback. The best example of this practice occurred in a Kiswahili lesson on writing a business letter. Students were called to the board and asked to write the elements of a business letter. He reviewed the topic based on the errors of the children, and then he had all students write a letter addressed to me at the University of Central Florida.

Instructional Style

Did the teacher demonstrate personal enthusiasm and a positive attitude toward both the students and the subject matter?

Only two of the 11 teachers that I observed demonstrated little or no enthusiasm toward students or the subject matter. One was a female graduate of Maarifa and the other a male graduate of Taa. The female teacher was in a tiny private semi-rural school in the Kasarani

District that had 30 students and five teachers; she had four students in her class. The male teacher was in a suburban "high cost" public school in the Kikuyu District that had 205 students and 8 teachers. Both seemed bored with the material and read their notes without enthusiasm, eye contact, change in tone, or body movement. Their presentations were flat and they had little to no interaction with the students. While the students copied the notes from the board, the female teacher sat with her head on her chin and made no attempt to interact with the students for 30 minutes. The male teacher reprimanded students for trying to write down the notes while he was speaking. He only allowed them to copy the points from the board at the very end of the lesson; he sat down and stared out the window while they copied the notes from the board.

Five teachers demonstrated personal enthusiasm and had a positive attitude toward the students and the subject matter for the majority of the lesson. These teachers smiled and walked through the rows of desks as they lectured. They were enthusiastic, polite toward the students, and showed genuine interest in the topic. For example, I observed a teacher in a semi-rural school in the Kikuyu District teach a Standard Seven science class on controlling livestock parasites. This was a public school of 308 low SES students with a faculty of 12. The classroom blocks were constructed of clay and had tin roofs. None of the windows had glass and several of the classrooms were missing doors. The front wall was painted black for a chalkboard and the rest of the walls were heavily grimed with dirt but empty of anything else. Aside from the wooden slat desk/benches and a wooden table used by the teacher, there was no other furniture in the classrooms.

This particular teacher was a recent male graduate of Taa College. He was an orphan that had been raised by his grandmother. He had dreamed of going to the University of Nairobi and had qualified with his secondary school exam scores, but his grandmother could only afford to

send him to the teacher college. He was committed to helping these students; he told me he had sat in their place as a boy and understood their suffering and hardships. During this science class, he moved the discussion into the need for proper hand washing and fingernail clipping. He then went around to all 48 students and examined their nails, patted them on the shoulder, spoke individually to them—they immensely enjoyed the individual attention. The fact that he showed such care for the students and did so teaching in an extremely difficult setting, I believe, evidenced his personal enthusiasm and positive attitude.

Four of the teachers maintained a high level of personal and student enthusiasm as well as demonstrating enthusiasm toward the students and the subject matter. Examples of this behavior are best illustrated through the events in the two previously mentioned science classes that dealt with food poisoning and water pressure as well as the following example that occurred during a social studies class.

Social Studies

This class was observed in a "high cost" public school in the Kikuyu District. The school had about 1,524 students and a faculty of 44. This school is considered the best primary school in the nation because of the consistently high marks of its students on the KCPE exam. The school grounds are beautifully landscaped and quite extensive. There are dormitory blocks, large dining halls and assembly rooms, and many two-story finished concrete classroom blocks.

The individual classrooms were roughly 60 feet by 60 feet and had as many as 60 students in a room. The walls of most classrooms were bare except some classrooms had printed 8 by 10 inch typed papers with the names of the students and their KCPE exam scores glued to the wall. Other than a small teacher table at the front of the classroom, there was no other

furniture in the rooms. The school had power, water, flush toilets for the faculty, and *choos* for the students.

The teacher I observed was a recent male graduate of Taa TTC. He was recruited by this school when he was still a student at the TTC because of his talent in music and drama. The moment he entered the classroom, he commanded the students' attention by greeting them with a formal, but joyful, greeting. The students responded by standing and saying, "Good morning our teacher." Like the other teachers, he divided the chalkboard into thirds, wrote the date and lesson topic, and then began the lesson. The lesson topic for this Standard Five class was on interaction among African communities. He asked the students to say, "No man is an island," and then asked for ideas of what this meant. Though there were 56 students in the class, he called on students by name. Students were very keen to answer his questions—almost every child raised his or her hand for every question. When a student answered a particularly difficult question, he would tell the class, "Give her a one clap." The students would respond by clapping once for the student. He lectured by referring to his notes at times, but also speaking extemporaneously. During the interview he commented that he made a point of giving examples to which he thought the students could relate. This teacher concluded the lesson by reviewing and writing the main points of the lesson on the board which the students dutifully copied.

Data Analysis of the Primary Teacher Interviews

The 11 primary teachers involved with this study were recent graduates of either Taa or Maarifa TTC and were considered novice teachers, that is, they had less than two years teaching experience. The teachers were selected using snowball sampling. Several names of recent graduates of both Taa and Maarifa were given to the researcher by the deans of curriculum, and

from these initial contacts, other novice teachers were traced to the primary school in which they were employed.

Like the college interviews, the primary teacher interviews were coded and grouped by key words in order to compare the data and establish major themes (APPENDIX M PRIMARY TEACHER INTERVIEW DATA). Unlike the TTCs, the primary school headmasters and teachers were very cooperative and gave me full access to their schools. They were flattered and excited by the opportunity to take part in the research project. The eight male and three female teachers were interviewed over a three week period following the classroom observations. Each interview took between 20 and 30 minutes. The results of the interview analysis are presented by the questions that were asked and the themes that emerged.

Core Beliefs about Teaching

To elicit core beliefs about teaching, the eleven teachers were asked to describe a teacher they admired or one that had influenced them or helped them when they were a student. Two of the eleven (a female teacher from Maarifa and a male teacher from Taa) cited the teacher's methodology as being most influential.

A male graduate from Taa

> The teachers that helped me most were my math teachers in secondary and college. The way they taught, their methods were very good. They moved me from the known to the unknown. It is from them that I came to enjoy mathematics and teach the way I do.

Two male teachers both from Taa singled out content mastery as the quality that impacted them most about their teachers. "He was a man who had mastery over the content of

the material; it is from him that I came to love Kiswahili. He knew so much and could teach so that you understood the language."

The other seven novice teachers (four male and three female) pointed to a particular character quality.

A male graduate from Taa

I was in a difficult time at home and at school. My teacher took time to talk with me. I want to do that with my own students.

A female graduate from Maarifa

I think she was good because she saw teaching as a calling. She was a good role model. I admire her for that and for her hard work.

A male graduate from Taa

The teacher who influenced me most was hard, authoritarian, assertive, and confident. I try to be like this when I teach.

Preparation at the TTCs

Three of the interview questions probed how well the novice teachers felt the TTCs had prepared them. They were asked which courses they felt prepared them well or felt did not prepare them well, and what elements from the courses they have incorporated into their teaching.

Courses that Prepared the Novice Teachers

All eleven teachers stated that they felt the TTCs prepared them well. Seven (three females and four males) cited the professional studies courses as benefitting them most, specifically the teaching practice. "I enjoyed the teaching practice. When I go I assess myself

and they come and assess you too. They give you your mistakes and then help you to do it right. When you come out of college, you come out with confidence."

One female and three males mentioned specific subject areas such as music, drama, English, math, science, Kiswahili, and physical education.

> *Female graduate from Maarifa posted to an urban slum, private school:*
> I loved physical education. The lessons were quite helpful and Ms. ------ made it so fun. I participated in the sports and played on the teams. I think that gave me more energy and discipline than my colleagues who studied all the time. I think this is important for all children, but as you see, there are no playing fields at this school. The children are crammed into the courtyard and cannot run around.

> *Male graduate from Taa posted to a semi-rural, "high-cost" public school:*
> Yes, they were excellent, especially the science teacher. He taught with such passion. The English teacher was also very good—when he got around to marking. But the Kiswahili teacher, he is the Dean of Curriculum in the college, he taught me to love the language. That is what I primarily teach is Kiswahili. And it is sad that we as a country don't know it as well as we should.

<u>Courses that Did Not Prepare the Novice Teachers</u>

Eight of the teachers said that all the courses were good and prepared them well, however one female posted to a private school said that because some of the subjects (like art, drama, craft, and music) are not taught at her school, that they were "a waste of my time."

One female and two male teachers cited specific topics or subjects they felt needed more emphasis in the TTCs curriculum.

Female graduate from Maarifa posted to a suburban private school:

If I could get more skills in disciplining the students that would help. I also need more help in science. I need to learn how to do the experiments and not just draw them on the board.

Male graduate from Taa posted to a semi-rural, low SES public school:

The one subject I needed more time with was PE. Those classes were too few. If they could maybe add one class a week it would help. Especially in gymnastics—I am not good at gymnastics.

Male graduate from Maarifa posted to a suburban private school:

They should have given us information on how to do an interview and how to negotiate a salary. I was totally unprepared for that and now I am not earning very much.

Elements the Novice Teachers Incorporated

The teachers were evenly split in citing content and methods as the most important element they incorporated into their teaching.

The comments of three male teachers:

The content—they gave me good content that I give out to the students.

The teachers helped me understand the content and gave me an understanding of the way to teach to the different levels.

I use the notes I took. The notes I received helps me to teach.

Female teacher from Maarifa posted to an urban slum, private school:

I try to incorporate exactly what I was taught. In class if a child is crying or screaming, if you are not taught to think why they are crying you will not react properly. You might just speak harshly to them. Or when you come to a school like this where there is no supplies (sic), you still know how to teach without them.

Teaching Style

The teachers were next asked to describe their style of teaching and why they used a particular approach. Three of the male teachers gave very general descriptions of their teaching style such as, "My style is the best," or "It is free-style; I am easy in the classroom but still professional. It varies from subject to subject. For example during English we do more writing than talking. During CRE we discuss. Ask the students how I teach." All four female teachers and three of the male teachers characterized their teaching as child-centered and/or practical. They seemed to define child-centered as teaching to the individual student, involving the student, and explaining things on a child's level. Several of them, however, admitted that a lack of resources, absenteeism, and pressure to complete the syllabus curtailed the implementation of a child-centered approach.

Female teacher from Maarifa posted to an urban slum, private school:

"My teaching is child-centered. I think about the child and how to bring things low to their level. I think about how to be simple and explain things well."

Male teacher from Taa posted to a semi-rural, low SES public school:

I teach to the individual pupil—how they are and where they are. Some get things well and some not. Absenteeism is a big problem. If a kid is gone, he does not

have the material. There are no books so he cannot do homework. Also if he lacks food, he cannot do well. The children come from the slum. They are very poor families. If the child did not take anything the night before, and he takes nothing in the morning, he does not come. He is not feeling well. We need a feeding program but we have no sponsor. These are things that make teaching very difficult.

Female teacher from Maarifa posted to a suburban private school:

My teaching style is a bit practical, but not much. There is a shortage of materials like a thermometer would be good. If we had materials it would change the attitude of the students.

One male teacher from Taa who was posted to a suburban, "high cost" public school characterized his teaching as both teacher and student centered. "It is both teacher and student centered. I lecture and give the main points and involve the students with questions. I take examples from life. I teach from what is known to the unknown. This is the way they expand their knowledge."

Teaching and Contextual Factors

In order to gauge the internalization and actualization of the messages the novice teachers had received from the TTCs, the realities and impact of the learning environment in the primary schools had to be addressed. The final questions in the interview, therefore, probed how contextual factors influenced their teaching practice. Specifically, the teachers were asked (a) how the role of parents and the headmaster impacted their teaching, (b) how class size and the supply of resources impacted their teaching, and (c) how the exam based system impacted their teaching.

Parents

All eleven of the teachers stated that the parents expected them to produce good exam results.

Male teacher from Taa posted to a suburban "high cost" public school:

The parents expect high marks on the exam. This is the best primary school in Kenya. The parents and the students are very serious about performing well.

Male teacher from Maarifa posted to a rural private school:

They expect high marks. We had the highest KCPE result last year. All our students perform well.

Male teacher from Taa posted to a semi-rural "high cost" public school:

They expect results—a good exam performance by their children. This is what matters in Kenya.

Male teacher from Taa posted to a semi-rural, low SES public school:

The parents are appreciating. They want us to teach their children but it is difficult. They cannot buy the books or pay the teachers anything. The kids are from the Kigari slum. They are very poor. They want them to perform well, but it is difficult.

Female teacher from Maarifa posted to an urban slum private school:

They hope their children will get better education than they did. They want constant improvement.

Only one female teacher from a semi-rural private school mentioned that she felt the parents wanted her to develop the children's characters as well as to produce a good exam performance.

Headmaster

The next questions asked what expectations the headmaster had of them as a teacher. Nine of the teachers felt the headmaster, like the parents, expected them to produce good exam results. Five added that the headmaster also expected them to cover the syllabus and to help the students master the content.

> *Male teacher from Taa posted to a semi-rural, low SES public school:*
>
> "She expects good results. She is new. Our mean score last year was 169.[16] She said, 'Okay, let us see this as our base and from here we go forward.'"
>
> *Male teacher from Taa posted to a semi-rural "high cost" public school:*
>
> "He expects good results—that we prepare the students to perform well on the exam. So I must meet that expectation by finishing the syllabus. He also expects that I keep good discipline in the students."
>
> *Female teacher from Taa posted to a semi-rural low SES public school:*
>
> "She expects us to be in class, cover the syllabus, and produce good results on the exam."

Only two mentioned that developing the character of the students was the main priority of the headmaster.

> *Male teacher from Maarifa posted to a suburban private school:*
>
> "I am expected to mould the children so that the community will be strong. A student of this school should be distinguished in the community as one that is disciplined and of good character."

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[16] The total number possible on the KCPE is 500 marks. Two hundred fifty is a passing score, so a mean score of 169 indicates a failing school.

Class Size

The teachers were also asked what they felt about the size of their classes and how it affected their teaching practice. The graduates were scattered across the Central Province and were posted to nine different schools, four public and five private. The pupil to teacher ratio (P/T) was roughly the same between the public and private sectors with the exception of two very small private schools (Table 2). In three of the private schools and one of the public schools that I visited, the P/T ratios were significantly larger than the numbers I was given by the head teacher, in some cases 40% larger. I do not know why this was the case. I may have misunderstood the head teacher or it may have been that the classes I observed happened to be larger than the other classes.

In answer to the question regarding class size, the two female teachers, who were in the small private schools and who had class sizes ranging from four to eight students, said that the classes were too small. “Before I came here I taught in Meru where there were 70 or more in a class. Here it is small, too small. The kids get bored.”

The three teachers who had class sizes greater than the given P/T ratio stated that the class sizes were large (ranging from 50 to 60 students), but they seemed to accept the situation. One male teacher said, “The class size is large but it is necessary. We are a very popular school so we must have large classes to accommodate the students.”

Table 6. School Profiles

School Code	Public or Private	Area	SES	Number of Pupils	Number of Teachers	P/T
Mag	Public	Semi-rural	Low	308	12	26/1
Kim	Public	Semi-rural	Middle	205	8	26/1
Mus	Public	Suburban	Middle	1524	44	35/1
Tho	Public	Semi-rural	Low	561	19	30/1
Sta	Private	Suburban	Middle	110	13	8/1
Fou	Private	Suburban	Middle	497	21	24/1
Uta	Private	Semi-rural	Low-middle	30	5	6/1
Tri	Private	Rural	Middle	417	13	32/1
Mog	Private	Slum	Low	700	23	30/1

Six felt that their class size was acceptable (ranging from 25 to 40 students) and that the size did not affect their teaching. “Our classes are good. This is the best size. If it is large you cannot keep up with your marking.”

None of them mentioned that size affected their teaching in any way other than making it difficult to keep up with marking the books.[17] “You must stay on top of your marking or you end up with a large stack.”

Materials

The questions regarding materials pertained to two categories of materials: (a) student materials such as textbooks, exercise books, writing instruments, desks, and chairs; and (b)

[17] In Kenya, the students write class notes and homework assignments in exercise books—small, soft bound notebooks (8 inches by 5 inches). Every subject has its own exercise book, so if each student had homework in four or five subjects, the teacher could end up with large stacks of books.

classroom resource materials such as audio-visual equipment, maps, globes, charts, and science equipment. Eight of the teachers who all taught in middle SES schools stated that the student materials (category a) were in good supply. “The students have textbooks and exercise books. They are required to bring these. They cater for themselves.”

The three teachers who taught in the low SES schools stated that the students did not have enough textbooks. The teacher from the urban slum school said, “There are not enough books. We keep them in the library and hand them out in class. They cannot take them home.” In this particular school which was located in Mathare slum, each grade level contained either two or three streams of students. They were not grouped by academic ability, just by age. Forty to fifty students populated a stream. Each grade level, in other words had between 80 and 150 students. At the beginning of each class period, an assigned student would go to the library, check out a set of textbooks, and bring them to the classroom. The teacher would distribute the books; in the classes I observed there was one book shared by three to five students. At the end of the lesson, the books were collected and returned to the library for the next stream of students to use. In one class I observed, there were 42 students in the room; the other stream of students from this grade level had 54 students in it totalling 96 students. These 96 students shared 12 books.

In another school that also served a semi-rural, low SES population, the teacher remarked, “The materials are few. The students do not have. The books we had were stolen last month. Did you see them move to sit with a book?” When asked how having a sufficient supply of textbooks would affect their teaching, one male teacher who taught in a semi-rural, low SES school explained,

> If we had books and materials there would be many good changes. We could change academically. We could improve. A whole class cannot depend on one book. It is passed around. If you had books, the time used to write the notes could be used to teach more. Students could do homework. We could move ahead academically.

All of the teachers said they lacked classroom resources; science equipment was specifically mentioned by many of the teachers. Most mentioned that they had never used a piece of science equipment until they attended the TTC. A female teacher in a semi-rural, low SES school commented, "We don't have power. If I had power I would use audio visuals like projectors and such, but we don't have those either." None of the primary classrooms had bulletin boards; some had a few handmade posters and charts glued to the wall. I only saw two teachers use any type of equipment, surgical gloves and an old water bottle.

When asked how the supply of resources would impact their teaching, all felt it would bring interest and practicality to the lesson.

> *A female teacher from an urban, low SES, private school:*
> If I had these things, the lesson would be practical. They could see. We cannot explain or draw everything.

> *A male teacher from a semi-rural, middle SES, "high cost" public school:*
> We don't have audio visuals. The students can't see the things I teach about. If I had a globe or maps, it would help the student. This is a problem. I want to learn more about Montessori. They do more practical lessons, not all this note giving.

The practical is very important for the students. The school, however, cannot afford the materials. I do not know how we could do Montessori.

A male teacher from a rural, middle SES, private school:

We have some maps and a globe, but we don't have any science equipment. I have to improvise. Our time is spent on giving the notes and drawing and explaining. We cannot stop to do the practical or to do group work.

A female teacher from a suburban, middle SES, private school:

We don't have science equipment. Because we don't have audio visuals or equipment we must change—we eliminate things that we could teach.

Exams

The last questions inquired about the influence of the national examination system. At the end of Standard Eight, all students take the national primary school exam in order to receive the Kenya Certificate of Primary Education (KCPE). The results of the exam are one factor that determines if and where a child will attend secondary school. Financial constraints on families and the lack of secondary schools within the country further reduce the transition rate between primary school and lower secondary school to 41%, and the transition rate between lower and upper secondary to 24% (UNICEF, 2011 and UNESCO, 2009b). There is, therefore, a tremendous emphasis on good examination performance on the KCPE.

