READING TO LEARN IN THE CONTENT AREAS: A CASE STUDY OF ELIMU TEACHERS COLLEGE IN KENYA

by

HELLEN NASIMIYUH INYEGA

(Under the Direction of Michelle Commeyras)

ABSTRACT

The purpose of this qualitative case study research was to investigate reading to learn with specific focus on Elimu teachers college in Kenya. The significance of this study lies in the fact that reading to learn is paramount to content knowledge acquisition in education and educational programs can be designed to equip students with reading to learn skills and strategies. The participants of the study were 100 students preparing to be teachers of mathematics and science and 16 lecturers, including six (from Biology, English and Communications Skills, Mathematics and Physics departments) who volunteered to be interviewed and observed in class teaching. Data collection methods included interviews, observations and survey questionnaires. Inductive data analysis methods (Glazer and Strauss, 1967) were used to analyze these data. Using a descriptive writing format, the following findings, written in thematic forms, emerged from the data. In general, findings indicate that comprehension and reading to learn at Elimu college was seen as a means to an end - academic achievement. Specifically, English and Communication Skills lecturers prepare pre-service teachers for comprehension and reading to learn in the content areas by focusing on five sub-processing skills of comprehension as well as sharpening

students' oral and written communication skills. Secondly, lecturers in the content areas of mathematics and science were not conscious of their efforts to include literacy instruction in their content area instruction. However, data from interviews and observations of teaching show that lecturers of mathematics and science did use some strategies to promote students' general and text comprehension. Thirdly, almost three-fourths of students perceived themselves as able to read texts of all kinds and those from their content areas. This leaves about one-quarter who think they are not as able as they want or need to be. Fourthly, while students rated themselves highly, perspectives from some lecturers indicate that many students' readership was poor due to several factors including poor study skills and lack of time to read outside curricula dictates and demands. Finally, all student participants agreed that it is important to teach their future students reading to learn in the content areas and suggested ways they would go about doing so. Findings from this study have implications for future efforts in mathematics and science teacher preparation; professional development of teacher educators; government policy and curriculum development; and for all stakeholders involved and/or interested in reading education in Kenya. Recommendations for further research provided suggest that this journey ends where all journeys end – at another beginning.

INDEX WORDS: *Comprehension instruction, Content Area Reading Instruction, Content Literacy, Perspectives on Knowledge and Experiences, Pre-service Teacher Education, Reading to Learn, Social Constructivism, Teacher Capacity Building, Qualitative Case Study.*

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DEDICATIONS

In loving memory of mom Lydia Nakhumicha Mahaya, brother in-law Engineer Evans Intabo Inyega, and sister-in-law Caren Kerubo Inyega Orina celebrating with me from yonder. I hope you are proud of my accomplishments.

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CHAPTER 1

INTRODUCTION

Background

This study was undertaken at a teachers college in Kenya (hereafter referred to as 'Elimu College). Elimu College was established in May 1965 by the government of Sweden. It opened its doors to the first students in 1966. Today, it offers a three-year program that prepares pre-service teachers to teach mathematics, physics, chemistry, biology, computer science, and technical subjects [woodwork or metalwork]. Physical education is offered as a third teaching subject. Students also study professional/education courses (educational foundations, psychology, educational administration, curriculum studies, and history of education) concurrently. In addition, all students take environmental science, library science, and English and communication skills courses as "support" subjects. In their third year, pre-service teachers undertake student teaching, commonly referred to as teaching practice (TP), for two consecutive terms (each term is about three months) between May and November. Upon graduation, students are awarded a Diploma in Science Education certificate. The government is responsible for employing and deploying these teachers to any secondary school in the country. The graduates are expected to translate into practice the understanding that **"Science Builds a Nation."**

Kenya has a centralized education system administered by the Ministry of Education, Science and Technology (MOEST), and whose chief accounting officer is the permanent secretary. The education secretary, a professional, heads the education administration division while the quality assurance and standards division, which establishes and maintains educational

standards, is headed by a director. MOEST, through the Kenya Institute of Education (KIE) - the national curriculum developer, provides the national curriculum to be implemented in all public institutions including Elimu College. This curriculum is expected to be a thoroughly researched and prepared document that reflects the current educational needs at all levels of the education system and outlines ways teachers must be prepared to meet those needs (Shiundu & Omulando, 1992). The quality assurance and educational standards division is responsible for, among other things, implementing and monitoring professional teacher development programs at all levels of the education system in Kenya. Lecturers at Elimu College were originally prepared to be high school teachers and, more often than not, many have taught high school before redeployment to Elimu College.

Statement of the Problem

Prior to coming to study reading education at The University of Georgia, I had been a lecturer in Elimu College's English and Communication Skills department since 1998. As a lecturer, I had noted the low morale and lack of interest among students towards English and communication skills, a required course. Many students informally questioned the usefulness of taking "English" when they were being prepared to be high school maths and science teachers upon graduation. These sentiments seemed, to me, counter to the primacy of the English language to a teaching career in Kenya. English is the language of instruction in all schools starting from class/grade three and any teacher-to-be is expected to be competent in English in order to be an effective instructor (Muthwii, 2002).