Two teachers denied feeling pressured by the exam system, but rather voiced their acceptance of and accommodation to it.

A male teacher from a rural, middle SES private school:

There is a focus on exams but no pressure. We are expected to perform good, and why not. We are paid to teach and are answerable. No, we learn every day. There is no pressure.

A male teacher from a semi-rural, low SES public school:

No, the pressure is from me. We must teach to pass the exam. The motivation is from inside me. I do what the syllabus entails so I am not pushed by the exams.

The other nine teachers felt there was not only significant pressure because of the exams, but that the whole focus of the education system was on the passage of the exam. They confessed that their teaching practice was being impacted by it.

A male teacher from a suburban, middle SES private school:

There is always exam pressure. I feel like I am the one sitting for the exam. It is very stressful.

A male teacher from a semi-rural, middle SES, "high cost" public school:

There is great pressure to achieve high marks. If you don't have high marks you cannot get in a good school. Our goal is to have two students reach national schools this year.

A male teacher from a semi-rural, middle SES, "high cost" public school:

We always teach with the exam in mind. The students will come tomorrow (Saturday) for tuition. This will help them with the practice exam on Monday. They sit nine of these practice exams so they achieve good results on the KCPE.

A female teacher from a suburban, middle SES private school:

There is a lot of exam pressure. It is the biggest pressure I have. Time becomes an issue. We cannot slow down or we will not cover the syllabus. Also we only teach what is examinable so there is no music or art or drama.

Analysis Summary

The analysis of Kenyan TTCs' method of instruction and formal curriculum and how it is internalized and applied by novice primary teachers has illuminated several key issues. First, the formal curriculum analysis found that the colleges evidenced a strong design that generally prepared the novice teachers to teach the Primary Teacher Education Syllabus (KIE, 2004). Second, the TTC faculty observations revealed that the predominate method of instruction by the tutors was a teacher-centered pedagogy consisting of reading notes, writing notes, asking questions, and choral recitation (Cuban 1983; Kember and Gow, 1994; Schuh, 2004). Third, the TTC faculty interviews exposed both a lack of pedagogical training and primary school teaching experience among the instructors. Fourth, the interviews revealed that the faculty believed they were implementing child-centered practices, but they thought that a lack of teaching resources and the pressure to cover the content in the syllabus undermined the execution of it. Fifth, the primary school teacher observations uncovered that their method of instruction was teacher-centered and mirrored that of the TTC faculty: reading notes, writing notes, asking questions, and choral recitation. Sixth, like the TTC faculty, the primary teachers described their style of teaching as child-centered. They did, however, state that with more teaching resources and less pressure to complete the syllabus and to produce high exam marks they would be able to involve the students more in practical activities, group work, and discussions.

CHAPTER FIVE: DISCUSSION AND CONCLUSION

Discussion

This study has chronicled the messages transmitted within Kenyan TTCs through the method of instruction and the formal curriculum using a case study design in order to discover which messages regarding pedagogical practice are internalized within novice Kenyan primary school teachers and applied in their classrooms, and to gauge the effect of those messages on the quality of education in Kenyan schools. The ensuing discussion of the data is organized into four divisions: (a) the messages transmitted by Kenyan TTCs through the formal curriculum, (b) the messages transmitted by the Kenyan TTCs through the method of instruction, (c) the messages internalized and actualized by the Kenyan primary school teachers, and (d) the impact of those messages on the quality of education in Kenyan primary schools.

The Messages Transmitted through the Formal Curriculum

The Formal Curriculum Design Analysis

In order to discover what knowledge was being transmitted to the novice teachers through the formal curriculum, a design analysis of the TTCs' formal curriculum was computed by rating the degree to which the institution offered courses yearly, had faculty teach in their area of expertise, upheld exit standards, and prepared students to teach reading, mathematics, and general subjects. An expertise-orientation was adopted for the evaluation (Eisner, 2002; Vars, 2002; Eisner, 1998; Eisner, 1989; Fitzpatrick, Sanders, and Worthen, 2004). The logic of such an evaluation entails establishing criteria of merit, constructing standards, measuring performance and comparing with the standards, and synthesizing and integrating data into a judgment of merit or worth (Fournier, 1995; Scriven, 1999; Fitzpatrick, Sanders, and Worthen, 2004). Principles, criteria, and standards set forth by NCATE (2010), NCTQ (2010), TEAC (2011), NRP (2000), and NCTM (2009) were adapted in order to reflect the real-world context of Kenyan TTCs. A

school scoring at 70% or better (31.5 points) was considered to have a stronger design. A school scoring below 70% (less than 31.5 points) was considered to have a weaker design.

Both Taa and Maarifa TTCs evidenced a stronger formal curriculum design scoring 35.16 and 35.72 respectively. The design, in other words, was not hindering the communication of the messages of the formal curriculum. However, because the issue of Bloom's Taxonomy and its cognitive processes had surfaced during the college classroom observation, and because the Primary Teacher Education Syllabus (KIE, 2004) advises trainers to consider each level of knowledge mentioned in the taxonomy, I felt it was important to review the formal curriculum (the textbooks, schemes of work, and student accountability) through the additional lens of Bloom's Taxonomy.

Although the Kenyan Ministry of Education has embraced the use of the Taxonomy, it is appropriate to first question the adoption of a tool, developed by western educationists, to scrutinize the cognitive levels within an African education program. From a cognition/culture perspective, it may not be a valid approach. As noted in the literature review, the progression of the research literature seems to indicate that to only concentrate on the internal processes of cognitive development as a single entity or as growth and age related factors and to ignore the environment and the interaction of culture and cognition is to have an incomplete view of cognitive processes. Nisbett and Norenzayan (2002) in their meta-synthesis concluded that different cultures will rely on qualitatively different cognitive strategies to solve problems and that different cultures will possess different cognitive processes. Therefore, the use of Bloom's Taxonomy may not accurately reflect African cognitive processes and may not be an appropriate lens with which to view the Kenyan education system. However, in another sense, it may be

considered valid simply because the Kenyans use it themselves to guide their educational practice.

There are only two instances of the application of Bloom's Taxonomy to African education in the educational literature. Both instances involved a review of final examination papers in two different African universities—Moi University in Kenya, and Vaal University in South Africa (Ole Takona, 1999; Swart, 2010). These studies both found that a high percentage of the examination papers are using a greater percentage of lower order questions than higher order questions and urged a redesign of the university programs to cultivate critical thinking skills.

The Formal Curriculum Viewed through the Lens of Bloom's Taxonomy

In this review, the formal curricula that I reviewed were the textbooks, schemes of works, and model examination papers. Two questions guided this review of the formal curriculum using Bloom's Taxonomy. What levels of cognition in the original 1956 Bloom's Taxonomy are evidenced within the formal curriculum? What messages does the formal curriculum send when viewed through this lens?

Three randomly selected chapters from each text were selected. The end-of-the chapter review questions and activities were examined—specifically, the verbs within the questions and activities were matched with those defined in the 1956 Taxonomy (Table 7) (Bloom, 1956). Additionally, the verbs used in the objectives and learning activities from the schemes of work and the verbs used in the questions on model examination papers were also matched with those defined in the Taxonomy. The results (Table 8) reveal that the formal curriculum is primarily centered within the first three levels of cognition. An average of 98% of the questions and activities sampled in the texts were concentrated within the first three levels, an average of 90%

of the objectives and learning activities in the schemes were centered within the first three levels, and an average of 98% of the available examination papers fell within the first three levels.

In one sense, therefore, the formal curriculum can be described as a strong design for teacher preparation that does not impede the transmission of the knowledge and skills prerequisite for primary teachers as defined by the Ministry of Education. But in another sense, the elements within the formal curriculum do not facilitate the development of higher order cognition and perhaps even subliminally validate the message that the lower order cognitive processes are the normative goal to aspire to when teaching.

Table 7. 1956 Bloom's Taxonomy Summary

Bloom's Taxonomy 1956

1. Knowledge: "Involves the recall of specifics and universals, the recall of methods and processes, or the recall of a pattern, structure, or setting" (Bloom, 1956, p. 201). Examples of verbs that relate to this function are:

know	define	record
identify	recall	name
relate	memorize	recognize
list	repeat	acquire

2. Comprehension: "Refers to a type of understanding or apprehension such that the individual knows what is being communicated and can make use of the material or idea being communicated without necessarily relating it to other material or seeing its fullest implications (Bloom, 1956, p. 204). Examples of verbs that relate to this function are:

restate	identify	illustrate
locate	discuss	interpret
report	describe	draw
recognize	review	represent
explain	infer	differentiate
express	conclude	

Bloom's Taxonomy 1956

3. Application: Refers to the "use of abstractions in particular and concrete situations" (Bloom, 1956, p. 205). Examples of verbs that relate to this function are:

apply	organize	practice
relate	employ	calculate
develop	restructure	show
translate	interpret	exhibit
use	demonstrate	dramatize
operate	illustrate	

4. Analysis: Represents the "breakdown of a communication into its constituent elements or parts such that the relative hierarchy of ideas is made clear and/or the relations between ideas expressed are made explicit" (Bloom, 1956, p. 205). Examples of verbs that relate to this function are:

analyze	differentiate	experiment
compare	contrast	scrutinize
probe	investigate	discover
inquire	detect	inspect
examine	survey	dissect
contrast	classify	discriminate
categorize	deduce	separate

5. Synthesis: Involves the "putting together of elements and parts so as to form a whole" (Bloom, 1956, p. 206). Examples of verbs that relate to this function are:

compose	plan	propose
produce	invent	develop
design	formulate	arrange
assemble	collect	construct
create	set up	organize
prepare	generalize	originate
predict	document	derive
modify	combine	write
tell	relate	propose

Bloom's Taxonomy 1956
6. Evaluation: Engenders "judgments about the value of material and methods for given purposes" (Bloom, 1956, p. 207). Examples of verbs that relate to this function are:

judge	argue	validate
assess	decide	consider
compare	choose	appraise
evaluate	rate	value
conclude	select	criticize
measure	estimate	infer
deduce		

Table 8. Cognitive Levels in TTCs Texts, Schemes of Work, and Model Exams

	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Texts						
Farrant	48%	40%	4%	4%	0%	4%
Githaiga	37%	63%	0%	0%	0%	0%
Indimuli	85%	10%	5%	0%	0%	0%
Kisilu	68%	24%	3%	0%	5%	0%
Kariuki	77%	20%	0%	3%	0%	0%
Kisirikoi	44%	50%	0%	6%	0%	0%
Muitung'u	78%	18%	6%	0%	0%	0%
Shitohi	63%	11%	26%	0%	0%	0%
Schemes						
Reading	42%	34%	8%	8%	8%	0%
Mathematics	61%	32%	7%	0%	0%	0%
Science	45%	40%	6%	3%	6%	0%

	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Social Science	50%	46%	0%	4%	0%	0%
Professional Studies	38%	38%	5%	5%	12%	2%
Model Examination Papers						
Reading	60%	34%	2%	0%	4%	0%
Mathematics	0%	0%	100%	0%	0%	0%
Science	63%	26%	5%	3%	3%	0%
Social Science	Not Available					
Professional Studies	Not Available					

Messages Transmitted by Kenyan TTCs through the Method of Instruction

Kenyan TTCs Faculty Observations

Though there were some instances of good teaching, the majority of the instruction was ineffective as defined by the SET protocol. Lessons were conducted without communicating learning objectives. Few instructional materials (even though they were available or could have been improvised) were utilized by the instructors and their instructional techniques and strategies did not relate to the learning objectives; they were primarily chalk and talk. The tutors provided little to no opportunity for student involvement, controlled the pace of instruction independent of student feedback, and demonstrated little or no enthusiasm toward students or subject matter. The method of instruction could generally be described as reading notes, writing notes, asking questions, and choral recitation; in other words the message endorsed through the instructors' delivery is a teacher-centered pedagogy (Cuban 1983; Kember and Gow, 1994; Schuh, 2004).

The revealing statement made by one of the tutors during class that only the first three levels of Bloom's Taxonomy applied to primary school students and that the higher levels were for secondary and tertiary education was a key piece of data. When the college observation notes are viewed through this lens, it becomes apparent that the bulk of the teaching and learning activities used the three lowest cognition levels. Analysis, synthesis, and evaluation were not evidenced in the types of questions asked, the type of discussions led, nor in the type of activities that occurred. The tutor's statement, I believe, is not just her understanding of how the taxonomy applies to primary school. It is a profoundly accurate description of the current college classroom pedagogical practice and is a second key message transmitted through the method of instruction.

Kenyan TTCs Faculty Interviews

Only three of the sixteen college faculty that I interviewed had attained a master's degree. The others had degrees in a subject area, but unless their degree was in education, they had not taken any pedagogical courses at the university. Though the tutors were tasked to train primary teachers how to teach, almost half had no classroom experience in either a primary or secondary setting and only three had taught in a primary school. The majority of instructors, in other words, drew from their own experiences as students in primary and secondary schools and in college on how to be a teacher and how to teach. This practice would increase the tendency to reproduce the existing classroom practices and teacher-student patterns of interaction.

All but one instructor characterized their teaching-style as student-centered, child-centered, or learner-centered.[18] They described this approach as involving the students through

[18] Though there is no prescribed format for this educational practice, in general a child-centered approach assumes a change in the nature of knowledge, the students' role, the teachers' role, and classroom organization. Knowledge is constructed by the learner; students are engaged in the learning process and are given opportunities to draw on their own experiences and interpretations; teachers take a supportive role as motivators and facilitators; classrooms are organized in a way to allow group work (Cuban, 1993; Schuh, 2004.)

questions and discussion. They also stated that they were implementing all of the levels within Bloom's Taxonomy, but had difficulty giving specific instances of how they implemented them from their schemes of work.

Though curriculum, child-centered teaching, practical/interactive teaching, ethics and morals, and child development emerged in their thinking as essentials within a teacher training program, the instructors felt that child-centered teaching was undermined by a lack of resources and the need to cover the syllabus. Additionally, they stated that the realities of a Kenyan primary classroom—of large class sizes and of few resources—prevented the development of a learning environment that was based on child development principles. The tutors also expressed a sense of helplessness and hopelessness in their ability to change their teaching style or teaching environment due to the contextual forces with which they must contend.

Though in the interviews the tutors described their teaching-style as student-centered, the evidence from this study's observations revealed that student-centered teaching, as generally understood by most western educators, was neither practiced nor modeled by the lecturers. Their style was teacher-centered; that is, the teacher predominately talked, the questions were of lower order cognition, the instruction was whole group, the class time was determined by the teacher, and the classroom arrangement was in rows (Cuban, 1983; Schuh, 2004). The message transmitted by the lecturers' method of instruction, therefore, would seem to be the empty vessel or banking approach; the role of the teacher is to transfer knowledge and accumulated wisdom into the minds of passive students (Kember and Gow, 1994).

It is interesting, however, that the tutors believed that they were practicing student-centered instruction. It would seem that their understanding and practice of child-centered

pedagogy and/or their perception of how they were implementing it had been altered by or accommodated to the demand to complete the syllabus, the pressure to perform well on the exams, and the lack of classroom resources. The contextual frustrations and challenges voiced by the tutors in this study echo the findings of research by Altinyelken (2010) and Sikoyo (2010) in Ugandan classrooms, O'Sullivan (2004) in Namibian classrooms, and Tabulawa (1998) in Botswanan classrooms. Relief from these contextual realities in African classrooms is nowhere on the horizon. Given the economic shortfalls in the education sector, increased enrollments, and limited facilities and resources faced by developing nations such as Kenya, I believe encouraging African educators to implement a western child-centered approach as the key for improving educational quality will continue to fail. As O'Sullivan (2004) points out, "There has been a huge underestimation of what is involved in learner-centered education" (p. 594).

That underestimation, I believe, includes not only resources, but also a misunderstanding by western educators and international NGOs of the African culture/cognition differences—the way knowledge is viewed, the prescriptive role relations in a hierarchal system, and the goals of education. African culture and cognition, I believe, does not embrace a worldview that would support child-centered education.

In general, a child-centered approach is supported by a humanist worldview that assumes: (a) knowledge is constructed by the learner, (b) students are engaged in the learning process and are given opportunities to draw on their own experiences and interpretations, (c) teachers take a supportive role as motivators and facilitators, and (d) educational goals are considered more in terms of process than of product (Cuban, 1983; Schuh, 2004). The data from the observations and interviews in this study point to the African educators as embracing a behaviorist worldview that assumes: (a) knowledge is objective and outside the learner, (b) students receive knowledge

and instruction that is given to them by the teacher, (c) the student-teacher relationship is formal and hierarchal, and (d) that the goal of education is to perform well on the exams and to become a contributor to the community.

Given the worldview schism and the lack of resources, the viability and wisdom of adopting a western child-centered pedagogy, I believe, should be reconsidered. Furthermore, Tabulawa (2003) argues that the push for child-centered education by aid agencies is in reality neo-colonialism; it is an attempt to develop a western worldview and society within the African continent. O'Sullivan (2004), Barrett (2007), Altinyelken (2010), and Sikoyo (2010) raise similar practical, cultural, and ideological questions of the efficacy of adopting western child-centered pedagogy within African schools.

Because of the results of this study and the issues raised by other researchers, educationists must, I believe, consider unlinking the western conception of child-centered pedagogy from educational quality in African nations. They must, as O'Sullivan (2004), Abd-Kadir and Hardman (2007), Barrett (2007), Hardman et. al , Altinyelken (2010), and Sikoyo (2010) suggest, shift their focus of improving the quality of education through the implementation of child-centered pedagogy to that of adopting strategies which (a) adapt to the existing African contextual factors, and (b) that enhance the pedagogies that are already in place.

O'Sullivan's (2004) study of Namibian primary schools demonstrated that reconceptualising a learner-centered approach to the African context through the development of learner-centered skills such as basing the pace of instruction on student feedback, making the most of instructional time through punctuality and attendance, or by checking for understanding throughout the lesson, resulted in an increase in reading achievement levels by students.

> It seems that the concern in Namibia should be less on attempting to encourage teachers to implement learner-centered approaches, which are beyond their capacity, and more on implementing learning-centered skills, which facilitate direct instruction and active teaching. (O'Sullivan, 2004, p. 600)

I believe integrating higher order cognition into teaching by changing the type of questions asked in the classroom could be one of those means of improving the quality of education in African schools without requiring additional resources of time, materials, classroom space, and teaching staff that are unfeasible to most schools in developing nations. Additionally, such a change would address the growing concern over the epistemological and cultural appropriateness of adopting a child-centered approach in the African culture (Arthur, 1998; Tabulawa, 1998; Cross, Mungadi, and Rouhani, 2002; Tabulawa, 2003; O'Sullivan, 2004; Barrett, 2007). The incongruence between the African understandings of the nature of knowledge, the method of knowledge transmission, the goals of education, the role of the teacher, and the role of the student with that of the western learner-centered understanding of them should be respected rather than transformed to fit western constructs.