Student perceptions have important pedagogical implications (Anderson, 1984; O'Brien & Stewart, 1990). They have an effect on learning outcomes and whether or not they include literacy instruction [or incorporate comprehension strategies] in their own practice (Lester,

1998). O'Brien and Stewart (1990) and Fisher and Ivey (2005) contend that resistance toward teaching reading and writing is a hallmark of pre-service teacher attitudes in content area literacy courses at the beginning of the semester and often continues through completion of the course and into the student's teaching career. In educational practice, many mathematics and science teachers in the United States, for instance, often say that they feel the least prepared to teach students how to read to learn in subject areas (Marcon, 1995). Resistance perpetuates generations of new teachers who have no practical experiences with content literacy methods and thus see little use for such methods in their future instruction (Lesley, 2004/2005).

Secondly and equally important, a number of lecturers from "core subject" departments at Elimu College had also informally [and on numerous occasions] stated that English and Communication Skills department "was not doing enough" to help students improve their verbal and written communication skills and that poor communication skills affected student achievement in maths and science. My experiences teaching and assessing comprehension of many students corroborate and bear out lecturers' observations and assertions concerning students' deplorable achievement overall due, in part, to lack of reading with understanding. In a nutshell, there is a binary between core subjects on the one hand, and support subjects on the other. Students are resisting instruction from their English and communication skills lecturers; content area lecturers are assuming teaching reading to learn is a preserve of the English and Communication Skills department; and the English department expects, but does not receive, help from content area lecturers in teaching students to read to learn. What remained unresolved is how the binary can be bridged for improved teacher preparation at Elimu College. In other words, there should be a clear-cut definition of whose responsibility is it to support students' reading development in general and reading to learn in the content areas in particular. How all

lecturers could be involved in content literacy seemed critical - hence my decision to undertake this study.

Another equally interesting criticism leveled against the English and Communication Skills department was the choice of passages used for comprehension instruction and testing. One complaint that stands out for me is that these passages were not “authentic” to teaching maths and science because they did not reflect content from those subjects. Moreover, some lecturers had asserted (informally) that what students did during comprehension instruction was more mechanical and of no immediate or future relevance to them. These sentiments seemed paradoxical given that subject-neutral passages were originally proposed so as not to bias or disadvantage certain students over others. In other words, there was this informal rule that passages used for assessing comprehension should not be drawn exclusively from, for example, maths or chemistry or physics. That said, lecturers in the English and Communication Skills department still have the prerogative to choose what passage(s) to use in their classroom for practice exercises hence the need to inquire into their perspectives on their experiences in comprehension instruction.

Many pre-service teachers enter Elimu College soon after graduating from high school. It is often assumed that they would have acquired comprehension and reading to learn skills and strategies by the end of primary school and come to college prepared to read to learn. Such an assumption is likely to negatively impact the depth of comprehension instruction offered. As a lecturer I remember merely reminding students about comprehension strategies or just glossing over them. Comprehension instruction for me consisted of a regular diet of reading passages, discussing important vocabulary, and answering comprehension questions. Many post-reading activities included summarization or writing of essays that extended important information

discussed in the passages. Whereas these are essential components of reading comprehension instruction, I do not think I made an explicit link between what were doing in my classroom and students' other subject areas. Durkin (1978/1979) posits that explicit instruction and modeling, and not just mentioning of strategies, is more beneficial to students in comprehension instruction (see also National Reading Panel, 2000). Reinking, Mealey, & Ridgeway (1993) address the issue of teaching pre-service students how to use literacy strategies, rather than merely familiarizing or introducing them. These researchers contend that pre-service teachers need to be taught how selection of particular strategies in relation to certain teaching conditions can positively impact learning.

As I embarked on my doctoral studies at the University of Georgia and began to learn more about reading to learn in the content areas, I indulged in self-inquiry and also wondered how other English and Communication Skills lecturers at Elimu College conducted their comprehension instruction. I speculated also that many content courses still depend heavily on textbooks but with little instruction on how to use those resources effectively. Research in the United States reveals that pre-service teachers often lack the skills to read to learn from content area textbooks because they cannot orchestrate the skills and strategies needed for independent learning. Many teachers are not adequately prepared, by either their prior teaching experiences or professional development, to fulfill the critical role of helping their students become strategic readers and writers (Strickland, 2000). With regard to Kenya, Inyega (2005) claimed that "many pre-service teacher education programs offer few opportunities that will help teachers develop connected conceptual understandings of subject content matters that they are expected to teach" (p. 28). Inyega suggested that "continuous research on school science teaching and learning,

based on constructivist theories, is required to inform construction and development of scientific knowledge by students in different contexts" (p. 26).