The Messages Internalized and Actualized in Kenyan Primary Teachers

Primary School Teacher Observations

Though there were some instances of good teaching, the majority of the instruction was ineffective as defined by the SET protocol. All of the lessons that I observed were conducted without communicating learning objectives. In 43 of the 50 hours of observation, there were only seven instances when instructional materials were utilized by the instructors. Seven of the 11 teachers never related their instructional techniques and strategies to the learning objectives, and eight of the 11 provided little to no opportunity for student involvement. The majority of the teachers, however, did modify their teaching based upon student feedback, and did demonstrate

enthusiasm toward both the students and the subject matter. Perhaps this can be attributed to the interest and zeal inherent with any new profession or position.

I additionally reviewed the observation notes through the lens of Bloom's Taxonomy, and like the college faculty, the types of questions, activities, and discussion, the novice teachers are using a teacher-centered approach that is dominated by lower order cognitive processes. This mirrors (with the exception of modifying teaching based on feedback and demonstrating enthusiasm toward students and the subjects), the pedagogical practices of the TTCs faculty.

Primary School Teacher Interviews

The eleven novice primary teachers that were interviewed cited methodology, content mastery, and character as important skills and qualities for a teacher to have. Though all teachers stated that the TTCs prepared them well, several mentioned specific courses that they felt could have had more coverage. Most described their teaching style as child-centered and defined this as teaching to the individual student or involving the student. The teachers believed that by involving the students through questions that their classrooms were child-centered, yet the observations revealed that their pedagogy was teacher-centered. Once again, it is interesting the way the teachers accommodated the definition of child-centered learning to their own classroom practices and environment.

The teachers, like the college faculty, said they could involve the students more if they had more resources and less pressure to complete the syllabus and perform well on the exams. They echoed many of the experiences and frustrations of the college faculty that the lack of student materials and classroom resources slowed the pace of instruction as well as the amount of material that could be covered. Additionally, the majority of teachers stated that the pressure

to perform on the exams was significant. It was exerted by both parents and the headmasters, and it significantly altered what they taught and how they taught.

The Impact of the Messages on the Quality of Education

The 2005 Global Monitoring Report (UNESCO) identified two main elements of a quality education: first, a quality education will promote the cognitive development of the learners, and second, it will nurture learners' creative and emotional development by promoting objectives of peace, citizenship, equality, and global and local cultural values. How is the quality of education in Kenyan primary schools affected by the formal curriculum and method of instruction in the TTCs?

This study has shown that the classroom pedagogy of the TTCs is characterized by teacher-centered practices such as reading notes, writing notes, and choral recitation and that those practices are being internalized and applied by the novice teachers. Because teacher-centered pedagogies tend to promote passivity, superficial learning, and stifle critical and creative thinking (Cuban, 1983; Schuh, 2004; Kember and Gow, 2004; Barrett, 2007), cognitive development (and thus the quality of education in Kenyan primary schools) is possibly being repressed.

This study has also revealed that the TTCs' formal curriculum and method of instruction are characterized by the use of lower order cognitive questions, activities, and discussions which could further impede the development of critical thinking skills and subsequently the quality of education in Kenya. However, because of the growing concern over the feasibility and appropriateness of adopting a western child-centered pedagogy in African classrooms, it was suggested that integrating higher order cognition into teaching by changing the type of questions, activities, and discussions could be one means of improving the quality of education in African

schools. This change would not require additional resources of time, materials, classroom space, and teaching staff that are unfeasible to most schools in developing nations, and it would not entail the wholesale adoption of western child-centered pedagogy.

Conclusion

This qualitative case study of Kenyan TTCs has chronicled the messages transmitted by both the formal curriculum and method of instruction. Though the design of the formal curriculum was revealed to be strong, it was also found to be predominately centered on lower cognitive processes. The method of instruction of the faculty, who had little to no primary or secondary classroom teaching experience and no college courses in educational methods, was best described as teacher-centered. Their lack of classroom experience seemed to indicate that in developing their teaching style they were drawing upon their own experiences as students. This would increase the tendency to reproduce the existing classroom practices and teacher-student patterns of interaction. The novice teacher observations and interviews evidenced classrooms dominated by teacher-centered pedagogy and lower cognitive process questions, activities, and discussion. The key messages being internalized and applied by the novice teachers, therefore, is an emphasis on lower cognitive processes and on teacher-centered pedagogies.

The interviews with the college faculty and primary teachers also informed upon the difficult contextual realities within which they teach. Without substantial changes to the examination structure system, to the rigid syllabus, and without a significant increase in resources (classrooms, textbooks, learning materials, teachers) the development of child-centered approaches is unrealistic. Furthermore, the epistemological and cultural incongruence between the West and Africa as discussed by numerous educationist (such as Arthur, 1998; Tabulawa, 1998; Cross, et al. 2002; Tabulawa, 2003; O'Sullivan, 2004; Barrett, 2007) calls into question

not only the viability but the wisdom of pushing for a western child-centered pedagogy. Research regarding the interplay of cognition and culture seems to indicate that cognitive processes vary from culture to culture because of different historical developments that have led to the emergence of different social activities and tools, which in turn has led to different thought processes, differential expertise in cognitive strategies, and differential knowledge about a domain (Nisbett and Norenzayan2002). From an African cultural/cognitive perspective, this would seem to validate learning that equipped students to be contributors to their communities, teaching that preserved the hierarchal social structure, and viewing knowledge as objective and fixed.

Improving the quality of education in countries such as Kenya would mean unlinking quality with child-centered pedagogical practices and instead hitching it to the development of practices congruent with the African culture and that consider its resource challenged context. A modified approach that emphasizes culturally appropriate and relevant classroom practices and skills, such as implemented by O'Sullivan (2004), might be a better way forward. Verspoor (1989) underpins such an approach when considering educational change, "Project designs need to make provisions for incremental and flexible implementation strategies" (p. iii). Changing the type of questions, activities, and discussions within Kenyan classrooms to include ones of higher cognitive levels may be one of those incremental strategies that could substantially improve the quality of education in this country.

Future research should focus first on the development of in-service training on using non-cost, direct instruction skills such as how to use the new Bloom's Taxonomy as a tool for planning schemes of work and lesson plans or how to write and use lesson objectives. Second, it should develop realistic strategies for implementation that considers the contextual,

epistemological, and cultural milieu of developing nations such as Kenya. Third, it should evaluate the effectiveness of that training in both the college and primary school venue to include the higher cognition levels in both the planning and implementation. Fourth, it should track the effect on achievement levels of the primary students.

This idea of encouraging higher order cognitive questions and activities is not a new grand theory or revolutionary program. Rather, it is a small, concrete change that could have large repercussions on the quality of education in Kenya and in other developing nations.

APPENDIX A
DESIGN ANALYSIS OF TEACHER TRAINING COLLEGES

The design analysis was computed by rating the degree to which the institution met each facet and calculating the final score on a weighted scale with the range of scores between 0 and 45. Reading, mathematics, general education, and professional preparation scores were calculated on the basis of textbook quality, schemes of work quality, and student accountability. The frequency of courses, the expertise of the faculty, and the upholding of exit standards facets were rated as either meets the standard (45 points) or does not meet the standard (0 points). A school scoring at 70% or better (31.5 points) was considered to have a stronger design. A school scoring below 70% (less than 31.5 points) was considered to have a weaker design. Below is the format used for calculating APPENDIX N DESIGN ANALYSIS DATA.

Design Analysis of the Teacher Training Colleges				
Facet	**Weight of Rating**	**Multiplied by**	**Individual Score (Range 0-45)**	**Weighted Score (Range 0-45)**
Reading preparation	0.2	X		
Mathematics preparation	0.2	X		
General preparation	0.2	X		
Professional preparation	0.2	X		
Frequency of courses	0.05	X		
Faculty expertise	0.05	X		
Exit standard upheld	0.1	X		
Total Institution Score				
Name of Institution				

APPENDIX B
RATING THE COURSES

Reading, mathematics, general studies, and professional preparation courses at the TTCs were assessed by rating the course textbook quality, the published scheme of work, and the student accountability. Rubrics developed by Walsh, Glaser, and Wilcox (2006) and Greenberg and Walsh (2008) and founded upon the principles and standards set forth by NCATE (2010), TEAC (2011), NRP (2000), and NCTM (2009) were adapted for this rating and used with the authors' permission.

Textbook Quality (15 points)

A course earned a score of 15 by including a single comprehensive textbook in the subject area or by combining several good texts that dealt with a portion of the subject area.

Schemes of Work (Syllabus) Quality (15 points)

The scores ranged from 0 to 15. Each syllabus was analyzed for the frequency that a particular component was taught with a maximum score of 3 for each component.

Student Accountability (15 points)

Three primary means for holding students accountable for demonstrating their knowledge of a content area were assessed: (1) homework, (2) quizzes, tests, and exams, and (3) practice teaching. The scores ranged from 0 to 15.

APPENDIX C
TEXTBOOK QUALITY

Scoring Key

Rating	Description	Points Awarded
Acceptable Core Textbook	The text accurately and thoroughly covered five key areas of the subject.	Score: 15
Acceptable Supplemental Textbook	The text did not cover all five key areas of the subject and would be considered supplemental.	Score: 1, 2, or 3 points for each key area covered
Not Acceptable Core Textbook	While the text was intended to be a comprehensive source on the subject, it was neither accurate nor complete.	Score: 0

Reading Preparation

Taa and Maarifa Reading Textbook Rating

	Phonemic Awareness	Phonics	Fluency	Vocabulary	Comprehension	Total
Kisilu and Lelei (2008)	0	1	1	1	1	4
Muitung'u and Njeng'ere (2008)	1	1	1	1	1	5
Mean Score	0.5	1	1	1	1	4.75

Mathematics Instruction

Taa and Maarifa Mathematics Textbook Rating

	Algebra	Data and Probability	Geometry	Measurement	Numbers and Operations	Total
Indimuli et al (2009)	2	1	2	2	3	10
Shitohi (2008)	2	1	3	3	3	12
Mean Score	2	1	2.5	2.5	3	11

General Preparation

Taa and Maarifa General Preparation Textbook Quality Rating: Science

	Physical Science	Life Science	Earth Science	Agriculture	Home Science	Total
Kariuki et al. (2010)	2	2	2	2	2	10

Taa and Maarifa General Preparation Textbook Quality Rating: Social Studies

	Physical	Social	Economic	Political	International	Total
Githaiga et al. (2008)	2	2	2	2	2	10

Professional Preparation

Taa and Maarifa Professional Preparation Textbook Rating

	Foundations	Curriculum	Psychology	Administration, IT, and Resources	Teaching Skills	Total
Farrant (1980)	3	0	3	3	3	12
Kisirikoi (2009)	1	1	3	1	2	8
Mean Score	2	0.5	3	2	2.5	10

APPENDIX D
SCHEMES OF WORK QUALITY

The scoring ranged from 0 to 15. Each syllabus was analyzed for the frequency that a particular component was taught with a maximum score of 3 for each component.

Scoring Key

Rating	Points
No lectures were dedicated to a certain component.	0
Part of one lecture was dedicated to a certain component.	1
One whole lecture was dedicated to a certain component.	2
Two or more lectures were dedicated to a certain component.	3

Reading Instruction

Taa Reading Schemes of Work Rating

	Phonemic Awareness	Phonics	Fluency	Vocabulary	Comprehension	Total
Number of Lectures	+2	+2	+2	+2	+2	
Points	3	3	3	3	3	15

Maarifa Reading Schemes of Work Rating

	Phonemic Awareness	Phonics	Fluency	Vocabulary	Comprehension	Total
Number of Lectures	+2	+2	+2	+2	+2	
Points	3	3	3	3	3	15

Mathematics Instruction

Taa Mathematics Schemes of Work Quality Rating

	Algebra	Data and Probability	Geometry	Measurement	Numbers and Operations	Total
Number of Lectures	+2	+2	+2	+2	+2	
Points	3	3	3	3	3	15

Maarifa Mathematics Schemes of Work Quality Rating

	Algebra	Data and Probability	Geometry	Measurement	Numbers and Operations	Total
Number of Lectures	+2	+2	+2	+2	+2	
Points	3	3	3	3	3	15

General Preparation

Taa General Preparation Schemes of Work Rating: Science

	Physical Science	Life Science	Earth Science	Agriculture	Home Science	Total
Number of Lectures	3	3	3	3	3	
Points	3	3	3	3	3	15

Maarifa General Preparation Schemes of Work Rating: Science

	Physical Science	Life Science	Earth Science	Agriculture	Home Science	Total
Number of Lectures	3	3	3	3	3	
Points	3	3	3	3	3	15

Taa General Preparation Schemes of Work Rating: Social Studies

	Physical	Social	Economic	Political	International	Total
Number of Lectures	3+	3+	3+	3+	3+	
Points	3	3	3	3	3	15

Maarifa General Preparation Schemes of Work Rating: Social Studies

	Physical	Social	Economic	Political	International	Total
Number of Lectures	3+	3+	3+	3+	3+	
Points	3	3	3	3	3	15

Professional Preparation

Taa Professional Preparation Schemes of Work Rating

	Foundations	Curriculum	Psychology	Administration, IT, and Resources	Teaching Skills	Total
Number of Lectures	3	3	3	3	3	
Points	3	3	3	3	3	15

Maarifa Professional Preparation Schemes of Work Rating

	Foundations	Curriculum	Psychology	Administration, IT, and Resources	Teaching Skills	Total
Number of Lectures	3	3	3	3	3	
Points	3	3	3	3	3	15

APPENDIX E
STUDENT ACCOUNTABILITY

Three primary means for holding students accountable for demonstrating their knowledge of the subject were evaluated: (1) homework, (2) quizzes, tests, and exams, and (3) practice teaching.

Scoring Key

Scoring Key for Student Accountability

Facet	Description	Points
Assignments	No graded assignments were assigned on the key areas.	0
	Part of a graded assignment dealt with the key areas.	1
	A graded assignment dealt in its entirety with the key areas.	2
	More than one graded assignment dealt with the key areas.	3
Quizzes, tests, and exams	Students were not required to demonstrate knowledge of a component in any quiz, test, or exam.	0
	Students were required to demonstrate knowledge of a component in order to pass a quiz, test or exam.	3
Teaching practice	Students did not have to do any practice teaching to demonstrate what they had learned.	0
	Students had to devote part of a practice teaching session to demonstrate what they had learned.	1

Scoring Key for Student Accountability		
Facet	Description	Points
	Students had to devote one practice teaching session to demonstrate what they had learned.	2
	Students had to devote two or more practice teaching sessions to demonstrate what they had learned.	3

Reading Instruction

Taa Reading Student Accountability Rating

	Phonemic Awareness	**Phonics**	**Fluency**	**Vocabulary**	**Comprehension**	**Total**
Homework Assignments	0	0	0	0	0	0
Quizzes, Tests, Exams	3	3	3	3	3	15
Practice Teaching	0	2	0	0	2	4
Mean Score	1	1.67	1	1	1.67	6.33

Maarifa Reading Student Accountability Rating

	Phonemic Awareness	**Phonics**	**Fluency**	**Vocabulary**	**Comprehension**	**Total**
Homework Assignments	0	0	0	0	0	0
Quizzes, Tests, Exams	3	3	3	3	3	15
Practice Teaching	0	2	0	2	2	6
Mean Score	1	1.67	1	1.67	1.67	7

Mathematics Instruction

Maarifa Mathematics Student Accountability Rating

	Algebra	**Data and Probability**	**Geometry**	**Measurement**	**Numbers and Operations**	**Total**
Homework Assignments	0	0	0	0	0	0
Quizzes, Tests, Exams	3	3	3	3	3	15
Practice Teaching	0	1	3	3	3	10
Mean Score	1	1.33	2	2	2	8.33

General Preparation

Taa General Preparation Student Accountability Rating: Social Studies

	Physical	**Social**	**Economic**	**Political**	**International**	**Total**
Homework Assignments	2	2	2	2	2	10
Quizzes, Tests, Exams	3	3	3	3	3	15
Practice Teaching	3	3	3	3	3	15
Total	2.67	2.67	2.67	2.67	2.67	13.33

Maarifa General Preparation Student Accountability Rating: Social Studies

	Physical	**Social**	**Economic**	**Political**	**International**	**Total**
Homework Assignments	2	2	0	1	0	5
Quizzes, Tests, Exams	3	3	3	3	3	15
Practice Teaching	2	2	2	2	2	10
Total	2.33	2.33	1.67	2	1.67	10

Professional Preparation

Taa Professional Preparation Student Accountability Rating

	Foundations	**Curriculum**	**Psychology**	**Administration, IT, and Resources**	**Teaching Skills**	**Total**
Homework Assignments	0	0	3	0	0	0
Quizzes, Tests, Exams	3	3	3	3	3	15
Practice Teaching	0	3	3	3	3	12
Total	1	2	3	2	2	9

APPENDIX F
TEACHER TRAINING COLLEGE LECTURE AND PRIMARY TEACHER OBSERVATIONS

Factual information will be recorded on six teaching areas: (a) learning objectives, (b) utilization of instructional materials, (c) instructional strategies and techniques, (d) academic learning engaged time, (e) instructional efficiency, and (f) instructional style. These characteristics have been identified as characteristics of effective classrooms (Kukic et.al.). What is seen and heard will be recorded without making judgments, drawing inferences, or interpreting. Each piece of information will be written only once. Arrows will be drawn to other areas where the data may also apply. Behaviors that occur repeatedly will be recorded with tally marks. Anything ambiguous will be written in the questions for clarification section.

<table>
<tr><td colspan="2">Study: Qualitative case study of novice Kenyan primary school teachers.

Time: _____ Date: _____ Place: _____
Interviewee: _____ Position: _____</td></tr>
<tr><td>Learning objectives</td><td>Utilization of Instructional Materials</td></tr>
<tr><td>Instructional Strategies and Techniques</td><td>Academic Learning Engaged Time</td></tr>
<tr><td>Instructional Efficiency</td><td>Instructional Style</td></tr>
<tr><td colspan="2">Questions for Clarification:
_____
_____</td></tr>
</table>

Learning objectives	
Behavioral Statements	Sample Indicators
Communicates appropriate and measurable learning objectives. Checks to determine that students understand expectations and responds appropriately to their feedback. Provides a rationale and focuses students on learning objectives throughout the lesson.	statements of learning objectives clarity of statements rationale statements questions used to check understanding of outcomes responses to student questions measurability of outcomes appropriateness of outcomes
Communicates appropriate and measurable learning objectives. Checks to determine that students understand expectations and responds appropriately to their feedback. Provides a rationale.	
Communicates appropriate and measurable learning objectives. Checks to determine that students understand expectations and responds appropriately to their feedback.	
Communicates measurable learning objectives.	
Conducts lessons without communicating learning objectives.	

Utilization of Instructional Materials	
Behavioral Statements	Sample Indicators
Uses instructional media/materials which relate specifically to the learning objectives. Monitors their effectiveness. Modifies use based upon student feedback.	clarity of materials, visibility, copy quality suitability of materials to learning objectives monitoring of correct use of materials determinations that materials are affecting desired learning creative and/or logical modification of materials
Uses instructional media/materials which relate specifically to the learning objectives. Monitors their effectiveness.	
Uses instructional media/materials specifically to the learning objectives.	
Uses inappropriate instructional media/materials.	
Uses no instructional media/materials.	

Instructional Strategies and Techniques	
Behavioral Statements	Sample Indicators
Uses instructional techniques and strategies which relate specifically to the learning objectives. Monitors their effectiveness. Modifies techniques based on student feedback.	gains students' attention discusses relevancy of lesson evidence of pre-planning use of review techniques clarity of input logical organization and presentation suitability of techniques to learning objectives modification of techniques based on feedback guided practice activities independent practice activities cooperative groups/peer instructional activities
Uses instructional techniques and strategies which relate specifically to the learning objectives. Monitors their effectiveness.	
Uses instructional techniques and strategies which relate specifically to the learning objectives.	
Uses instructional techniques and strategies which relate generally to the learning objectives.	
Uses instructional techniques and strategies which do not relate specifically to the learning objectives.	

Academic Learning Engaged Time	
Behavioral Statements	Sample Indicators
Provides frequent opportunities for all students to be involved/engaged in group and individual activities.	frequency of questions, questioning techniques frequency of individual and group responses verbal and non-verbal responses extensions of learning pacing techniques for maintaining attention opportunities to respond
Provides frequent opportunities for most students to be involved/engaged in group and individual activities.	
Provides opportunities for most students to be involved/engaged in groups.	
Provides opportunities for some students to be involved/engaged in groups.	
Provides little or no opportunities for student involvement.	

Instructional Efficiency	
Behavioral Statements	Sample Indicators
Consistently controls the pace of all instruction based on student feedback	pace of instruction, changes of pace duration of presentation/activities frequency of student errors frequency of correct responses
Consistently controls the pace of most instruction based on student feedback	
Consistently controls the pace of some instruction based on student feedback	
Seldom controls the pace of instruction based on student feedback	
Controls the pace of instruction independent of student feedback	

Instructional Style	
Behavioral Statements	Sample Indicators
Maintains a high level of personal and student enthusiasm. Demonstrates a positive attitude toward individual students and subject matter taught.	liveliness of presentation pace of presentation voice tone, changes in tone facial expressions, smiles, etc. positive interaction with students, verbal and non-verbal frequency of positive feedback, verbal and non-verbal body movement during lesson dignifying student responses
Maintains a high level of personal enthusiasm. Demonstrates a positive attitude toward individual students and subject matter taught.	
Demonstrates personal enthusiasm. Demonstrates a positive attitude toward individual students and subject matter taught.	
Occasionally demonstrates enthusiasm toward students or subject matter taught.	
Demonstrates little or no enthusiasm toward students or subject matter taught.	

APPENDIX G
TEACHER TRAINING COLLEGE FACULTY INTERVIEW PROTOCOL

Study: Qualitative case study of novice Kenyan primary school teachers.

Time: _____

Date: _____

Place: _____

Interviewee: _____

Position: _____

1. Please tell me about your educational background before you began teaching at this college.
2. After graduation, did you teach in a primary school? Where? For how long?
3. How would you characterize or describe your style of teaching? Why do you use this approach?
4. How did you develop your teaching style? Who do you think has most influenced your teaching style?
5. If you were invited to give a seminar to pre-service teachers, what subjects or topics would you present?
6. What do you hope to accomplish in the lives of pre-service teachers?
7. If you were to visit the classroom of one of your former students, what would you hope to see them doing? How would you know you had been successful as a professor?
8. Do you have enough classroom materials (books, paper, writing instruments, chalkboard, desks, and chairs) to teach the way you would like?
9. What materials are lacking? How would the supply of these materials change the way you teach? What would you do differently? What teaching practices would you begin to do? What teaching practices would you eliminate?
10. What professional journals or publications do you read? How often do you read these? What was the last article you read?
11. What professional development activities did you attend in the last year? How did you use the information from these activities?

APPENDIX H
PRIMARY SCHOOL TEACHER INTERVIEW PROTOCOL

Study: Qualitative case study of novice Kenyan primary school teachers.

Time: _____

Date: _____

Place: _____

Interviewee: _____

Position: _____

1. Where did you go to college?
2. Was there a teacher that particularly impressed you or influenced you or helped you? How and why?
3. What courses did you take at the TTCs? Do you feel that they prepared you as a classroom teacher? Why or why not?
4. Which course was most beneficial? Why?
5. What elements of your teaching did you incorporate from your college course?
6. Were there any courses that did not prepare you well? Why do you think that was? What would need to be added to that course to have made it more beneficial?
7. How would you characterize or describe your style of teaching? Why do you use this particular approach? How did you develop your teaching style? Who do you think has most influenced your teaching style?
8. What do you think the parents expect of you as a teacher? Are their expectations realistic? Do you ever feel pressured by them? How or in what way?
9. What do you think the headmaster expects of you as a teacher? Are his/her expectations realistic? Do you ever feel pressured by him/her? How or in what way?
10. Do you feel your class size is too small, too large, or just right? How does class size affect how you teach?
11. Do you have enough classroom materials (books, paper, writing instruments, chalkboard, desks, and chairs) to teach the way you would like?
12. What materials are lacking? How would the supply of these materials change the way you teach? What would you do differently? What teaching practices would you begin to do? What teaching practices would you eliminate?
13. How would you describe the exam pressure placed upon teachers? Do you feel pressured by it? Who is exerting the pressure (students, parents, senior teachers, and headmaster)?
14. Have you ever altered your classroom teaching practices in response to the exam pressure? How and in what way?

APPENDIX I
INTERVIEW ANALYSIS CODING

10 000 Educational background

10 100 Methods

10 200 Character quality

10 300 Content mastery

10 400 Circumstances

10 500 Counseling

10 600 Primary teaching experience

10 610 Yes

10 620 No

12 000 Teaching style

12 100 Lecture and notes

12 200 Child centered

12 300 Non-specific

12 400 Content

12 500 Passion

12 600 Practical

12 700 Professional

12 800 Teacher and student centered

12 900 Impacted by time

13 000 Development of teaching style

13 100 Content drives teaching

13 200 Prepared well

13 210 Maths

13 220 Methodology

13 225 Disciplining students

13 230 Teaching Practice

13 240 Non-specific

13 250 Science

13 260 English

13 270 Music

13 280 Kiswahili

13 290 Drama

13 300 Unprepared

13 310 PE

13 320 Interview

14 000 Seminar subjects

14 100 Practical methods

14 200 Ethics and morals

14 300 Teaching practice linked with curriculum

14 400 Emerging issues

14 500 Language

15 000 Purpose of teaching

15 100 Ethics and morals

15 200 Application of what they have learned

15 300 Interactive, relational

15 400 Specific subject goal

16 000 Success as a teacher trainer

16 100 Impact ethically and morally

16 200 Application of what they have learned

16 300 Informed about their country

16 400 Interactive, relational

17 000 Materials sufficient

17 100 Yes

17 200 No

18 000 Materials lacking

18 100 Books

18 200 Audio visual

18 300 Computer lab

18 400 Maps, globes, charts

18 500 Internet

18 600 Library

19 000 Materials and teaching practice

19 100 Hampered

20 000 Journals, publications

20 100 Yes

20 200 No

21 000 Professional development

21 100 Yes

21 200 No

21 300 Cascade

21 400 Difficult to implement

23 000 Exams

24 000 Practical teaching methods

25 000 Teaching practice

26 000 Textbooks

27 000 New information or advancements

28 000 Reading/language

29 000 Parents

29 100 Appreciate

29 200 Financial

29 300 Character developed

29 400 Results

29 500 Better education

30 000 Headmaster

30 100 Results

30 200 Character developed

30 300 Discipline

30 400 Teachers perform job

30 500 Advocate of teachers

30 600 Cover syllabus

31 000 Class size

31 100 Good

31 200 Too many

31 300 Too few

32 000 Materials

32 100 Amount

32 110 Too few

32 120 Good

32 200 Books

32 300 Audio visuals

32 400 Science equipment

32 500 Globes, maps

32 600 Power

33 000 Materials supplied

33 100 Time

33 200 More content covered

33 300 Homework

33 400 No change

33 400 Interesting, practical

34 000 Exam pressure

34 100 Yes

34 200 No

34 300 Change how teach

34 310 Yes

34 320 No

35 000 Other factors

35 100 Absenteeism

35 200 Hunger

35 300 Bloom's Taxonomy

35 400 New information or advancements

35 500 Reading/language

APPENDIX J
TEACHER TRAINING COLLEGE OBSERVATION DATA

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
0	14	1	1	How were the exams?	Conducts lesson without communicating learning objectives.
	14	1	2	Last time we learned about aids and making charts.	
2	14	2	3	Brought examples of charts.	Uses (some) instructional materials specifically to the learning objectives.
	14	2	4	Brought in slips of paper on which the students were to practice proper handwriting.	
1	14	3	5	What is right about this chart? What is wrong about this chart?	Uses instructional techniques and strategies which relate generally to the learning objectives.
		3	6	Went around and looked at students' handwriting work.	
	14	3	7	Independent practice on proper handwriting for charts.	
0	14	4	8	Question and answer	Provides little or no opportunity for student involvement.
	14	4	9	Urged students to create numerous apparatus so pupils could participate in small groups.	
0	14	5	10	After the handwriting practice, the instructor went to giving notes.	Controls the pace of instruction independent of student feedback.
1	14	6	11	Moderate enthusiasm, positive attitude	Occasionally demonstrates enthusiasm toward students or subject matter taught.
	14	6	12	Gave time to practice handwriting and then collected the samples.	
	14	6	13	Read notes and students wrote. Drew a picture of an abacus on the board. Explained how to make it.	
	14	6	14	Drew place value tray, how to make it.	
		6	15	Drew place value pockets, how to make it.	
		6	16	Fraction boards, how to make it.	
		6	17	Spoke on evaluation, on	

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
				Bloom's Taxonomy and how it related to testing.	
	14	6	18	In primary we are only interested in the first three levels of Bloom's. The rest are for secondary.	
0	15	1	1	How far did we get?	Conducts lesson without communicating learning objectives.
	15	1	2	We will start with language development.	
0	15	2	3	Teacher read notes, student copied.	Uses no instructional materials.
0	15	3	4	Reading/copying notes	Uses instructional techniques and strategies which do not relate specifically to the learning outcome.
0	15	4	5	Called on several students.	Provides little or no opportunity for student involvement.
	15	4	6	Students took notes the entire hour.	
0	15	5	7	Teacher read notes at practiced pace. No questions from students.	Controls pace of instruction independent of student feedback.
0	15	6	8	Seemed very bored; not interested in the subject.	Demonstrates little or no enthusiasm toward students or subject matter taught.
			9	Never heard her name a student.	
	16	Class was scheduled for 11:20. By 11:40 there was still no tutor. The class was in their seats and all were engaged in revision. Two weeks later when I was at the college, this tutor approached me and apologized for not being at class. The tutor said he/she had given revision as the assignment and therefore did not come to class.			
0	17	1	1	We will review for the exam.	Conducts lesson without communicating lesson outcomes.
2	17	2	2	Used the board and an old exam paper.	Uses some instructional

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
		2	3	Drew illustrations on the board.	materials generally related to the learning objectives.
1	17	3	4	Went through an old examination paper—the exam, in other words, drove the content, strategy, and techniques.	Uses instructional techniques and strategies which relate generally to the learning outcome.
1	17	4	5	Question and answer	Provides opportunities for some students to be involved (but not engaged in groups).
	17	4	6	Careful to elicit answers from many.	
	17	4	7	Had students write name as if it were on a block print. Some came to the board to demonstrate. The students were intrigued by this.	
0	17	5	8	Did engage the students in conversation and did get a bit sidetracked at times. But for the most part, going through the exam paper set the pace of the class.	Controls the pace of the instruction independent of student feedback.
4	17	6	10	You have just returned from your posting in schools. Some have done very well. In fact, I heard reports that the children were weeping when you left. You have made a change in their schools.	Maintains a high level of personal and student enthusiasm. Demonstrates a positive attitude toward individual students and subject matter taught.
0	18	1	1	We will continue to hear group reports.	Conducts lesson without communicating learning objectives.
0	18	2	2	None used.	Uses no instructional materials.
3	18	3	3	Group presentation on comparative education. One group member stood and	Uses instruction techniques and strategies which

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
				read notes on its country.	relate specifically to the learning objectives. Monitors their effectiveness
1	18	4	4	Two group members read notes.	Provides opportunities for some students to be involved/engaged in groups.
0	18	5	5	Sat at the back of the room. Let the students take time.	Controls the pace of instruction independent of student feedback.
0	18	6	6	Tutor was bored, had trouble staying focused.	Demonstrates little or no enthusiasm toward students or subject matter taught.
0	19	1	1	We will start with the meaning and expression of religion.	Conducts lessons without communicating learning objectives.
0	19	2	2	No materials; no Bible	Uses no instructional materials.
0	19	3	3	Reads notes; group recitation of the points	Uses instruction techniques and strategies which do not relate specifically to the learning objectives.
0	19	4	4	Students write notes.	Provides little or no opportunities for student involvement.
0	19	5	5	Same practiced pace of note reading.	Controls the pace of instruction independent of student feedback.
0	19	6	6	No enthusiasm. Answered two cell phone calls during class.	Demonstrates little or no enthusiasm toward students or

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					subject matter taught.
0	20	1	1	Today we will do map reading to prepare for teaching practice.	Conducts lesson without communicating learning objectives.
3	20	2	2	Maps, only two protractors for 30 students.	Uses instructional media/materials which relate specifically to the learning objectives. Monitors their effectiveness.
3	20	3	3	Small groups worked to measure features on a map. Students seemed engaged.	Uses instructional techniques and strategies which relate specifically to the learning objectives. Monitors their effectiveness.
2	20	4	4	Asked questions; small group participation	Provides opportunities for most students to be involved.
3	20	5	5	When students had a distance wrong, she backed up and taught scales again.	Consistently controls the pace of most instruction based on student feedback.
3	20	6	6	Class insisted on one answer. They felt comfortable challenging her. She corrected their method. “Those that got 3.0 took a shortcut.” Much laughter.	Maintains a high level of personal enthusiasm. Demonstrates a positive attitude toward individual students and subject matter taught.
0	21	1	1	“Where are we?” Students answer, “counseling.”	Conducts lessons without communicating learning objectives.

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
0	21	2	2	None	Uses no instructional materials.
0	21	3	3	Read and wrote notes; students copied verbatim.	Uses instruction techniques and strategies which do not relate specifically to the learning objectives.
0	21	4	4	Asked a few questions. Mostly lectured.	Provides little or no opportunities for student involvement.
0	21	5	5		Controls the pace of instruction independent of student feedback.
1	21	6	6	Gave a number of good illustrations. At times was lively in her presentation. Her facial expressions were good, and she varied her tone.	Occasionally demonstrates enthusiasm toward students or subject matter taught.
0	22	1	1	Teacher is late. "So we continue with the culture conflict."	Conducts lessons without communicating learning objectives.
2	22	2	2	Assigned literature book	Uses instructional materials specifically to the learning objectives.
1	22	3	3	Students read orally—one page at a time. Had students take down notes.	Uses instruction techniques and strategies which relate generally to the learning objectives.
1	22	4	4	Some, not all, read.	Provides opportunities for some students to be involved.
0	22	5	5	Few stops—read and talked. Asked questions	Controls the pace of instruction independent of

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					student feedback.
1	22	6	6		Occasionally demonstrates enthusiasm toward students or subject matter taught.
0	23	1	1	We are looking at the Holy Spirit and the gifts of the Spirit.	Conducts lessons without communicating learning objectives.
0	23	2	2	No books, no Bible	Uses no instructional materials.
1	23	3	3	Read notes, students copied verbatim. Peer discussion	Uses instruction techniques and strategies which relate generally to the learning objectives.
2	23	4	4	Had students discuss with a partner the difference between joy and happiness.	Provides opportunities for most students to be involved.
0	23	5	5	Peer discussion, otherwise read notes	Controls the pace of instruction independent of student feedback.
1	23	6	6		Occasionally demonstrates enthusiasm toward students or subject matter taught.
0	24	1	1	Just started reading notes.	Conducts lessons without communicating learning objectives.
0	24	2	2	None	Uses no instructional materials.
0	24	3	3	Read notes	Uses instruction techniques and strategies which do not relate

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					specifically to the learning objectives.
0	24	4	4	Few questions	Provides little or no opportunities for student involvement.
0	24	5	5	Read notes	Controls the pace of instruction independent of student feedback.
0	24	6		No enthusiasm	Demonstrates little or no enthusiasm toward students or subject matter taught.
0	25	1	1	We will go through the Tana River project.	Conducts lessons without communicating learning objectives.
0	25	2	2	None	Uses no instructional materials.
0	25	3	3	Read notes. Asked a few questions. Had a student draw a map on the board. This took some time, all just sat there and watched.	Uses instruction techniques and strategies which do not relate specifically to the learning objectives.
1	25	4	4	A few questions; one student who had a book drew a map for everyone to copy.	Provides opportunities for some student involvement.
0	25	5	5		Controls the pace of instruction independent of student feedback.
1	25	6	6	Mentioned a new source of alternative fuel that he/she heard on the news.	Occasionally demonstrates enthusiasm toward students or subject matter taught.
0	26	1	1	We are on school records and finance.	Conducts lessons without communicating

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					learning objectives.
0	26	2	2	No materials—no examples of any of the records the tutor was lecturing about.	Uses no instructional materials.
0	26	3	3	Read notes; students copied verbatim.	Uses instruction techniques and strategies which do not relate specifically to the learning objectives.
0	26	4	4	A few questions. Tutor read notes	Provides few opportunities for some student involvement.
0	26	5	5	Steady reading pace.	Controls the pace of instruction independent of student feedback.
0	26	6	6	No enthusiasm	Demonstrates little or no enthusiasm toward students or subject matter taught.
1	27	1	1	This is our point of interest today. Outlined the lecture—what it is, how you tell if it is contracted, how to prevent.	Communicated learning objectives.
0	27	2	2	No materials	Uses no instructional materials.
0	27	3	3	Read notes, students copied.	Uses instruction techniques and strategies which do not relate specifically to the learning objectives.
1	27	4	4	A few questions	Provides some opportunities for some student involvement.
0	27	5	5	Read notes at a steady pace.	Controls the pace of instruction

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					independent of student feedback.
3	27	6	6	Animated at times—when spoke about infant nutrition, the tutor challenged the students to change their society. He / she referenced the traditional food that is poor in nutrients. I found it ironic that as the tutor spoke about diseases from malnutrition, the college administrator interrupted and announced that only those with ID cards would be allowed to eat lunch. Most of the class did not receive the ID card.	Maintains a high level of personal enthusiasm toward students or subject matter taught.
0	28	1	1	We will learn volleyball today.	Conducts lessons without communicating learning objectives.
0	28	2	2	No materials other than used a wadded up Kleenex to illustrate bumping the ball.	Uses no instructional materials.
0	28	3	3	Read notes, students copied.	Uses instruction techniques and strategies which do not relate specifically to the learning objectives.
0	28	4	4	Some questions, some group recitation	Provides no opportunities for some student involvement.
0	28	5	5	Read notes at a steady pace.	Controls the pace of instruction independent of student feedback.
2	28	6	6	Was at times animated and did enjoy the topic.	Demonstrates personal enthusiasm toward

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					students or subject matter taught.
0	29	1	1	Began to read notes.	Conducts lessons without communicating learning objectives.
2	29	2	2	No materials other than the literature book	Uses instructional materials specifically to the learning objectives.
0	29	3	3	Question and answer	Uses instruction techniques and strategies which do not relate specifically to the learning objectives.
1	29	4	4	Question and answer; one student read aloud.	Provides some opportunities for some student involvement.
0	29	5	5		Controls the pace of instruction independent of student feedback.
2	29	6	6	Was interested in the novel. Appreciated a point mentioned by a student that was not on the topic.	Demonstrates personal enthusiasm toward students or subject matter taught.
0	30	1	1	Just began	Conducts lessons without communicating learning objectives.
2	30	2	2	Students read in Kiswahili from a literature book—one student per chapter.	Uses instructional materials specifically to the learning objectives.
0	30	3	3	One student read aloud while all others listened. No interaction.	Uses instruction techniques and strategies which do not relate specifically to the learning objectives.