As knowledge of the processes involved in reading and writing develops, one might think that classroom teachers have revolutionalized the way they teach students to read to learn. However, research in Western countries indicates that comprehension instruction of any sort is much less frequent than it needs to be and agreement about just what can be done to best foster students' comprehension is far from complete (Clark & Graves, 2005). It is true also that many teachers in the United States have only a superficial understanding of ideas behind words such as *metacognition*, *meaning making*, and *strategic learning* and even less knowledge of how to put the ideas into classroom practice (Mehigan, 2005). Mehigan asserts further that many teachers continue to use the same old strategies – even when the strategies fail to increase student performance. Some of them cling to a "prescribed" strategy without knowing how to adapt, modify, and combine it [strategy] in response to students' understandings (Duffy, 1983). When teachers do find a particular strategy to be effective, they may not consider applying it to a variety of other learning situations. Based on this knowledge, I assumed lecturers at Elimu College were facing similar challenges as teachers in the United States, more so given English is a second language, hence the interest in this study.

What we need to read outside of school also underscores the importance of knowing how to read and use informational materials. Recent research studies on reading habits of adults reflect the shift away from fiction to informational reading and nonfiction sources (Smith, 2000). People read newspapers and magazines to find out about the world around them and their favorite activities. They browse the World Wide Web to gain in-depth information and alternative viewpoints. People read self-help books and books on health and fitness because they

want to improve their health and lifestyle. They read spiritual and religious books to reflect on their beliefs and deepen their quality of living (Temple, Ogle, Crawford, & Freppon, 2005). Kenya as a society is experiencing this shift from a nation of fiction readers to a people who read a preponderance of informational texts, especially among the youth (Inyega & Mbugua, 2005). It is unfortunate however that young people's literacy skills are not keeping pace with societal demands of living in an information age that changes rapidly and shows no sign of slowing (Heydon, Hibbert, & Iannacci, 2004/2005; Temple et al., 2005). Students deserve instruction that builds both the skill and desire to read increasingly complex materials" (Moore, Bean, Birdyshaw, & Rycik, 1999, p. 5) and to critically reflect upon the continuous flow of information. To read critically, one must go beyond asking, "What does this text (including visuals) mean?" to asking, "How does it come to have a particular meaning (and not some other)?" How teachers pedagogically address those demands is not immediately apparent or easily agreed upon.

Preparing teachers to teach their students to be strategic readers and writers is one of the greatest challenges facing teacher educators today (Duffy, 1983; Mehigan, 2005; Strickland, 2000). This study was conceptualized based on the assumption that teacher educators at Elimu College were also grappling with this challenge. What remained unknown was exactly how this played out in the institution since no previous research had examined comprehension instruction for pre-service teachers. To address the complexity of literacy, therefore, teacher education has perhaps never needed to be more dynamic and sophisticated (Heydon et al., 2004/2005). The emphasis in this study on the professional decision-maker was thus in accordance with a larger literacy context.

Purpose of the Study

Given my experience as a lecturer and what I had learned about comprehension instruction at the University of Georgia (UGA), I recognized the need to inquire into how pre-service teachers at Elimu College are helped to comprehend required readings and prepared to teach their future students how to comprehend texts they will use for teaching upon graduation. It was unclear what English and Communication Skills lecturers' perspectives on their knowledge and practices were towards preparing pre-service teachers to comprehend required readings, including those in maths and science content areas. Neither had any study inquired into and established whether or not mathematics and science lecturers included comprehension instruction in teaching their subjects. Additionally, no study had determined whether or not pre-service teachers at Elimu College transferred reading comprehension skills and strategies to their subject areas or if indeed they saw the connection between comprehension instruction and reading to learn in the content areas and their future career as teachers. To my knowledge also, no study had used qualitative approaches to understand lecturer and student views of their comprehension instruction experiences at Elimu College when given an opportunity to comment on them unrestricted by forced choice questionnaires.

I decided to conduct a qualitative case study research of reading across the disciplines to gain an in-depth understanding of how pre-service teachers are prepared to comprehend required readings and to teach their future students to do the same. Adopting a multi-method approach, through questionnaires, interviews, and observations of teaching with lecturers and pre-service teachers, I collected data to address these research questions:

1. What are English Language and Communication Skills lecturers' perspectives on their knowledge and practices with regard to:

(a) General comprehension instruction, and

(b) Content area comprehension instruction

2. What are content area lecturers' perspectives on their knowledge and practices with regard to content area comprehension instruction?

3. What are pre-service teachers' perspectives on:

(a) comprehension in relation to general reading

(b) comprehension in relation to their subject areas and;

(c) Their preparedness for content area literacy instruction upon graduation?

Significance of the Study

At the time of the study, there was no documentation of Elimu College lecturer's perspectives on their knowledge and teaching practices regarding reading to learn in the content areas. There were also no documents that include pre-service teacher voices in relation to reading to learn in mathematics and science content areas, and their preparedness to teach secondary school students reading to learn from the texts upon their graduation. This study is likely to be the first to document lecturers' accounts of their classroom practices as well as student accounts regarding reading to learn in mathematics and science. It is likely also to be the first to use qualitative research strategies and methodology to report findings on reading to learn at Elimu college.

The study will also be part of available literature on pre-service mathematics and science tutors' classroom practices on communication skills in one of Kenya's pre-service teacher colleges. Anyone working and/or interested in the nexus between literacy and content area subjects in less industrialized countries will find this study informative.