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
1	30	4	4	One student read a chapter while the others looked on. They were in small groups following the reading because of the lack of books. There was no group work or group interaction.	Provides some opportunities for some student involvement.
0	30	5	5		Controls the pace of instruction independent of student feedback.
1	30	6	6	She had good eye contact	Occasionally demonstrates personal enthusiasm toward students or subject matter taught.
0	31	1	1	Today we will learn about ornaments.	Conducts lessons without communicating learning objectives.
0	31	2	2	None—irony is that the lesson was on ornaments and jewelry and the tutor admonished the students to improvise.	Uses no instructional materials.
0	31	3	3	Read notes, students copied verbatim.	Uses instruction techniques and strategies which do not relate specifically to the learning objectives.
0	31	4	4	Read notes	Provides no opportunities for some student involvement.
0	31	5	5		Controls the pace of instruction independent of student feedback.
1	31	6	6	Seemed mostly aloof.	Occasionally demonstrates personal enthusiasm toward

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					students or subject matter taught.
0	32	1	1	Gave general topic, but no learning objectives	Conducts lessons without communicating learning objectives.
1	32	2	2	Made students cut out parallelograms from scrap paper and then cut out triangles.	Uses inappropriate instructional materials.
1	32	3	3	Drew illustrations on the board. Read notes. Had students cut out geometric shapes.	Uses instruction techniques and strategies which generally relate specifically to the learning objectives.
2	32	4	4	Cutting out the shapes	Provides opportunities for some student involvement.
2	32	5	5	Waited for students to complete cutting out the shapes.	Consistently controls the pace of some instruction dependent on student feedback.
0	32	6	6	Bored with the material	Demonstrates no personal enthusiasm toward students or subject matter taught.

APPENDIX K
TEACHER TRAINING COLLEGE INTERVIEW DATA

Code	ID	Question Number	Turn Number	Data	Notes
10 000	14	1	1	I have a degree in mathematics. I taught ten years in secondary before coming to Taa College.	
10 620	14	2	2	No	
12 1000	14	3	3	I teach to cover the syllabus. It is lecture and notes, question and answer. I try to involve the students, but there is very little time. We would never cover the syllabus.	
	14	4			
14 100	14	5	4	I would train on how to use practical activities in teaching math.	
	14	6			
	14	7			
17 200	14	8	5	The students don't have the books. Okay, what happens is that they are required to purchase the books when they come to college. But what they do is they borrow a book and get in the registration line and show the book. Then they give the book back. The books are passed around in the registration lines. The students don't have money for the books so they are dependent on you.	
18 100	14	9	6	The books are lacking. I have tried to assign readings to discuss from the book, but the students don't have them and they never do the readings. I tried this with decimals with one class. I told them I would not teach that topic until they did the assigned readings and work. They never did the work.	

Code	ID	Question Number	Turn Number	Data	Notes
				That class never learned decimals.	
	14	10			
21 100	14	11	7	For the past two years we have gone to a workshop to train us how to train the teachers. This one gave us an opportunity to use practical activities. Like in algebra, we would just write 20 + X = 50 and show them on the board how to solve it. Now I learned that if I begin using cards for the numbers and letters and insert them, the students get it very quickly.	
35 300	14	Extra	8	Okay, in primary it is the first three levels. It is knowledge, comprehension, and application. Analysis, synthesis, and evaluation does not occur. The examinations in primary are 100% objective; they are multiple choice which means that analysis, synthesis, and evaluation does not occur. We teach for the exams; I teach for the exams.	I heard you mention in your lecture that in primary you only teach to the first three levels of Bloom's Taxonomy and that the other levels are for secondary and college. Could you please expand on that?
34 000	14	Extra	9	Yes. What happens is that there is complete cramming. It is a test of who can remember the most. When you ask the students in second year some material that was covered in first year, they cannot remember. It is unfortunate, but that is where we are. I have heard that the Ministry is going to overhaul the system to promote more thinking,	So would you say the system is driven by the exam pressure?

Code	ID	Question Number	Turn Number	Data	Notes
				more problem solving. I hope they make those changes.	
12 600	14	Extra	10	There is no time for this. We would never cover the syllabus. The other day we were covering prisms. I could have had the students spend two hours make a prism, but that is just one small part of the syllabus. It would be at the expense of something else.	Have you ever tried to introduce more practical activities or higher cognitive activities in your teaching?
13 230	14	Extra	11	No. The students leave the teaching aids at the school. It is their gift to the school, so they leave the college without any aids. They do not develop a portfolio.	Your lecture concerned making visual aids. Do the students develop a portfolio of aids to use when they become teachers?
10 000	23	1	1	I have a degree in CRE and in geography. I have been at Maarifa for fifteen years. I taught one year in secondary.	
10 620	23	2	2	No	
	23	3			
	23	4			
14 200	23	5	3	I would teach on ethics and morals.	
15 100	23	6	4	I want them to have ethics and morals.	
16 100	23	7	5	I want my teaching to create an impact as they may live a moral and ethical life.	
17 200	23	8	6	The students supply these but the books are expensive.	
17 200 18 100	23	9	7	There are no materials. I use my notes. I attend church and use my teaching from the church.	
20 200	23	10	8	No	
21 200	23	11	9	No. There is no professional development. I have never	

Code	ID	Question Number	Turn Number	Data	Notes
				attended. I do get help from going to church.	
10 000	24	1	1	I have a Masters in education from Kenyatta University.	
10 620	24	2	2	I never taught in primary or secondary school.	
12 200	24	3	3	It is student centered. I involve the students with questions.	
	24	4			
14 300	24	5	4	I would teach on linking teaching practice and how to improve practices.	
15 200	24	6	5	I want them to link their teaching practice to the curriculum.	
16 200	24	7	6	I want to see them implementing. Many do not understand how to implement the teaching they receive. They are taught about development stages but they do not appropriately give the material to the students.	
17 200	24	8	7	We don't have much.	
18 200 18 300	24	9	8	The school does not have audio visual resources. We teach about them but we do not have them. We have a computer lab but it is inefficient for the school.	
20 200	24	10	9	No	
21 200	24	11	10	I have not attended any but I am looking for a scholarship to gain a PhD in education.	
35 300	24	Extra	11	All the domains are appropriate. We apply all the teachings of Piaget. We teach to match the learners according to the stages of Piaget.	What cognitive levels (as delineated by Bloom's Taxonomy) are appropriate for primary school?

Code	ID	Question Number	Turn Number	Data	Notes
12 200	24	Extra	12	It means involving the learner through participation and through the focus of the lesson. This is the essence of our education. Is it a monologue or is it a dialogue? It is when both the teacher and learner are involved.	What does the syllabus mean when it refers to child-centered education as a goal?
35 400	24	Extra	13	We teach the syllabus. When things change, it is up to the KIE and the KNEC to communicate. We cannot make changes on our own.	How do you address changes or advancements in information? For example, in science there has been a reclassification of Pluto as a dwarf planet.
10 000	25	1	1	I have a BA in social studies. I came straight from college to teaching at this school. I have been here two years.	
10 620	25	2	2	No	
12 200	25	3	3	It is student centered.	
13 100	25	4	16	The big problem is that the students have not been taught well in social studies. They don't know about Kenya. I must make sure they have the content right.	
14 400	25	5	4	I would teach on emerging issues—especially the HIV. You know students are with the young. They need to know these things. These type of topics must be infused into the curriculum.	
15 200	25	6	5	I want them to be aware of the environment. I want them to relate well to their environment and use it wisely.	

Code	ID	Question Number	Turn Number	Data	Notes
15 200	25	6	6	I want them to be informed about their country.	
16 300	25	7	7	I want them to teach about their country. Students must learn about Kenya—the people and the environment. They must learn their place in Kenya.	
17 100	25	8	8	Yes, we have the books and files. The students cater for themselves.	
18 400	25	9	9	No, we don't have resources like maps, globes, or charts.	
19 100	25	9	10	Our implementation is hampered by lack of resources.	
20 200	25	10	11	None	
21 100	25	11	12	We have had professional development in the past. The head teacher had ICT and informed us, but we don't have computers.	
21 300	25	11	13	The head goes and informs us. It is cascade.	
14 400	25	Extra	14	Politics is a very lively class. Students are unaware of what is going on. Politics is something I would teach on.	She added this comment as an afterthought about the subjects she would present at a seminar.
18 000	25	Extra	15	No, students can take from the library.	I asked if she brought newspapers to the class. I saw one newspaper in the library. It was a local paper—The Nation—and was being read by the electrical technician who was also serving as the librarian.
18 100	25	Extra	17	The college chooses the	What text have

Code	ID	Question Number	Turn Number	Data	Notes
				text. I do not choose the text. It is Revision PTE.	you chosen for the course?
10 000	26	1	1	I have a master in education from the University of Nairobi and a BA from Moi University.	
10 000	26	1	2	I taught in secondary two years before coming to the college. I taught English and literature.	
10 620	26	2	3	No	
	26	3			
	26	4			
14 500	26	5	4	I want to be the MoE.	
14 500	26	5	5	I want to change the mother tongue policy. This is what I would speak on. I am very interested in language.	
14 500	26	5	6	Parents do not want mother tongue instruction.	
14 500	26	5	7	Mother tongue instruction marginalizes the rural students.	
14 500	26	5	8	It creates an elite—an urban elite in the country because those in the city teach and speak English.	
14 500	26	5	9	English is the language of the world. It is the global language.	
14 500	26	5	10	I have written a journal article on mother tongue language but it has not been published. It is so difficult to find a publisher.	
14 500	26	5	11	If I were the MoE, I would change the language policy.	
14 500	26	5	12	It should be Kiswahili and English. Mother tongue is for the home. It is not for school.	
15 300	26	6	13	I want my students to teach interactively	
16 400	26	7	21	There should be a	

Code	ID	Question Number	Turn Number	Data	Notes
34 000				relationship, an interaction, but there is so much push for academics and performance on the exams. There is no time for interactive teaching. We must move through the syllabus. There is no time for in-depth or points of interest. We must complete the syllabus.	
17 100	26	8	14	These (books, paper, pencils) we have.	
17 200	26	9	15	We don't have materials or resources.	
17 200	26	9	16	The books are in short supply because they are expensive.	
20 200	26	10	17	I read them. I read the Nation.	The Nation is the daily newspaper. She could not name any educational journals.
21 200	26	11	18	No. I have not had professional development.	
21 400	26	11	19	Even if I did have professional development I could not implement it. We have a structured syllabus.	
10 000	29	1	1	I have a diploma in English and a teaching certificate.	
10 620	29	2	2	No, I came from college to here.	
	29	3			
	29	4			
	29	5			
	29	6			
15 200	29	7	3	I hope to see them implement what I have taught.	
15 400	29	7	4	I hope the students would have their pupils reading by primary two.	

Code	ID	Question Number	Turn Number	Data	Notes
17 200	29	8	5	No, these are in short supply.	
18 100	29	8	6	The students cannot afford the books. They must rely on the teacher.	
19 100	29	9	7	We have few resources.	
19 000	29	9	8	This is a public college. There is a big difference between public and private. They have more resources than we do.	
18 100 18 500 18 600	29	8	9	We have no books, no internet, and the library is empty.	
20 200	29	10	10	No	
21 200	29	11	11	Not so much. The British Council use to give us professional development, but they do not do this anymore.	
34 000	29	Extra	12	Exams drive the instruction. We always have to race through and there is very little depth.	This was in response to a comment about needing to revise with the students. I asked a question about exam pressure.
10 000	33	1	1	I have a degree in English.	
10 620	33	2	2	No	
	33	3			This was a casual conversation I had with an English teacher in the lounge. I did not observe his/her teaching. I did not ask many of the interview questions. It was more of a chat as he/she waited to go to class.
	33	4			
	33	5			
	33	6			
	33	7			
	33	8			
	33	9			
	33	10			
	33	11			
35 500	33	Extra	3	There is not a lot of	I asked about

Code	ID	Question Number	Turn Number	Data	Notes
				emphasis on speech and reading.	teaching reading, the amount of emphasis given in the syllabus.
35 500	33	Extra	4	It is assumed that they come with enough language skills, but they don't.	
34 000	33	Extra	5	You know there is a lot of pressure to pass the examinations.	
34 000	33	Extra	6	The trainees expect to pass. The staff expects you to teach so they can pass.	
35 500 34 000	33	Extra	7	There is not a lot of emphasis on reading and speaking and articulation. That is not examined.	
Incomplete Interviews					
Code	**ID**	**Question Number**	**Turn Number**	**Data**	**Notes**
	22	1	1	I was the Dean of students at a secondary school. I taught at Taa College before coming here.	
	22	2	2	No	
	22	3	3	I involve the students through the discussion.	
	21	1	1	I went to a primary teacher college. Then I went back to school and got a degree in education.	
	21	2	2	I taught in primary school for many years. I came to Taa and have taught here over seven years. This background helps me to give real application to the students. I know what they will face because I faced it myself.	
	21	6	3	The joy of the teacher is seeing the success of your students.	
	20	1	1	I have a masters degree. I	

Code	ID	Question Number	Turn Number	Data	Notes
				have taught here 16 years. I taught 3 years in secondary before coming here.	
	20	2	2	No	
	20	7	3	I would want to see they have the proper documents and have prepared visual aids.	
	20	8	4	There are few texts. When they are ordered they do not come.	
	20	11	5	No, there is no chance for professional development.	
	19	1	1	I have a degree. I taught 7 years in secondary then I came here.	
	19	2	2	No	
	19	7	3	I want to see they have their proper documents. I want to see them doing things as I have done them—using storytelling, visuals, and giving out the content.	
	18	1	1	I have a degree. I taught 23 years in TTCss—6 years at Taa.	
	18	2	2	No	
	19	1	1	I have a degree in Creative Arts. I taught in the special unit for many years. I also taught in secondary.	
	19	2	2	Yes.	
	19	5	3	I would teach about the child—the primary child, what he is like. I would also teach the curriculum and syllabus and how to improvise. It is so important to teach the syllabus.	
	19	7	4	I want them to use the techniques I have taught them.	
	15	1	1	I have taught here since 2001. That is how many	

Code	ID	Question Number	Turn Number	Data	Notes
				years?	
	15	2	2	Yes	
	15	5	3	I would give a seminar on how to treat the children. I was a primary teacher and I know this is important.	

APPENDIX L
PRIMARY TEACHER OBSERVATION DATA

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
0	01	1	1	Today we will learn about methods of controlling livestock parasites.	Conducts lesson without communicating learning objectives.
1	01	2	2	Board and chalk	Uses inappropriate instructional materials.
0	01	3	3	Drew on board, question and answer	Uses instructional techniques and strategies which do not relate specifically to the learning outcome.
0	01	4	4	Question and answer. How many have seen a kettle dip?	Provides little or no opportunity for student involvement.
0	01	5	5		Controls pace of instruction independent of student feedback.
2	01	6	6	Though few had books, he patiently drew illustrations, asked questions, and explained the material. He was polite and showed interest in the topic.	Demonstrates personal enthusiasm. Demonstrates a positive attitude toward individual students and subject matter taught.
0	01	1	7	Today we will learn about the LCM.	Conducts lesson without communicating learning objectives.
1	01	2	8	Board and chalk; those that had textbooks shared with others.	Uses inappropriate instructional materials.
0	01	3	9	Demonstration, explanation	Uses instructional techniques and strategies which do not relate specifically to the learning outcome.
0	01	4	10	Question and answer, no students at board, no group work. Students worked independently	Provides little or no opportunity for student involvement.

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
0	01	5	11		Controls pace of instruction independent of student feedback.
2	01	6	12	He was enthusiastic and showed interest	Demonstrates personal enthusiasm. Demonstrates a positive attitude toward individual students and subject matter taught.
0	01	1	13	We are learning measurement (decimals)	Conducts lesson without communicating learning objectives.
1	01	2	14	Board, books—13 books among 22 students	Uses inappropriate instructional materials.
0	01	3	15	He showed the students examples of converting cm to m, etc. but he did not refer to a pattern or any pneumonic to help them remember.	Uses instructional techniques and strategies which do not relate specifically to the learning outcome.
0	01	4	16	Students worked independently though they shared books.	Provides little or no opportunity for student involvement.
0	01	5	17		Controls pace of instruction independent of student feedback.
2	01	6	18	Showed enthusiasm and interest toward the subject.	Demonstrates personal enthusiasm. Demonstrates a positive attitude toward individual students and subject matter taught.
0	01	1	19	Turn to page 56 for simplifying expressions	Conducts lesson without communicating learning objectives.
1	01	2	20	Board and books—9 books for 26 students	Uses inappropriate instructional

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					materials.
0	01	3	21	Demonstration, question and answer. Independent practice.	Uses instructional techniques and strategies which do not relate specifically to the learning outcome.
0	01	4	22	Are we together? Group recitation	Provides little or no opportunity for student involvement.
0	01	5	23		Controls pace of instruction independent of student feedback.
2	01	6	24	Positive interaction with students; smiled; showed interest in the subject.	Demonstrates personal enthusiasm. Demonstrates a positive attitude toward individual students and subject matter taught.
0	02	1	1	We will revise the signs and symptoms of typhoid.	Conducts lesson without communicating learning objectives.
1	02	2	2	Board	Uses inappropriate instructional materials.
0	02	3	3	Question and answer	Uses instructional techniques and strategies which do not relate specifically to the learning outcome.
1	02	4	4	Students raised hands eagerly to answer. Allowed many students to participate by answering questions—he made a point of calling on those who were quiet.	Provides opportunity for some student involvement.
0	02	5	5		Controls pace of instruction independent of

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					student feedback.
2	02	6	6	Jovial, smiled, walked through rows, positive toward students.	Demonstrates personal enthusiasm. Demonstrates a positive attitude toward individual students and subject matter taught.
0	02	1	7	Today we will revise fractions.	Conducts lesson without communicating learning objectives.
1	02	2	8	Board—drew examples of fractions	Uses inappropriate instructional materials.
2	02	3	9	Drew fraction bars and circles	Uses instructional techniques and strategies which relate specifically to the learning outcome.
0	02	4	10	Seemed to call on one child for the majority of the answers. The rest had trouble focusing.	Provides little or no opportunity for student involvement.
0	02	5	11		Controls pace of instruction independent of student feedback.
2	02	6	12	Smiled, walked through the aisles.	Demonstrates personal enthusiasm. Demonstrates a positive attitude toward individual students and subject matter taught.
0	02	1	13	Today is revision on vocabulary. We will confirm what we know.	Conducts lesson without communicating learning objectives.
1	02	2	14	Board	Uses inappropriate instructional materials.
0	02	3	15	Chalk and talk	Uses instructional

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					techniques and strategies which do not relate specifically to the learning outcome.
0	02	4	16	Opportunity for some but the majority did not speak	Provides little or no opportunity for student involvement.
0	02	5	17		Controls pace of instruction independent of student feedback.
2	02	6	18	Smiled, walked through rows.	Demonstrates personal enthusiasm. Demonstrates a positive attitude toward individual students and subject matter taught.
0	02	1	19	We will do revision today of the test.	Conducts lesson without communicating learning objectives.
2	02	2	20	Test papers, board	Uses instructional materials specifically to the learning objectives.
0	02	3	221	Question and answer	Uses instructional techniques and strategies which do not relate specifically to the learning outcome.
0	02	4	22	Many did not answer, he did not call on all in the class.	Provides little or no opportunity for student involvement.
0	02	5	23		Controls pace of instruction independent of student feedback.
1	02	6	24	Laughed at a child's mistake. "Why are you writing it here? You are getting confused."	Occasionally demonstrates enthusiasm toward students and subject

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					matter taught.
0	03	1	1	Barua Rasmi (Official Letters)	Conducts lesson without communicating learning objectives.
2	03	2	2	Used board, had students write in elements of the letter.	Uses instructional materials specifically to the learning objectives.
3	03	3	3	Board work by students. Logical, guided practice	Uses instructional techniques and strategies which relate specifically to the learning outcome. Monitors their effectiveness.
1	03	4	4	Students came to board and filled in letter parts. Lots of questions and answers.	Provides opportunity for some student involvement.
3	03	5	5	Fast paced, yet would pause and review based on understanding/errors.	Consistently controls pace of instruction dependent on student feedback.
4	03	6	6	Very enthusiastic voice—at time theatrical in presentation which kept students motivated and interested in participating.	Maintains a high level of personal and student enthusiasm. Demonstrates enthusiasm toward students and subject matter taught.
0	03	1	7	Today we will review vocabulary.	Conducts lesson without communicating learning objectives.
0	03	2	8	Board, books	Uses inappropriate instructional materials.
0	03	3	9	Question and answer; written exercises after question and answer	Uses instructional techniques and strategies which do not relate specifically to the learning outcome.

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
1	03	4	10	Involved many through questions.	Provides opportunity for some student involvement.
1	03	5	11	Fast paced	Consistently controls pace of some instruction dependent on student feedback.
4	03	6	12	Personal enthusiasm toward the subject. Very gregarious and theatrical in presentation.	Maintains a high level of personal and student enthusiasm. Demonstrates enthusiasm toward students and subject matter taught.
0	04	1	1	Singular and plural	Conducts lesson without communicating learning objectives.
0	04	2	2	Book	Uses inappropriate instructional materials.
0	04	3	3	He spoke and students responded either individually or chorally.	Uses instructional techniques and strategies which do not relate specifically to the learning outcome.
0	04	4	4	Some answered, a few read, all at times answer chorally.	Provides little or no opportunity for student involvement.
0	04	5	5	Medium paced	Controls pace of instruction independent of student feedback.
0	04	6	6	He was bored. The students were either bored or lost.	Demonstrates little or no enthusiasm toward students or subject matter taught.
0	04	1	7	Wrote on the board: School community: education	Conducts lesson without communicating learning objectives.

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
1	04	2	8	Book and board	Uses inappropriate instructional materials.
0	04	3	9	Question and answer; read his notes, students copied; gave a written assignment	Uses instructional techniques and strategies which do not relate specifically to the learning outcome.
0	04	4	10	Students wrote down the notes and some answered questions.	Provides little or no opportunity for student involvement.
0	04	5	11	Slow paced	Controls pace of instruction independent of student feedback.
0	04	6	12	Little enthusiasm—in fact I found him bored and gruff with the students.	Demonstrates little or no enthusiasm toward students or subject matter taught.
0	04	1	13	Revision of the test.	Conducts lesson without communicating learning objectives.
2	04	2	14	Tests—it was a revision of the Bible test, but did not use the Bible.	Uses instructional materials specifically to the learning objectives.
1	04	3	15	Question and answers about the test items.	Uses instructional techniques and strategies which relate generally to the learning outcome.
0	04	4	16	Called on some students.	Provides little or no opportunity for student involvement.
0	04	5	17	Controlled by him	Controls pace of instruction independent of student feedback.
0	04	6	18	Rather bored with the lesson.	Demonstrates little or no enthusiasm

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					toward students or subject matter taught.
0	04	1	19	Manure soil fertilizer	Conducts lesson without communicating learning objectives.
1	04	2	20	Board and book	Uses inappropriate instructional materials.
0	04	3	21	Note giving and note taking; question and answer	Uses instructional techniques and strategies which do not relate to the learning outcome.
0	04	4	22	Students listened to him read the notes	Provides little or no opportunity for student involvement.
0	04	5	23	Slow for note taking	Controls pace of instruction independent of student feedback.
0	04	6	24	Not very interested in the subject.	Demonstrates little or no enthusiasm toward students or subject matter taught.
0	05	1	1	Today we will look at the government.	Conducts lesson without communicating learning objectives.
0	05	2	2	Book and board	Uses inappropriate instructional materials.
1	05	3	3	Reviewed yesterday's lesson. Gained attention through choral responses. Logical presentation—outlined the chapter on the board.	Uses instructional techniques and strategies which generally relate to the learning outcome.
1	05	4	4	Called on students throughout the lesson.	Provides some no opportunity for student involvement.
0	05	5	5	Fast paced	Controls pace of

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					instruction independent of student feedback.
4	05	6	6	Lively, smiled, positive interaction, called students by name, walked among students.	Maintains a high level of personal and student enthusiasm. Demonstrates enthusiasm toward students and subject matter taught.
0	05	1	7	Singular and plurals	Conducts lesson without communicating learning objectives.
1	05	2	8	Board and book	Uses inappropriate instructional materials.
0	05	3	9	Question and answer	Uses instructional techniques and strategies which do not relate to the learning outcome.
2	05	4	10	Had students create sentences using the plural and singular forms.	Provides opportunity for most students to be involved.
2	05	5	11	Fast paced	Controls pace of instruction dependent of student feedback.
4	05	6	12	Smiled, enthusiastic, charismatic, humorous	Maintains a high level of personal and student enthusiasm. Demonstrates enthusiasm toward students and subject matter taught.
0	05	1	13	Formations—volcanic and block mountains	Conducts lesson without communicating learning objectives.
1	05	2	14	Books and board	Uses inappropriate instructional materials.
2	05	3	15	Questions and answers,	Uses instructional

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
				outlined the book verbally, and wrote key points on the board. Reviewed the key topics at the end of the lesson. Used three books to demonstrate block mountains.	techniques and strategies which relate generally to the learning outcome.
2	05	4	16	All eager to answer, really worked the room—55 students in the class	Provides opportunity for most students to be involved.
2	05	5	17	Fast paced—would stop and explain a point if needed	Controls pace of instruction dependent of student feedback.
4	05	6	18	Very enthusiastic	Maintains a high level of personal and student enthusiasm. Demonstrates enthusiasm toward students and subject matter taught.
0	05	1	19	Word tenses	Conducts lesson without communicating learning objectives.
1	05	2	20	Board work	Uses inappropriate instructional materials.
0	05	3	21	Question and answer, choral response	Uses instructional techniques and strategies which do not relate to the learning outcome.
2	05	4	22	Rapid questions, individual and choral response	Provides opportunity for most students to be involved.
2	05	5	23	Reiterated points when needed	Controls pace of instruction dependent of student feedback.
4	05	6	24	Positive interaction, students enjoyed his humor	Maintains a high level of personal and student enthusiasm.

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					Demonstrates enthusiasm toward students and subject matter taught.
0	05	1	25	We will continue from yesterday. We learned about serving others. Today we learn about serving at home.	Conducts lesson without communicating learning objectives.
1	05	2	26	All had books. Used board.	Uses inappropriate instructional materials.
1	05	3	27	Question and answer, giving notes, writing notes, choral response. Main points written on board and reviewed at end.	Uses instructional techniques and strategies which generally relate to the learning outcome.
2	05	4	28	Fast paced, choral response, individual response	Provides opportunity for most students to be involved.
2	05	5	29	Clarified points before moving on.	Controls pace of instruction dependent of student feedback.
3	05	6	30	Students enjoyed his presentation until half-way through.	Maintains a high level of personal enthusiasm. Demonstrates enthusiasm toward students and subject matter taught.
0	05	1	31	Interaction among African communities	Conducts lesson without communicating learning objectives.
1	05	2	32	Book, board	Uses inappropriate instructional materials.
1	05	3	33	Outlined main points on the board, choral response, reviewed points at end	Uses instructional techniques and strategies which generally relate to the learning

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					outcome.
2	05	4	34	Question and answer, choral response	Provides opportunity for most students to be involved.
1	05	5	35	Fast paced, clarified points and student answers	Controls pace of instruction dependent of student feedback.
4	05	6	36	Lively, smiled, positive interaction	Maintains a high level of personal and student enthusiasm. Demonstrates enthusiasm toward students and subject matter taught.
0	06	1	1	Vocabulary	Conducts lesson without communicating learning objectives.
	06	2	2	Books, board	Uses inappropriate instructional materials.
0	06	3	3	Question and answer, note giving and taking, choral response	Uses instructional techniques and strategies which do not relate to the learning outcome.
1	06	4	4	Question and answer, create a sentence using the vocabulary word, choral response, pretend to cycle	Provides opportunity for some student involvement.
1	06	5	5	Fast paced	Controls pace of instruction dependent of student feedback.
2	06	6	6	Smiled, positive interaction	Demonstrates personal enthusiasm. Demonstrates a positive attitude toward students or subject matter taught.
0	06	1	7	Food crops and types of crops	Conducts lesson without

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					communicating learning objectives.
2	06	2	8	Had students bring in samples of food crops. Used board and books—7 books for 26 students	Uses instructional materials that relate specifically to the learning objectives.
0	06	3	9	Question and answer, choral responses, wrote notes on the board, students copied	Uses instructional techniques and strategies which do not relate to the learning outcome.
1	06	4	10	Through question and answer and choral responses	Provides opportunity for some student involvement.
2	06	5	11	Clarified answers	Controls pace of instruction dependent of student feedback.
2	06	6	12	Smiled, walked around and checked notes	Demonstrates personal enthusiasm. Demonstrates a positive attitude toward students or subject matter taught.
0	06	1	13	We will discuss eternal life.	Conducts lesson without communicating learning objectives.
0	06	2	14	Wrote notes on the board. Students copied.	Uses instructional materials that do not relate specifically to the learning objectives.
0	06	3	15	Choral recitation, question and answer, note writing	Uses instructional techniques and strategies which do not relate to the learning outcome.
1	06	4	16	Class sang a hymn, choral recitation, question and answer	Provides opportunity for some student involvement.
1	06	5	17		Seldom controls pace of instruction

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					dependent of student feedback.
2	06	6	18	Positive, smiled	Demonstrates personal enthusiasm. Demonstrates a positive attitude toward students or subject matter taught.
0	07	1	1	Revision on drugs	Conducts lesson without communicating learning objectives.
1	07	2	2	Board and book	Uses inappropriate instructional materials.
1	07	3	3	Question and answer, paired group discussion, choral response, some note taking	Uses instructional techniques and strategies which generally relate to the learning outcome.
3	07	4	4	Paired group discussion—"Speak with a person about this."	Provides opportunity for most students to be involved in group activities.
2	07	5	5		Controls pace of instruction dependent of student feedback.
3	07	6	6	Enthusiastic, used metaphors, reasoning	Maintains a high level of personal and student enthusiasm. Demonstrates enthusiasm toward students and subject matter taught.
0	07	1	7	Revision of test. Some of you did not understand things. Let us give a clap for those who did.	Conducts lesson without communicating learning objectives.
1	07	2	8	Books and board	Uses inappropriate instructional materials.

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
1	07	3	9	Guided practice, correction of errors	Uses instructional techniques and strategies which generally relate to the learning outcome.
1	07	4	10	Question and answer, choral response	Provides opportunity for most students to be involved activities.
2	07	5	11	Medium paced a bit of re-teaching as troublesome topics emerged.	Controls pace of instruction dependent of student feedback.
3	07	6	12	Lively, smiled, children enjoyed	Maintains a high level of personal and student enthusiasm. Demonstrates enthusiasm toward students and subject matter taught.
0	08	1	1	Diseases: Communicable and Immunizations	Conducts lesson without communicating learning objectives.
1	08	2	2	Board	Uses inappropriate instructional materials.
1	08	3	3	Question and answer, choral response, wrote notes, students copied	Uses instructional techniques and strategies which generally relate to the learning outcome.
1	08	4	4	Question and answer, choral response	Provides opportunity for some students to be involved.
1	08	5	5	Reviewed, answered questions	Controls pace of instruction dependent of student feedback.
4	08	6	6	Energetic delivery, students all keen to participate.	Maintains a high level of personal and student enthusiasm.

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					Demonstrates enthusiasm toward students and subject matter taught.
0	08	1	7	Planets, stars, asteroids, and other bodies	Conducts lesson without communicating learning objectives.
1	08	2	8	Board	Uses inappropriate instructional materials.
1	08	3	9	Questions and answers, choral recitation	Uses instructional techniques and strategies which generally relate to the learning outcome.
1	08	4	10	Through question and answer, choral recitation	Provides opportunity for some students to be involved.
1	08	5	11	Medium paced, reviewed, corrected, affirmed, clarified	Controls pace of instruction dependent of student feedback.
4	08	6	12	Students all eager to respond. Raise hands and say “sha, sha, sha.”	Maintains a high level of personal and student enthusiasm. Demonstrates enthusiasm toward students and subject matter taught.
0	08	1	13	Pressure in liquids	Conducts lesson without communicating learning objectives.
2	08	2	14	Board, bottle, water	Uses instructional materials which relate specifically to the learning outcome.
2	08	3	15	Demonstrated pressure in liquids with bottle and water; also drew on the board; used question and	Uses instructional techniques and strategies which specifically relate to

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
				answer	the learning outcome.
1	08	4	16	Through question and answer	Provides opportunity for some students to be involved.
2	08	5	17	Clarified confusion between pressure, mass, gravity, and weight	Controls pace of instruction dependent of student feedback.
4	08	6	18	Students intrigued by experiment.	Maintains a high level of personal and student enthusiasm. Demonstrates enthusiasm toward students and subject matter taught.
0	09	1	1	Soil science	Conducts lesson without communicating learning objectives.
2	09	2	2	Board, soil samples	Uses instructional materials specifically related to outcome.
2	09	3	3	Had students touch soils and then write down their observations. Question and answer, rote recitation. At end reviewed main points with oral quiz.	Uses instructional techniques and strategies which relate specifically to the learning outcome.
4	09	4	4	All handled soil samples and wrote down observations.	Provides opportunity for all students to be involved in activities.
2	09	5	5	Reviewed main points, clarified points	Controls pace of instruction dependent of student feedback.
2	09	6	6	Walked around, smiled.	Demonstrates personal enthusiasm. Demonstrates a positive attitude toward individual students and subject

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					matter taught.
0	09	1	1	Revision of maths	Conducts lesson without communicating learning objectives.
2	09	2	2	Board, test	Uses instructional materials specifically related to outcome.
2	09	3	3	Question and answer, wrote problems on board	Uses instructional techniques and strategies which relate specifically to the learning outcome.
2	09	4	4	Question and answer, some came to the board and wrote out problems.	Provides opportunity for most students to be involved in activities.
0	09	5	5		Controls pace of instruction independent of student feedback.
3	09	6	6	Smiled, cheerful, helpful to students	Demonstrates personal enthusiasm. Demonstrates a positive attitude toward individual students and subject matter taught.
0	10	1	1	Math revision	Conducts lesson without communicating learning objectives.
1	10	2	2	Board, exercise books	Uses inappropriate instructional materials.
1	10	3	3	Clarified like terms, key words	Uses instructional techniques and strategies which relate generally to the learning outcome.
1	10	4	4	Question and answer	Provides opportunity for some students to

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
					be involved in activities.
1	10	5	5	Through question and answer, discussion	Controls pace of instruction dependent of student feedback.
3	10	6	6	There were no lights in the building. The board was barely visible yet she and the students soldiered on with the lesson.	Maintains a high level of personal enthusiasm. Demonstrates a positive attitude toward individual students and subject matter taught.
0	10	1	7	Capital letters in sentences	Conducts lesson without communicating learning objectives.
1	10	2	8	Board, books—12 books for 42 students. The books were distributed at the beginning of the class and collected at the end. They are used for the second stream of 40 students as well. So it is really 12 books for 82 students.	Uses inappropriate instructional materials.
1	10	3	9	Question and answer. Made up sentences.	Uses instructional techniques and strategies which relate generally to the learning outcome.
1	10	4	10	Through question and answer and independent practice.	Provides opportunity for some students to be involved in activities.
1	10	5	11		Controls pace of instruction dependent of student feedback.
3	10	6	12	This classroom was right next to the kitchen. The smell of the charcoal and	Maintains a high level of personal enthusiasm.

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
				the heat from the pots of boiling food poured into the classroom. The students and teachers did not mind.	Demonstrates a positive attitude toward individual students and subject matter taught.
0	10	1	13	How to avoid food poisoned by chemicals and how to properly milk a cow.	Conducts lesson without communicating learning objectives.
2	10	2	14	Board, gloves, empty chemical bottles	Uses instructional materials that relate specifically to the learning objectives.
2	10	3	15	Gave notes, wrote main points on the board. Had students demonstrate how to dispose of chemicals and how to milk a cow.	Uses instructional techniques and strategies which specifically relate to the learning outcome.
1	10	4	16	Through question and answer, demonstration	Provides opportunity for some students to be involved in activities.
1	10	5	17	Through questions/answers	Controls pace of instruction dependent of student feedback.
4	10	6	18	The room was small and the outside noise made hearing difficult. Students told each other to be quiet so they could hear. The students enjoyed the demonstrations.	Maintains a high level of personal and student enthusiasm. Demonstrates a positive attitude toward individual students and subject matter taught.
0	11	1	1	Revision on division	Conducts lesson without communicating learning objectives.
1	11	2	2	No manipulatives were used to help students understand division.	Uses inappropriate instructional materials.
1	11	3	3	Group recitation, problems on the board,	Uses instructional techniques and

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
				individual work	strategies which relate generally to the learning outcome.
2	11	4	4	There were only 5 students in this class. All but one came to the board to solve a problem	Provides opportunity for most students to be involved in activities.
0	11	5	5	Most of the lesson was individual work—35 minutes in the 45 minute lesson.	Controls pace of instruction independent of student feedback.
0	11	6	6	Teacher sat with head on chin while students worked. She did not get up to help any of them.	Demonstrates little or no enthusiasm toward students or subject matter.
0	11	1	7	"So we have done plants."	Conducts lesson without communicating learning objectives.
1	11	2	8	Board, drew plants	Uses inappropriate instructional materials.
1	11	3	9	Choral recitation, drawings on board, note giving, fill in the blank questions.	Uses instructional techniques and strategies which relate generally to the learning outcome.
2	11	4	10	Questions and answers, one child went to the side of the room to sharpen her pencil. She missed the entire review.	Provides opportunity for most students to be involved in activities.
0	11	5	11	Moved through the lesson without correcting errors or confusion. A child used germinating wrong but the teacher didn't explain the difference between that and a seedling. Students could not define seedlings and weeds.	Controls pace of instruction independent of student feedback.
0	11	6	12	She stood with her arms	Demonstrates little

Code	ID	Teaching Area	Turn Number	Data	Behavioral Statements
				crossed as students did the fill in the blank questions—no attempt to help.	or no enthusiasm toward students or subject matter.