This study provided a systematic inquiry into how pre-service teachers are prepared to comprehend required readings and how to teach students reading to learn in the mathematics and science areas. Pre-service mathematics and science teachers need content area reading strategies to prepare students to learn from expository text. Through a trickle-down effect, graduates from Elimu College are likely to make more informed choices concerning reading to learn in the content areas and be more responsive to the changing times.

Overall, the study contributes to efforts aimed at improving reading in mathematics and science education and reading education in Kenya, an area still in its infancy stages in many respects in Kenya.

Constraints and Assumptions of the Study

The present study came about in recognition of the fact that readers require various and specific strategies when they study particular subject areas and/or read for different purposes. I assumed that content area reading instruction is/can be designed to deliver those strategies. I assumed also that all lecturers at Elimu College were incorporating [some form of] comprehension instruction in their teaching although the extent to which they did that remained unknown. I assumed that if educators implement sound comprehension instruction, it can facilitate pre-service teachers' understanding of their content area subjects. Gains could overflow to other areas of their lives and extend also to content area comprehension instruction once the pre-service teachers graduate and take up teaching jobs in Kenya's secondary schools.

My research design, as well as family, financial, and time constraints led me to collect data for only two months to answer my research questions. A more comprehensive understanding of Elimu College, and the politics thereof, might be enabled through research designs that are ethnographic and that include a larger number of participants. Successful data

collection, analysis, interpretation, and final write-up also require support structures (e.g., finance, time, and peer) to accompany the effort. My research may have been thwarted, at the data collection level, by my limited financial resources. From my experience, projects that are funded might probably yield different outcomes. Fortunately for me, peer support and de-briefing provided the much-needed expert advisement to steer this enterprise to fruition at the data analysis, interpretation, and write-up levels.

Operational Definitions of Terms

Reading: Reading is language that calls for interaction and orchestration of four cueing systems: Graphophonic/phonological; syntactic/structural; semantic; and pragmatic/social/ cultural factors (Goodman, 1994). The process is transactional because there can be no reader without text and no text without a reader (Rosenblatt, 1994). The purpose of reading is to engage in meaningful communication experiences.

Reading comprehension: Refers to the act of thinking and constructing meaning before, during, and after reading by integrating information from the author with the reader's background knowledge (Snider, 1989; Irwin, 1991; Pearson & Duke, 2002).

Comprehension strategies: What a reader does before, during, and after the reading process to foster reading comprehension. The ability to activate one's prior knowledge about a topic, self-question, identify main ideas and supporting details, paraphrase, and summarize are examples of critical skills of effective comprehension development (Pressley et al., 1995).

Content area subjects: This phrase refers to subjects such as mathematics, chemistry, physics, woodwork, and biology. I referred to content area subjects also as “core subjects” in comparison with English and communication skills, which is a “support subject”.

Content literacy: The ability to use reading and writing for the acquisition of new content in a given discipline (Alvermann & Phelps, 2002). Such ability includes three principal cognitive components: (1) general literacy skills, (2) prior knowledge of content, and (3) content-specific literacy skills (such as graph reading in maths). The first two of these – overall literacy ability and content knowledge – are the two factors with the greatest influence on learning through text (Perfetti, 2003).

Content-area comprehension instruction: The primary mission of this instruction is to develop students' content literacy so that students can cope with the special reading materials and comprehension requirements encountered during the study of school subjects (Moore, Readence, & Rickelman, 1983). This is the same as equipping students with reading to learn strategies.

Social constructivism: Constructivism, reduced to its basic elements, is simply a learning or meaning-making theory. The development of constructivism has transitioned from a Piagetian individual development (constructivism) to the recognition of cognitive development within a social setting. The focus is on the individual as willful and deliberate in knowledge construction and meaning making as well as the social context(s) within which the individual operates. Social constructivism can thus best be described as a process of synthesis where one acknowledges that understanding is personally constructed but modified by the social context in which learning takes place (see Crotty (1998) and Hruby (2001) for a distinction between social constructi*v*ism and social constructionism).

Qualitative case study: An intensive, holistic description and analysis of a single entity, phenomenon, or social unit. Case studies are particularistic, descriptive, and heuristic and rely heavily on inductive reasoning in handling multiple data sources (Merriam, 1988).

CHAPTER 2

THEORETICAL CONSIDERATIONS

The theoretical framework with which we enter the field is one of the key influences in what we observe, record (Dewalt & Dewalt, 2001; Janesick, 2000), and report (Ezzy, 2002). This qualitative case study research (Stake, 1994; Merriam, 1988) of reading across the disciplines was guided by social constructivist (Bruner, 1986; Vygotsky, 1978) conceptual framework although I bore in mind that a theoretical perspective may emerge or become clarified in the process of fieldwork itself (Glesne, 1998; Preissle & Grant, 2003). To discuss social constructivism and demonstrate its relevance to my research, I include a description of the research setting.