APPENDIX M
PRIMARY TEACHER INTERVIEW DATA

Code	ID	Question Number	Turn Number	Data	Notes
10 000	01	1	1	Taa	
10 100	01	2	2	The teacher that helped me most was my math teacher in secondary. The way he taught, his methods were very good. He moved me from the known to the unknown. It is from him that I came to enjoy mathematics.	
13 300	01	3	3	The school prepared me very well. I am very comfortable as a teacher.	
13 210		4	4	All were very good, especially the maths.	
13 220	01	5	5	I try to use the methods of the math teacher from Taa. I teach almost all math here.	
13 310	01	6	6	The one subject I needed more time with was PE. Those classes were too few. If they could maybe add one class a week it would help. Especially in gymnastics. I am not good at gymnastics.	
12 200	01	7	7	I teach to the individual pupil—how they are and where they are. Some get things well and some not. Absenteeism is a big problem. If a kid is gone, he does not have that material. There are no books and he cannot do homework. Also if he lacks food, he cannot do well. These are the things that make teaching very difficult.	
29 100 29 200 29 400	01	8	8	The parents are appreciating. They want us to teach their students but it is difficult. They cannot buy the books or pay anything. The kids are from the Kigari slum.	

Code	ID	Question Number	Turn Number	Data	Notes
				They are very poor. They want them to perform well, but it is difficult.	
30 100	01	9	9	She expects good results. She is new. Our mean score last year was 169. She said okay, let us see this as our base and from here we go forward.	The exam is to 500. A pass is 250.
31 100	01	10	10	Okay, my biggest class size is 42, then 25, 23, 24, and 25. The size is good.	
32 110 32 200	01	11	11	The materials are few. The students do not have. The books we had were stolen last month. Did you see them move to sit with a book?	
32 300	01	12	12	There are no audio visuals. If I had, I would use them. I would be able to show my students. I would expand their understanding.	
33 100 33 200	01	12	13	If we had books and materials there would be many good changes. We would change academically. A whole class cannot depend on one book. It is passed around. If you had books, the time used to write the notes could be used to teach more. Students could do homework. We could move ahead academically.	
34 200	01	13	14	No, the pressure is from me. We must teach to pass the exam.	
34 320	01	14	15	No, the motivation is from inside me. I do what the syllabus entails so I am not pushed by the exams.	
35 100 35 200	01	Extra		The children come from the slum. They are very poor	Why are the children absent?

Code	ID	Question Number	Turn Number	Data	Notes
				families. If the child did not take anything the night before, and he takes nothing in the morning, he does not come. He is not feeling well. We need a feeding program, but we have no sponsor.	Why is it such a big problem?
10 000	02	1	1	Taa	
10 200	02	2	2	I was in a difficult time at home and at school. My teacher took time to talk with me. I want to do that with my own students.	
13 200	02	3	3	They prepared me well	
13 240	02	4	4	None specifically. They were all good.	
12 400	02	5	5	The content. They gave me good content that I give out to the students.	
13 200	02	6	6	No. I was well prepared by all.	
12 3008	02	7	7	It is the best.	I asked this participant several different ways and on two occasions. His answer was the same. He would smile and say it is the best. He would not elaborate.
29 400	02	8	8	They expect results—a good exam performance by their children. This is what matters in Kenya.	
30 100 30 300	02	9	9	He expects good results—that we prepare the students to perform well on the exam. So I must meet that expectation by finishing the syllabus. He also expects that I keep good discipline in the students.	

Code	ID	Question Number	Turn Number	Data	Notes
31 100	02	10	10	Good	
32 110	02	11	11	No, some don't have books.	
32 500 32 600 32 400	02	12	12	The content of the syllabus needs to be updated. For example, we have a new constitution, but we are still teaching the old constitution. We need maps, charts, globes, science experiments.	
33 100 33 400	02	13	13	If we had things like audio visuals or reference books, it would give us more time. The students would not have to take down the notes. We would be able to do experiments and make instruction more lively, more practical in nature.	
34 100	02	14	14	There is always exam pressure. There is always pressure to produce good results.	
34 310	02	14	15	We teach to the exam. This is the whole focus is to pass the exam. We are hoping to get two or three students into the national schools this year. This would be a really good result for this school. It would bring in more students, more fees, and more resources.	
10 000	03	1	1	Taa	
10 200 10 300	03	2	2	The teacher who influenced me most was hard, authoritarian, assertive, and confident. He had mastery over the content of his material.	
13 200 13 250 13 260 13 270 13 280	03	3	3	Yes they were excellent, especially the science teacher. He taught with such passion. The English teacher was also very good—when	

Code	ID	Question Number	Turn Number	Data	Notes
				he got around to marking. But the Kiswahili teacher, he is the Dean of the college; he taught me to love the language. That is what I primarily teach is Kiswahili. And it is sad that we as a country don't know it as well as we should.	
13 200	03	4	4	All were good. I was trained to teach all the subjects but I now just teach Kiswahili.	
12 300	03	5	5	Well I try not to be boring like many of those teachers. Children can get lost very fast. I try to be pupil centered in my teaching. I involve them in the lesson with questions.	
13 240	03	6	6	Not really. I don't use the board as they taught. I use it differently.	
12 200 12 500	03	7	7	My teaching is pupil centered. I teach with aggression and passion. I do extra like make charts. Here is one I drew up for industrial arts on tools.	
29 200 29 400	03	8	8	The parents expect miracles. They want their children to do very well, but if they don't study or do their homework, I have to take three steps back. This slows us down. Then they want to pay extra to have me help their student more. This makes it very difficult with so many demands.	
30 400 40 500	03	9	9	He is understanding. He does not run this as a dictatorship. He expects that the books are marked and that I am not idle. He also	

Code	ID	Question Number	Turn Number	Data	Notes
				steps in to protect us from parents who harass.	
31 200	03	10	10	Our classes are small. Small is the best. If it is large, you cannot keep up in your marking.	
32 120	03	11	11	Students have all their materials.	
32 120	03	12	12	At this school they are not stingy. We can make resources and charts.	He pointed to the tool chart. I asked if he filed them to reuse. He said no. Next time he would have to make a new one.
32 300 32 400	03	12	13	If we had other materials like audio visual or science equipment we could be like Montessori. I Like Montessori because it is practical.	
34 300	03	13	14	Yes, all are expected to perform well. We are trying to get two children into national schools. That is our big goal.	
34 310	03	14	15	Before we finish the term and sit the exams, the students are thoroughly drilled. We go through old exam papers to help them. So yes, we make time in our teaching to thoroughly prepare the students.	
10 000	04	1	1	Taa	
10 100 10 200 10 300	04	2	2	They were very educated in their subjects. They were rigorous.	
13 240	04	3	3	I took all thirteen courses. I was well prepared to teach all the primary subjects.	
13 240	04	4	4	All were good.	
12 100	04	5	5	I use the notes that I took. The notes I received helps	

Code	ID	Question Number	Turn Number	Data	Notes
				me to teach.	
13 240	04	6	6	No. They were all good.	
12 600 12 300	04	7	7	My teaching style is the best. That is how I describe it. I do want to learn more about Montessori. They do more practical lessons, not all this note giving. The practical is very important for the students. The school, however, cannot afford the materials. I do not know how we could do Montessori.	
29 400	04	8	8	They expect me to get good results from the students.	
30 600	04	9	9	He expects me to cover the syllabus and help the students master the content.	
31 100	04	10	10	It is good.	
32 120	04	11	11	The students have books and exercise books. They are required to bring these.	
32 300 32 500	04	12	12	We don't have audio visuals. The students can't see the things I teach about. If I had a globe or maps it would help the student. This is a problem.	
33 400	04	12	13	. I do want to learn more about Montessori. They do more practical lessons, not all this note giving. The practical is very important for the students. The school, however, cannot afford the materials. I do not know how we could do Montessori.	
34 100	04	13	14	There is great pressure to achieve high marks. If you don't have high marks you cannot get in a good school. Our goal is to have two	

Code	ID	Question Number	Turn Number	Data	Notes
				students reach national schools this year.	
34 300	04	14	15	We always teach with the exam in mind. The students will come tomorrow (Saturday) for tuition. This will help them with the exam on Monday. It is another practice exam. They sit nine of these so they can achieve good results on KPCE.	
10 000	05	1	1	Taa. I came straight here. I was quite talented in drama and music so I even came here when I was a student.	
10 300 10 200	05	2	2	They were very professional and knowledgeable.	
13 200 13 270 13 290	05	3	3	I took all thirteen courses but I was best at drama and music. Those courses were very good at Taa.	Another teacher said, "05 is so talented in music and drama. He has led us to nationals. You must come and see Nixon in drama and music.
13 240	05	4	4	All were good.	
13 100 13 220	05	5	5	All the notes and content and of course the methods.	
13 200	05	6	6	No, all were excellent.	
12 800	05	7	7	It is teacher and student centered. I lecture and give the main points and involve the students with questions. I take examples from life. I teach from what is known to what is unknown. This way they expand their knowledge.	
29 400	05	8	8	The parents expect high marks on the exam. This is the best school in Kenya. The parents and students are	

Code	ID	Question Number	Turn Number	Data	Notes
				very serious about performing well.	
30 600 30 100	05	9	9	We must cover the syllabus and do well on the exam.	
31 200	05	10	10	The class size is large but it is necessary. We are a very popular school so we must have large classes to accommodate the students.	
32 120	05	11	11	We have enough books so that makes learning efficient.	
33 400	05	12	12	I don't use other materials. I give the notes and the students copy them.	
34 100	05	13	13	The exam pressure is always there. We must ensure the students perform well.	
34 310	05	14	14	The exam is what we all work for. The parents expect a good performance too.	
10 000	06	1	1	Taa. I first taught at Kimuri, but at private school they can fire you in the morning. In private school there is pressure. You must really work. In public school it is easy. There is no pressure and they cannot fire you.	
10 200	06	2	2	They cared that I did well.	
	06	3	3	I took all thirteen and then I specialized in the humanities. I was prepared very well.	
13 260	06	4	4	I liked the English classes. They were very good. I know how to teach English to the students well.	
13 240 13 220	06	5	5	The teachers helped me understand the content and gave me an understanding of the way to teach to the different levels of students.	
13 230		5	6	I think too that the teaching practice helped me.	

Code	ID	Question Number	Turn Number	Data	Notes
13 240	06	6	7	No, all were good.	
12 200	06	7	8	It is child-centered. I involve the students throughout the lesson. This keeps their interest.	
29 400	06	8	9	They expect good results on the exams but most of our students don't perform well. Our scores are not very high.	
30 400 30 600	06	9	10	She expects us to be in class and cover the syllabus.	
31 100	06	10	11	The class size is good.	
32 110 32 200 32 600	06	11	12	The students don't have the books. They have to share.	
32 600 33 200 33 400	06	12	13	We don't have power. If I had power I would use projectors and such; but we don't have any of those.	
34 100	06	13	14	It is there. We must perform well, but these students don't.	
34 320	06	14	15	No	
10 000	07	1		Maarifa	
10 200	07	2	1	The teacher that helped me the most helped me during a difficult time. He cared for me. He was also a good teacher. He did many demonstrations, led good discussions, and had us do projects.	
13 200	07	3	2	Yes. I was very well prepared. All were good.	
13 230	07	4	3	The actual teaching practice was the best. I got to practice my skills.	
13 100	07	5	4	All of them.	
13 320	07	6	5	They should have given us information on interviews and negotiating salaries.	
12 300	07	7	6	It varies from subject to subject. For example during English we do more writing	

Code	ID	Question Number	Turn Number	Data	Notes
				than talking. During CRE we discuss. Ask the students how I teach.	
29 400	07	8	7	They want the best teaching I can give so that their students perform the best.	
30 100 30 200	07	9	8	I am expected to mold the children so that the community will be strong. A student of this school should be distinguished in the community as one that is disciplined and of good character.	
31 100	07	10	9	It is good.	
32 120	07	11	10	The students supply the books and personal materials.	
32 400	07	12	11	I do not have enough of the classroom teaching materials like science equipment. That would make learning interesting. I would be able to arouse the students' interest in the subject.	
32 100 32 200	0 7	12	12	Without equipment and other materials so much time is spent going through the content. There is no way to do experiments or show things easily without drawing it out. Drawing it out takes time.	
34 100	07	13	13	There is always exam pressure. I feel like I am the one setting for the exam. It is very stressful.	
34 320	07	14	14	No. We make time to revise and prepare. It is part of the schemes of work.	
10 000	08	1	1	Maarifa	
10 200	08	2	2	I think they were good because they saw teaching as	

Code	ID	Question Number	Turn Number	Data	Notes
				a calling. They were good role models. I admired them and they worked really hard.	
13 300	08	3	3	Not really; they were okay.	
13 270 13 250	08	4	4	Music and science were the best because they were so practical. The kids like the practical.	
12 700 12 100	08	5	5	I am still trying to follow what I was taught exactly. I am professional, but I know eventually I will be forced to do things my own way.	
12 900 13 100	08	6	6	Some classes are not taught at this school like art and craft. There is no time and they are not on the exam so those were a waste of time.	
13 240	08	7	7	It is free-style; I am easy in the class room but I still am professional.	
29 400	08	8	8	They expect high marks. We had the highest KCPE result last year. All our students perform very well.	
30 100 30 600	08	9	9	She expects me to cover the syllabus and get good results.	
31 200	08	10	10	The class size is large, but it is okay. You must stay on top of your marking or you end up with a large stack.	
32 120 32 200	08	11	11	The students have books and exercise books.	
32 500 32 400 33 400	08	12	12	We have some maps and a globe but we don't have any science equipment. I have to improvise. Our time is spent on giving the notes and drawing 3and explaining. We cannot stop to do practical or to do group work.	
34 100	08	13	13	There is a focus on exams	

Code	ID	Question Number	Turn Number	Data	Notes
				but no pressure. We are expected to perform good, and why not. We are paid to teach and are answerable.	
34 320	08	14	14	No, we learn every day. There is no pressure.	
10 000	09	1	1	Maarifa. I was at one other school near Meru before I came here.	
10 100	09	2	2	My teachers were the best. They gave us very many skills and practical help.	
10 400	09	3	3	I did not want to become a teacher but I was forced by consequences to become one. They helped me to change my opinion through good counseling and pushing me to step up and become a good teacher.	
10 500	09	4	4	The classes on guidance counseling were helpful to me personally. I try to help my students in the same way.	
13 230	09	5	5	The teaching practice and lessons that have practicals in them. The students can see what we are talking about and this helps them.	
13 225 13 250	09	6	6	If I could get more skills in disciplining the students that would help. I also need more help in science. I need to learn how to do experiments and such.	(I saw her yell at a student who was walking slowly into class. She hit him on the back of the head.)
12 600 12 100	09	7	7	A bit practical but not much. There is a shortage of materials like a thermometer would be good. If we had materials that would change the attitude of the students.	
29 400	09	8	8	The parents expect performance; they expect	

Code	ID	Question Number	Turn Number	Data	Notes
				that we deliver; that they pass well.	
30 100 30 300	09	9	9	She expects the same thing. If we don't then you will leave the school. She also expects us to discipline the students.	
31 300	09	10	10	Before I came here I taught in Meru where there were 70 in a class. Here it is small—too small. The kids get bored.	She had a class of 4-8 students.
32 200	09	11	11	There are books.	
32 400 32 300 32 200	09	12	12	We don't have science equipment. Because we don't have audio visuals or equipment we must change—eliminate things that we could teach.	
34 100	09	13	13	There is a lot of exam pressure. It is the biggest pressure I have.	
34 300	09	14	14	Time becomes a big issue. We cannot slow down or we will not cover the syllabus. Also we only teach what is examinable. So there is no music or art or drama.	
10 000	10	1	1	Maarifa. I use to stay in a plot near this school and on school holidays I would volunteer. I find it nice to help. These children come from very poor families and they need help.	
10 200	10	2	2	They were most wonderful. They treated me as an adult and did not demoralize me.	
13 200	10	3	3	Yes	
13 220	10	4	4	Yes, the subject was education—how to handle the children. I also loved physical education. The lessons were quite helpful. I	

Code	ID	Question Number	Turn Number	Data	Notes
				participated in the sports and played on the teams. I think that gave me more energy and discipline.	
13 220	10	5	5	I try to incorporate exactly what I was taught. In class if a child is crying or screaming, if you are not taught to think why they are crying you will not react properly. Or, when you come to a school like this where there are no supplies, you know how to teach without them.	
13 240	10	6	6	No, they were all good.	
12 200	10	7	7	It is child-centered. I think about the child and how to bring things low to their level. I think about how to be simple and explain things well.	
29 400	10	8	8	They hope their children will get better education than they did. They want constant improvement.	
30 100	10	9	9	Performance on exams is expected.	
31 200	10	10	10	There are very many especially when marking the books.	
32 110 32 200 32 300 32 500	10	11	11	There are not enough books. We keep them in the library and hand them out in class. They cannot take them home. There are not enough charts, chalk, or other things. And the rooms are too small.	
33 400	10	12	12	If I had, the lesson would be practical. They could see. We cannot explain or draw everything.	
34 100	10	13	13	Of course there is pressure. But we don't do well. We	

Code	ID	Question Number	Turn Number	Data	Notes
				have poor children and they have no materials.	
34 310	10	14	14	Yes, we look for past exam papers to help us teach. The books don't give the same way the exam does, so this affects performance.	
10 000	11	1	1	Maarifa. I graduated in 2010 and was at a school in Maarifa for just a month before I came here.	
10 200	11	2	2	My mentors were perfect. I am so grateful for them.	
13 200	11	3	3	Yes. I enjoyed the sports like basketball.	
13 230	11	4	4	I enjoyed the teaching practice. When you go I assess myself and they come and assess you too. They give you your mistakes and then help you to do it right. When you come out of college, you come out with confidence.	
13 230	11	5	5	The notes and the practicals if I can have the materials.	
13 240	11	6	6	No, all were good.	
12 600	11	7	7	I do my best to explain, to give questions and do discussions and demonstrations just as I was taught.	
29 300 29 400	11	8	8	They expect me to mold their students. They also have to perform well.	
30 100 30 600	11	9	9	She also expects me to get good performance and to use the syllabus.	
31 300	11	10	10	It is too small but now I can just teach and teach and really move along.	She had five in the class.
32 200 32 110	11	11	11	They have books but other materials we don't have. There is a shortage of these	

Code	ID	Question Number	Turn Number	Data	Notes
				things.	
33 400	11	12	12	I would do more practical teaching.	
34 100	11	13	13	Yes there is some.	
34 320	11	14	14	No, if you cover the syllabus you will be prepared for the exam.	

APPENDIX N
DESIGN ANALYSIS DATA

Design Analysis Data Maarifa College

Facet	Weight of Rating	Multiplied by	Individual Score (Range 0-45)	Weighted Score (Range 0-45)
Reading preparation	0.2	X	26.75	5.35
Mathematics preparation	0.2	X	34.33	6.87
General education preparation	0.2	X	35.84	7.17
Professional preparation	0.2	X	36.67	7.33
Courses offered once a year	0.05	X	45	2.25
Faculty teaches in area of expertise	0.05	X	45	2.25
Exit standard upheld	0.1	X	45	4.5
Total Institution Score				35.72
Name of Institution	Maarifa			

Design Analysis Data Taa College

Facet	Weight of Rating	Multiplied by	Individual Score (Range 0-45)	Weighted Score (Range 0-45)
Reading preparation	0.2	X	19.08	5.22
Mathematics preparation	0.2	X	33.33	6.67
General education preparation	0.2	X	37.33	7.47
Professional preparation	0.2	X	34	6.8
Courses offered once a year	0.05	X	45	2.25
Faculty teaches in area of expertise	0.05	X	45	2.25
Exit standard upheld	0.1	X	45	4.5
Total Institution Score				35.16
Name of Institution Taa				

APPENDIX O
COPYRIGHT PERMISSION LETTERS

National Council on Teacher Quality Permission

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Hi Carol,

We are very pleased to approve your use of our rubrics for evaluation of Kenyan teacher training colleges providing you give the proper attribution in the analysis related to each standard of the source. Good luck and let us know the results.

Julie

Greenberg, J. & Walsh, K. (2008). *No common denominator: The preparation of elementary teacher in mathematics by American education schools.* National Council on Teacher Quality.

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Walsh, K. , Glaser, D., & Wilcox, D. (2006). *What education schools aren't teaching about reading and what elementary teachers aren't learning.* National Council on Teacher Quality.

SET Protocol Permission

Joanna Huhman

Executive Administrative Assistant

Sopris Cambium Education, Inc.

4093 Specialty Place, Longmont CO 80504

f: 303-776-5934

e: joannah@soprislearning.com

www.soprislearning.com

Dear Carol,

We are happy to grant you permission to use the SET material in your study. Thank you for your continued interest in our educational products and programs. Good luck with your project.

Joanna Huhman

Kukic, S., Fister, S. Link, D., & Freston, J. (1989). *The scales for effective teaching*. Logmont, CO: Sopris West, Inc.

UNESCO Permission

Martina Simeti | EFA Global Monitoring Report
UNESCO | 7, place de Fontenoy | Paris 75 352 FRANCE
T. +33 1 456 80952 | F. + 33 1 456 85641
www.efareport.unesco.org

Dear Ms Kranz,

Apologies for the delayed reply. There is no problem in quoting the report or in using the diagram. Pls just refer to:

EFA Global Monitoring Report 2005. Education for All - Global Monitoring Report. Education for All The Quality Imperative, UNESCO.
.
Best regards,

Martina Simeti

UNESCO (2005). *Education for all: the quality imperative.* Education for All Global Monitoring Report, Paris: UNESCO.

APPENDIX P
IRB APPROVAL

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Carol A. Kranz**

Date: **February 04, 2011**

Dear Researcher:

On 2/4/2011, the IRB approved the following activity as human participant research that is exempt from regulation:

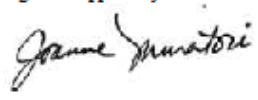
Type of Review:	Exempt Determination
Project Title:	A Qualitative Case Study of Novice Kenyan Primary School Teachers: What Messages Transmitted by the Teacher Training Colleges are Internalized and Applied?
Investigator:	Carol A Kranz
IRB Number:	SBE-11-07443
Funding Agency:	
Grant Title:	
Research ID:	N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Joseph Bielitzki, DVM, UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 02/04/2011 04:07:39 PM EST



IRB Coordinator

APPENDIX Q
PERMISSIONS TO DO RESEARCH IN KENYA

National Council of Science and Technology Approval

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telegrams:"SCIENCETECH", Nairobi
Telephone: 254-020-241349, 2213102
254-020-310571, 2213123,
Fax: 254-020-2213215, 318245, 318249
When replying please quote

P.O. Box 30623-00100
NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref: **NCST/RRI/12/1/SS-011/102/4**

Date: **4th February 2011**

Carol Ann Krantz
University of Central Florida
UNITED STATES OF AMERICA

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*A qualitative case study of novice Kenyan primary school teachers: What messages transmitted by the teacher training colleges are internalized and applied?*" I am pleased to inform you that you have been authorized to undertake research **in Kikuyu and Murang'a Districts** for a period ending ***31st January 2014.***

You are advised to report to **the District Commissioners and the District Education Officers, Kikuyu and Murang'a Districts and the Principals of the selected Teacher Training Colleges** before embarking on the research project.

On completion of the research, you are expected to submit **three hard copies and one soft copy** of the research report/thesis to our office.

P. N. NYAKUNDI
FOR: SECRETARY/CEO

Copy to:
The District Commissioners
Kikuyu District
Murang'a District

The District Education Officers
Kikuyu District
Murang'a District

Ministry of Education Permission

MINISTRY OF EDUCATION

REPUBLIC OF KENYA

Telegrams: "EDUCATION", Nairobi
Telephone: Nairobi 318581
Fax No.: 254-2-214287
When replying please Quote

JOGOO HOUSE 'B'
HARAMBEE AVENUE
P.O. BOX 30040-00100
NAIROBI
25TH FEBRUARY 2011

The Principals
Primary Teacher Training Colleges

Re: Research authorization

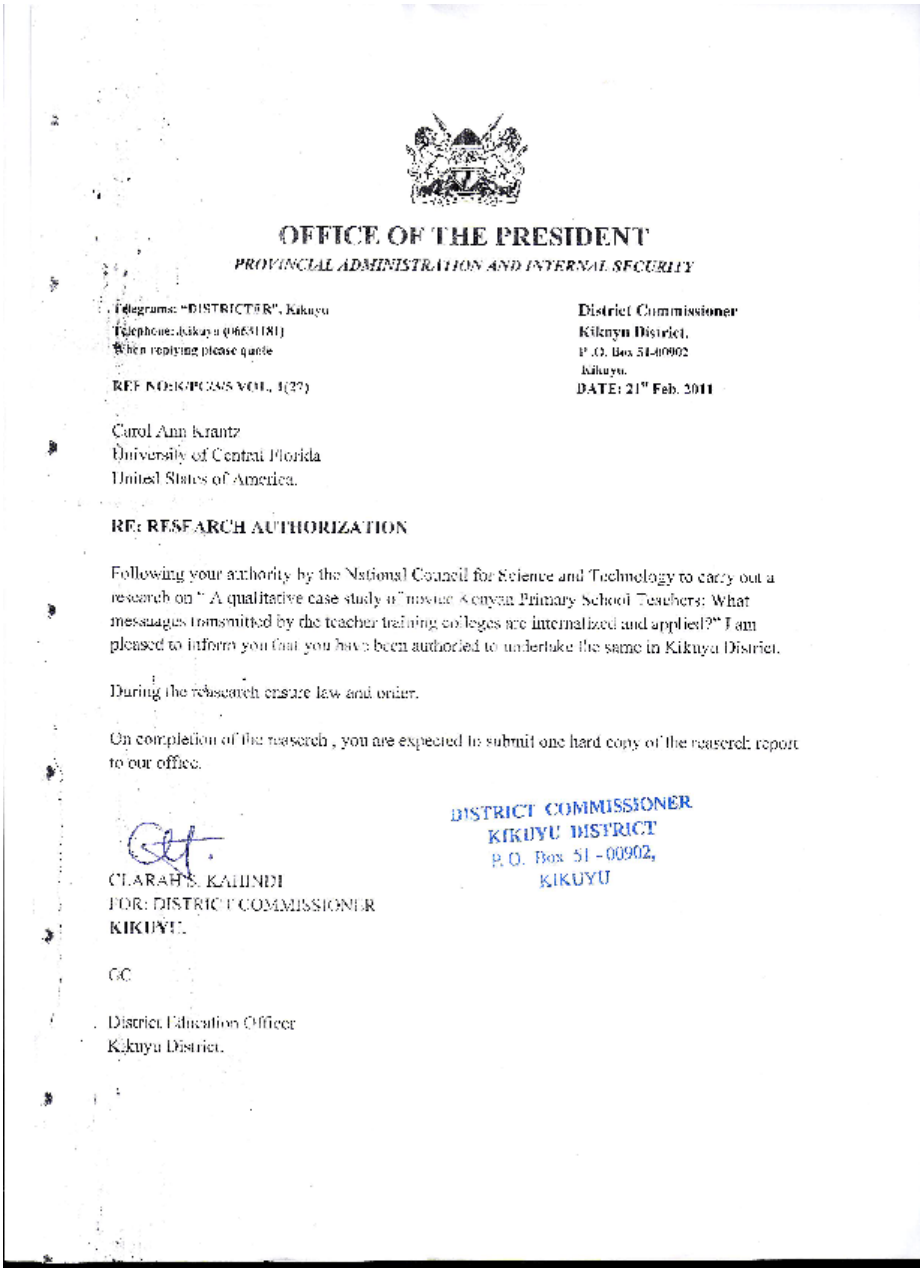
This is to confirm that Carol. A. Kranz from the University of Central Florida has been authorized ~~to~~ by the National Council for Science and Technology to carry out a study in "A Qualitative Case Study of Novice Kenyan Primary School Teachers" in selected P1 Teacher Training Colleges here in Kenya.

This is to request you to accord her the necessary cooperation.

Attached is a copy of the research authority for your reference.

Margaret Thiong'o (Mrs.)
FOR: PERMANENT SECRETARY

Kikuyu District Permission



OFFICE OF THE PRESIDENT

PROVINCIAL ADMINISTRATION AND INTERNAL SECURITY

Telegrams: "DISTRICTER", Kikuyu
Telephone: Kikuyu (0663181)
When replying please quote

REF NO: K/PC/6/5 VOL. 1(22)

District Commissioner
Kikuyu District,
P.O. Box 51-00902
Kikuyu.
DATE: 21st Feb. 2011

Carol Ann Krantz
University of Central Florida
United States of America.

RE: RESEARCH AUTHORIZATION

Following your authority by the National Council for Science and Technology to carry out a research on " A qualitative case study of novice Kenyan Primary School Teachers: What messages transmitted by the teacher training colleges are internalized and applied?" I am pleased to inform you that you have been authorized to undertake the same in Kikuyu District.

During the research ensure law and order.

On completion of the research , you are expected to submit one hard copy of the research report to our office.

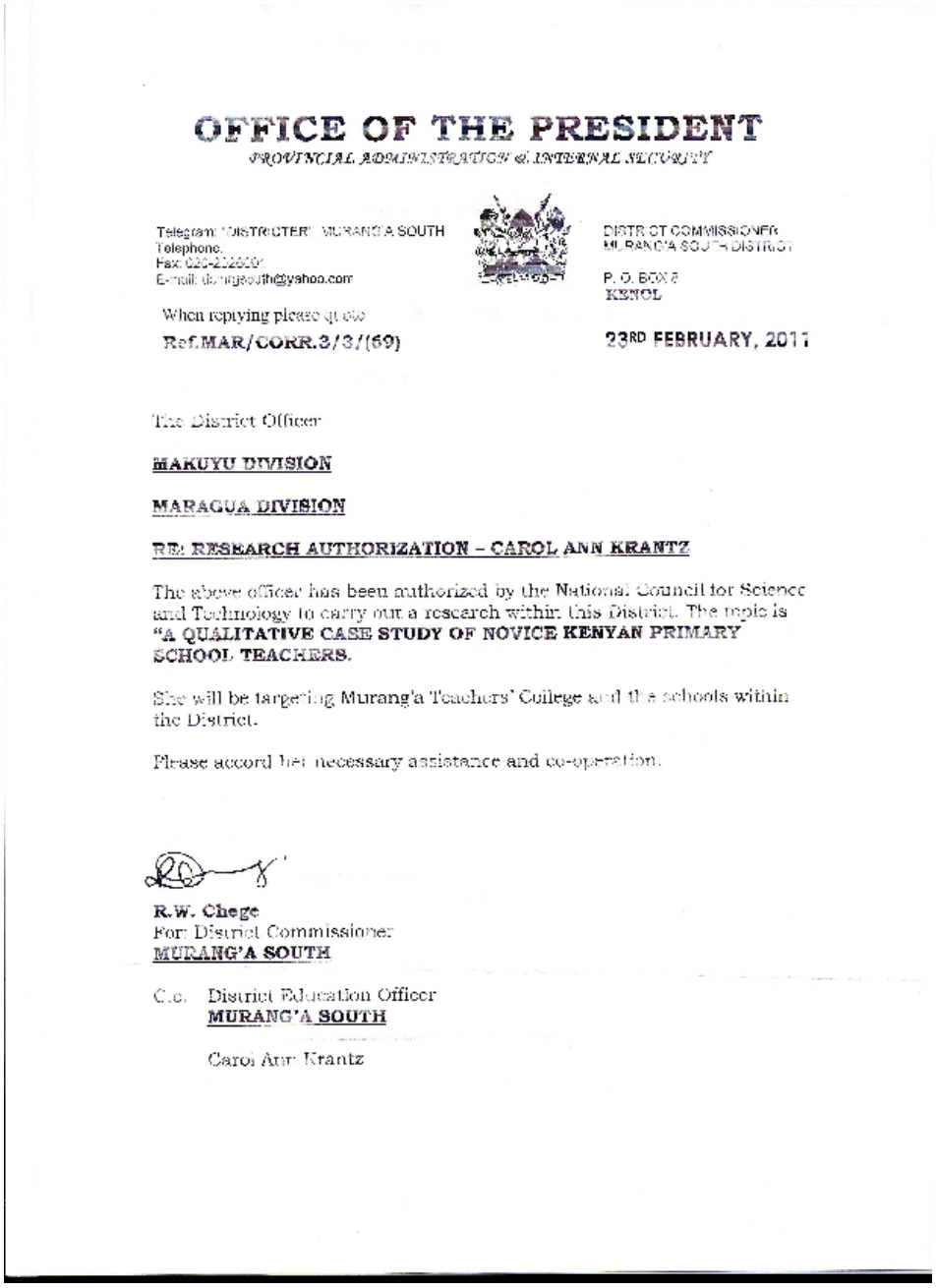
DISTRICT COMMISSIONER
KIKUYU DISTRICT
P. O. Box 51 - 00902,
KIKUYU

CLARAH S. KAITHDI
FOR: DISTRICT COMMISSIONER
KIKUYU.

CC

District Education Officer
Kikuyu District.

Murang'a District Permission



OFFICE OF THE PRESIDENT

PROVINCIAL ADMINISTRATION & INTERNAL SECURITY

Telegram: "DISTRICTER" MURANG'A SOUTH
Telephone:
Fax: 020-2120010
E-mail: dcmrgsouth@yahoo.com

DISTRICT COMMISSIONER
MURANG'A SOUTH DISTRICT

P. O. BOX 8
KENOL

When replying please quote

Ref.MAR/CORR.3/3/(69)

23RD FEBRUARY, 2011

The District Officer

MAKUYU DIVISION

MARAGUA DIVISION

RE: RESEARCH AUTHORIZATION – CAROL ANN KRANTZ

The above officer has been authorized by the National Council for Science and Technology to carry out a research within this District. The topic is **"A QUALITATIVE CASE STUDY OF NOVICE KENYAN PRIMARY SCHOOL TEACHERS.**

She will be targeting Murang'a Teachers' College and the schools within the District.

Please accord her necessary assistance and co-operation.

R.W. Chege
For: District Commissioner
MURANG'A SOUTH

C.c. District Education Officer
MURANG'A SOUTH

Carol Ann Krantz

Kasarani District Permission

OFFICE OF THE PRESIDENT
PROVINCIAL ADMINISTRATION

Telegrams "DISTRICTER".....
Telephone: Nairobi.....
When replying please quote

DISTRICT COMMISSIONER
KASARANI DISTRICT
P.O BOX 30124
NAIROBI

REF: KA/GEN/2/16/33

DATE: 07/03/2018

District Officers
Kasarani District

RE: RESEARCH AUTHORIZATION: CAROL ANN KRANTZ

The above named person is a researcher and intends to carry out one on "**A Qualitative Case Study of Novice Kenyan Primary School Teachers**" within our District.

This is to kindly to request you to accord her the necessary support as she conducts the study.

Thank you

DISTRICT COMMISSIONER

For: District Commissioner
Kasarani District

CC. Municipal Education Officer
Kasarani District

Carol Ann Krantz

APPENDIX R
SCALES FOR EFFECTIVE TEACHING PROTOCOL

KUKIC

The Scales for Effective Teaching

Stevan J. Kukic *Susan L. Fister*
Donald P. Link *Janet L. Freston*

APPENDIX S
TEACHER TRAINING COLLEGE OBSERVATION LOG

Teacher Training College Observation Log			
Instructor Code	TTC	Subject	Observation Time in Hours
14	Taa	Math	2
15	Taa	Education	1
16	Taa	Science	0 (Teacher did not show for class.)
17	Taa	Creative Arts	2
18	Taa	Education	2
19	Taa	CRE	1
20	Taa	Social Studies	2
21	Taa	Education	1
22	Maarifa	English	1
23	Maarifa	CRE	1
24	Maarifa	Education	1
25	Maarifa	Social Studies	1
26	Maarifa	Education	1

Teacher Training College Observation Log			
Instructor Code	TTC	Subject	Observation Time in Hours
27	Maarifa	Science	2
28	Maarifa	Physical Education	2
29	Maarifa	English	1
30	Maarifa	Kiswahili	1
31	Maarifa	Creative Arts	1
32	Maarifa	Math	1

APPENDIX T
PRIMARY TEACHER OBSERVATION LOG

Primary Teacher Observation Log				
Teacher Code	School	Subject	Standard	Observation Time in Minutes
01	Mag	Science	7	110
01	Mag	Math	5	55
01	Mag	Math	7	55
01	Mag	Math	8	55
02	Kim	Science	6	110
02	Kim	Math	4	55
02	Kim	English	7	110
02	Kim	Math	4	55
03	Kim	Kiswahili	7	55
03	Kim	Kiswahili	6	55
03	Kim	Kiswahili	3	40
03	Kim	Kiswahili	2	40
04	Kim	Kiswahili	8	55
04	Kim	Social Studies	6	55
04	Kim	CRE	5	55
04	Kim	Science	6	110
05	Mus	Social Studies	5	55
05	Mus	Social Studies	8	55
05	Mus	Kiswahili	4	55

Primary Teacher Observation Log				
Teacher Code	School	Subject	Standard	Observation Time in Minutes
05	Mus	Science	6	55
05	Mus	Kiswahili	8	55
05	Mus	CRE	3	55
06	Tho	English	4	55
06	Tho	Science	5	55
06	Tho	Science	3	55
06	Tho	CRE	4	55
07	Fou	Science	7	110
07	Fou	Enlish	4	110
07	Fou	Science	4	55
07	Fou	English	7	55
08	Tri	Science	7	110
08	Tri	Science	6	110
08	Tri	Science	7	55
09	Sta	Science	5	55
09	Sta	English	4	55
09	Sta	Math	3	55
09	Sta	Maths	4	110
10	Mog	Maths	7	55

Primary Teacher Observation Log				
Teacher Code	School	Subject	Standard	Observation Time in Minutes
10	Mog	English	5	55
10	Mog	Science	8	55
10	Mog	English	4	55
11	Uta	Math	2	110
11	Uta	English	2	55
11	Uta	CRE	2	55
11	Uta	Science	2	110

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