The Research Setting

Elimu College is a content specialty institution in Kenya that prepares high school mathematics and science teachers. It comprises of people drawn from all parts of the country. These people bring with them knowledge and experiences from differing ethnicities, cultures, languages, and geographical regions. It is structured in such a way that there are many opportunities for the whole community to interact, formally and informally, for the better part of the school year - about nine months. For example, all students stay in hostels on the compound although they go to their homes approximately every three months – at the end of each term. There are three terms in a year. Many staff, both teaching and non-teaching, are housed on the compound as well. Every Friday during the term Elimu College holds an assembly at 7:45 -8:00 A.M. where all students, lecturers, and key non-teaching staff (such as the security manager, head cateress, finance officer, and chairperson of the non-teaching committee) meet in a hall.

Important information is passed on and any announcements made during the assembly. In addition notice boards, placed in strategic positions within the compound, are other avenues of information dissemination. All lecturers have at least two staff meetings during each term. Key non-teaching staff is always in attendance.

At the beginning of each year, there is usually a meeting referred to as “pep-talk” which is an open forum where lecturers present papers and reports on a wide range of topics. At the end of each term lecturers meet again to discuss students’ academic achievement in what is commonly known as class conferences. Before students go for teaching practice (or student teaching), the second term (between May and August) is used for preparing them for the field through what is referred to as microteaching. When students are on teaching practice – between September and December, lecturers meet every Friday to discuss any issues related to student placement in the field. At the end of the teaching practice and upon receipt of academic evaluation from external examiners, lecturers meet in what is known as teaching practice postmortem meeting to discuss issues related to student teaching. Different departments hold regular meetings convened at their own discretion.

There are other key meetings at administrative level such as heads of departments’ meeting, meetings between senior teaching and non-teaching administrators, those between the Dean of Students’ office and students, and so on. Students have many opportunities to meet both in and out of class. For example, they go to same classes with other students taking the same subject combinations, such as biology/chemistry or maths/physics combinations. Students meet after class hours at 4:30 P.M. for co-curricular activities and sports. The compound has a big track, swimming pool, and tennis court for anyone wishing to engage in sports. Each term students participate in sports and athletics competitions. For example, each May/June (during the

second term) they have Intersolidarity sports and games. Lecturers are expected to be in attendance and to help in officiating some of the events. Students also meet during weekends to observe their religious beliefs and practices. Students are provided all meals in a common dining room. Adjacent to the dining room is the entertainment room where students watch TV or play table tennis. Last but not least, Elimu College has four shops, which stock basic household items. More recently, a big shopping complex has been set up across the road from the compound. In a nutshell, Elimu College would be considered a unique community with has developed its own sub-culture (Patton, 1990) and social dynamics that govern group interaction.

Social Constructivism

Social constructivism views all knowledge and therefore all meaningful reality as such, as contingent upon human practices, being constructed in and out of interaction between human beings and their surroundings (Bruner, 1986; Vygotsky, 1978), and developed and transmitted within an essentially social context (Schwandt, 1994; Spivey, 1997). In conducting my research, it was imperative for me to take note of the social context within which I was working and the interactions therein given the connection between social interaction and knowledge construction. The environment is important in interpreting a person's lived experiences (Glesne, 1998; Schwandt, 1994; Spivey, 1997). Dewey (1938) states that lived experiences do not occur in a vacuum. An experience is always a transaction (Rosenblatt, 1994) between an individual and his/her environment. The environment, according to Dewey, is "whatever conditions interact with personal needs, desires, purposes, and capacities to create the experience that is had" (p. 44). During data collection, I tuned in to any 'conditions' that influenced how participants viewed my topic of interest: comprehension and comprehension instruction. I bore in mind that knowledge construction and the goings-on at Elimu College extended beyond its walls, and

compound for that matter, to include events at the national and even international level. Any educational institution is a microcosm of society and one would be remiss not to have those factors in mind when researching a particular setting.

Another emphasis in social constructivism is not in meaning making of the individual, but rather the collective generation of meaning as shaped by language and other social processes (Crotty, 1998; Schwandt, 1994). So one tool I was conscious of during the whole research process was that of language. Language is the tool for constructing social reality (Tompkins, 2003); language being closely related to a people's culture. It "plays a role far more constitutive of knowledge within social constructivism than in individual constructivism (NSSE, 2000, p. 66). The main languages used at Elimu College are Kiswahili and English (people speaking the same language will often be heard conversing in those languages). During data collection, I oscillated between Kiswahili and English while conversing with the participants. Occasionally I threw in a word in another language but taking care in general not to be culturally inappropriate. In short, I was interested in both literal and implied meanings of words, and sensitive to connotations and nuances of words that participants used.

Social constructivism can be used to understand reading and the reading process. When people read or interact with texts, they often draw from what Rosenblatt (1978) refers to as linguistic experiential reservoirs in making meaning from texts. In other words, individuals bring past experiences and beliefs, as well as their cultural histories and worldviews, into the process of learning; all of these influence how [they] interact with and interpret [their] encounters with new ideas and events (Lambert et al, 1995). They do not acquire knowledge by internalizing it directly from the outside but by constructing it from the inside, in interaction with the environment (Bakhtin, 1981; Tompkins, 2003). According to Vygotsky (1962), whose theory is

guided by social constructivist tenets (Evans, 2002), higher mental functions in the individual have their origin in social life and that in order to understand the nature and path of development, it is essential to examine the social environment in which development occurs (Emerson, Fretz, & Shaw, 1995; Evans, 2002; Goodall, 2000). While conducting the research, I kept at the forefront of my thinking these questions: (1) in general, how is knowledge constructed and how might it impact participants' views about comprehension and comprehension instruction? (2) If the environment within which knowledge construction occurs is as important as the constructors of that knowledge, what 'environmental' factors within Elimu College might affect comprehension and comprehension instruction? (3) What prior knowledge might participants bring to the research? (4) What about the language(s) used? In short, while conversing with participants about comprehension and comprehension instruction, I looked for and considered instances that would illuminate how they construct knowledge regarding the subject.

Vacca et al (2003) discuss how teachers come to know about reading and learning to read. This happens at three levels: Constructing personal knowledge, constructing practical knowledge, and constructing professional knowledge and expertise. Personal knowledge grows out of a teacher's experience as a reader and writer. By engaging in reading and writing, one comes to know in a very personal way what readers and writers do and the contributions that reading and writing makes to one's life. Practical knowledge grows out of experiences both in and out of the classroom. Richardson (1996) posits that one's practical knowledge about teaching occurs through personal experiences, experiences with schooling and instruction, or formal experiences in one's education career. It also grows with one's experience in teaching. This practical knowledge is tacit, integrated, action-oriented, person and context bound, and belief based (vanDriel, Beijaard, & Verloop, 2001). It is characterized by the values and attitudes that

one constructs about readers and writers, texts, reading and writing processes, learning to read and write, and the role of the teacher in the development of children's literate behavior. The construction of practical knowledge extends beyond classroom situations and includes interactions within the cultural contexts of school and community. For example, a teacher's beliefs about reading and learning to read may be affected by the beliefs of colleagues, administrators, school board policies, curriculum guidelines, and standards for teaching reading. Professional knowledge is acquired from ongoing study of the practice of teaching. What teacher education programs do best is help pre-service and in-service teachers build a knowledge base that is grounded in current theory, research, and practice throughout their professional development, the books and journals they read, the courses and workshops they take contribute to the vision they have of reading and learning to read. Teachers construct theories of reading and learning to read based on their ways of knowing, which influences the way they teach, including the ways they plan, use and select texts, interact with learners, and assess literate activity. In short, I understood that participants would draw from their knowledge (personal, practical and professional) that Vacca et al (2003) discuss when exploring my research topic.

I bore in mind that sites such as Elimu College are often rife with power differences at different levels, for instance among students or lecturers or non teaching staff, among students and lecturers or among teaching and non-teaching staff or among students and non-teaching staff. Elimu College is bureaucratic in nature with a chain of command where information is passed up and down a chain via networks and structures that have been put in place - such as notice boards or through the various meetings held every term. From my experience teaching there, I would consider it a socially contested site and I state elsewhere in this study about the politics thereof. These issues are outside the scope of my study but they are worth mentioning. In

addition, there is gender imbalance where, for instance, the English Language and Communication Skills department is a Female-Only department (with seven lecturers) while the Physics department has one female compared to six male lecturers. In a nutshell, my main concern in this study was how pre-service teachers are helped to comprehend required readings and prepared to teach their future students reading to learn in the content areas. However, I was not oblivious to the power dynamics that together influence the goings-on of each department at the institution. To be aware of formal and informal loci of power, of the issues that may irritate, and of the history that continues to shape behavior at Elimu College seemed important and might be explored in future research.

Social constructivism proposes that people create their own meaning and understanding, combining what they already know and believe to be true with new experiences with which they are confronted (Richardson, 1997a, 1997b). The theory views knowledge as temporary, developmental, social, and cultural (Fennimore, 1995). I assumed therefore that as people interact with each other at different levels within Elimu College, knowledge (personal, practical, and professional) is created and re-created and that this process is fluid. In this regard, a healthy skepticism is that if I were to conduct the same study within the same setting, I am likely to have different outcomes.

A core belief of constructivism is the need to understand the complex world of lived experience from the point of view of those who live it (Schwandt, 1994). How people create their experiences, how they determine what is known, seen, understood, and valued in any experience, is also influenced by their ***ways*** of knowing, seeing, thinking, and valuing (Glesne, 1998; Spivey, 1997; Wolcott, 1999). Whatever personal sense-making processes and value systems people bring to the research setting influences and probably determines which aspects

are most salient to them and provide the means for interpreting the research experience (Evans, 2002; Hammersley & Atkinson, 1995). My research study was thus grounded as much as possible in participants' perspectives of their knowledge and experiences regarding comprehension and comprehension instruction and viewed from their standpoints.

Conclusion

From a social constructivist view, classrooms are seen as complex, hegemonic contexts where participants negotiate multiple discourses with varying degrees of success (Hinchman & Moje, 1998). Based on this knowledge, I anticipated dealing with multiple social realities that are complex and indivisible into discrete variables. I regarded my research task as coming to understand and interpret how the various participants in a social setting construct the world around them (Glesne, 1998) and specifically what their perspectives were on comprehension and comprehension instruction. To capture the nuance and complexity of the social situation and make my interpretations, I gained access to multiple perspectives of participants by embracing multiple techniques (Janesick, 2000; Preissle & Grant, 2003) or a wider range of ways of looking through the qualitative case study research stance. Wolcott (1999) talks of ethnography as a way of *looking*, literally and metaphorically, "to encompass *all* the ways one may direct attention while in the field" (p.43). Wolcott also uses the term *experiencing* that includes "information that comes through all the senses" (p. 46). While in the field, I learned to experience what I saw and heard and, perhaps more importantly, what was not said: the subtleties of body language, to the organization of the cultural space. I attended to the social construction of individual understandings through an interactive approach to inquiry called "the reflexive elaborations of the event" (Bakhtin, 1981; Evans, 2002 p.50; Schwandt, 1994, p. 128). In this process, the researcher opens an event to inspection and engages in continuous reflexivity (Ezzy, 2002;

Hammersley & Atkinson, 1995) through dialogue in an effort to "expand and enrich the vocabulary of understanding" (Gergen & Gergen, 1991, p. 88). This type of inquiry was appropriate for me to get at participants' self-reflection about their teaching experiences and perceptions related to comprehension and comprehension instruction. Social constructivist theoretical lenses were helpful in heightening my awareness about the research setting's social and political structure and language use. This shaped my conduct with sure-footedness that such knowledge affords.

CHAPTER 3

LITERATURE REVIEW

In this chapter, I provide a brief history of education in Kenya to contextualize Elimu College. I then review literature on reading education, teacher preparation, and professional development to address the question, "What does the research tell us about content literacy and content area texts, teacher educators, and pre-service teachers?"

Education in Kenya

Before Independence in 1963

Kenya became a British Colony in 1920, after being run as an East African Protectorate by British East Africa Company since 1890. Western education is a product of colonialism and missionary work that started around the year 1846 (Maina, 2003; Sifuna, 1986; Shiundu & Omulando, 1992). The earliest missionaries credited with the establishment of formal education in Kenya are Johan Krapf and Johan Rebman both of the Christian Missionary Society (CMS) of the Church of England. During the colonial period, Kenya had a racially segregated and unequal educational system - Whites, Asians, and Africans were educated separately (Eshiwani, 1993; Maina, 2003; Mutua, 1975; Sheffield, 1973; Shiundu & Omulando, 1992). Each of the races received education designed for the role that race was to assume in the then British colony. The European (White) children received the kind of education that would make them rulers and decision makers for everyone in Kenya (Stabler, 1969). The Asians, who were brought in by the colonial government to build the Kenya-Uganda railway (1890-1901) remained in the country as traders and farmers. The Asians were encouraged to settle in Kenya to provide services to the

colonial government directly under Europeans. Their education was mainly academic, and would help them fulfill managerial positions as well as in trade and commerce (Sheldon, 1967). The African Kenyans were relegated to the bottom rank. They were to be provided with the kind of education that would make them remain subservient to the colonial government (Maina, 2003). This education placed more emphasis on technical training and on basic arithmetic, reading, writing (famously referred to as the 3Rs), and catechism (Thomson, 2002) to produce teachers for their own schools and clerks for the colonial administration (Stabler, 1969).

In the 1920s colonial education was characterized by confrontation from Kenyans who did not take long to realize the long-term objectives of the racially stratified education (Maina, 2003). By 1925, there were some protests from Kenyans that the education provided was unacceptably inferior and being used as a means to keep them in the lowest rank of society and government. Furthermore, this education belittled their traditional values and aimed at replacing them with Christian beliefs (Sheffield, 1973). Dissatisfaction with the missionary values that defined the curriculum content eventually resulted in new developments in Kenyan education (Shiundu & Omulando, 1992). By 1930, some Kenyans had separated from the mainstream education and formed their own independent schools (Maina, 2003). The independent schools allowed traditional activities that were previously forbidden such as female circumcision and polygamy as well as providing academic skills to their youth. According to Sheffield (1973), “Every effort was made to build education upon the new African attitudes of independent thought, (p. 28).” To sum up, the legacy of colonial education in Kenya, including mathematics and science education, was one of conflict, one that alienated people from their culture and created foreigners in their own country. Much of what was learned and experienced was a contradiction to the philosophy of indigenous Kenyan society (Maina, 2003). “Neither the

missionaries nor the colonial administration made any real attempts to link African education to African problems and African heritage (Shiundu & Omulando, 1992, p. 15). By the 1930's the colonial government had started a few African Government secondary schools to cater for the sons of colonial chiefs and their subjects (Mutua, 1975; Shiundu & Omulando, 1992; Sifuna, 1986). The British also started the University of East Africa at Makerere in Uganda to absorb students from mission schools and the African government schools in the East African region. It is through Makerere University that Kenya started to receive a few Kenyan professional secondary school mathematics and science teachers [graduating with, at least, a diploma].

After Independence in 1963

The Africans' enhanced awareness of the value of a broader education increased at and after independence. Postcolonial African governments were committed to the spread of education and the eradication, or minimization, of the colonial legacy in education. They acted by setting up more new schools and expanding educational facilities for the young and launching adult literacy programs for the old (Alwiny & Schech, 2004; Chakava, 1984; Mutua, 1975).

The socio-economic and political developments at independence in Kenya also saw many expatriate White teachers opting to leave the country for one reason or another and African teachers, despite their inadequate qualifications, leaving the teaching profession to join government or politics. Needless to add, there was a serious shortage of teachers for the then 151 secondary and about 6000 primary schools (Eshiwani, 1993; Shiundu & Omulando, 1992). The new government also faced another problem: Lack of teacher training colleges for secondary school teachers. There were many primary teacher-training institutions that were run by different groups but their curricula.

Faced with a shortage of mathematics and science teachers in high schools [as well as teachers in other subjects], the Kenya Government's most immediate intervention measures were to hire new expatriate teachers (many from European countries such as Britain) willing to serve in Kenya. This was with the promise of better terms of service, especially in sciences, as a short-term measure to address the scarcity of personnel in education. The government also amalgamated many teacher-training colleges and remained with a total of 17. The government then converted an army barrack [a Whites only barrack during the colonial period] at Kahawa Garrison into a teacher training college for secondary school teachers. Elimu College was renamed Kenyatta College, after Kenya's first prime minister and later president of the republic of Kenya, Mr. Jomo Kenyatta (Mutua, 1975; Shiundu & Omulando, 1992; Sifuna, 1986).

The government also entered into bilateral agreements with other countries that were ready to assist in the development of mathematics and science teacher education in Kenya. One of these countries was Sweden. With financial assistance from the Swedish government, the Kenya Government built Elimu College in Nairobi in 1966. Elimu College was to start preparing high school graduates for three years leading to a Secondary Teacher 1 (S1) certificate qualification (Thomson, 2002). Sweden's Uppsala University professors were seconded to Kenya to start and run Elimu College for the first ten years, a period within which Kenyans would have been prepared to take over the running of Elimu College. The S1 (Secondary Grade 1) teachers were the first highly qualified high school mathematics and science teachers to be prepared in independent Kenya.

The Kenya Government also strengthened the teaching of mathematics and science in schools through relevant education policies that focused on expansion of schools, on offering an advanced level of mathematics and science education, and on a higher pay for mathematics and

science teachers compared to their counterparts with similar academic and professional qualifications (Inyega, 2005). In Kenya today, high school mathematics and science teachers are prepared in the public universities (Kenyatta, Nairobi, Egerton, Moi, and Maseno) that offer teacher education and in three diploma teacher-training colleges (Elimu College, Kenya Technical Teachers College (KTTC), and Kagumo) that offer mathematics and sciences and other technical subjects. There are also two private universities, run by religious organizations, offering education courses in Kenya. The demand and respect for graduates from Elimu College has continued to grow to date even though Kenya currently has many mathematics and science teachers graduating from the six public and two private universities that offer teacher education (Inyega, 2005; Thomson, 2002).

Kenya's leadership has long recognized the need for both national identity and international participation and has fostered the use of Kiswahili for the former goal and English for the latter. Strategically, this is implemented by making English the language of instruction and Kiswahili a required subject in school (Willis, 1988). Students are expected to learn to read in Kiswahili and English (as well as, implicitly, in their vernacular). Teacher preparation for primary school teachers includes a course on the four basic language skills of: listening, speaking, reading, and writing. Secondary school teacher training does not explicitly emphasize the teaching of reading because it is presumed that by secondary school students have learned to read and reading to learn. This presumption is that less emphasis is placed on content literacy in post-primary institutions (secondary schools and institutions of higher learning) in Kenya (Inyega & Commeyras, in progress) such as Elimu College.

Content Literacy

Reading to Learn from Content Area Texts

Content area texts are any print materials used in the teaching of mathematics, science, history or any other informational school subject. They have been analyzed from the perspective of the demands on a reader needing to learn content. Researchers have criticized content area texts for their incomprehensibility (Chall & Conard, 1991). This incomprehensibility results from stilted writing (Britton, 1987), or covering too much information in too little depth (Tyson-Bernstein & Woodward, 1989), and poor instructional design (Armbruster & Gudbrandsen, 1986). A study that involved training teachers to analyze textbooks (Education Development Center & RMC Research, 1989), for instance revealed, among other things, that teacher editions lacked important information about prior knowledge, student misconceptions, text structures, comprehension-monitoring techniques, study strategies, chapter mapping, and critical thinking. As a result, critics argue that today's textbooks do an inadequate job of helping teachers learn ways to motivate students to read more about a topic and do little to influence the development of comprehension and higher-order thinking skills.

Mathematics and Science Texts

Of all the content-area texts that primary and secondary school students read, mathematics and science are arguably the most difficult (Barton, Heidemann, & Jordan, 2002). The conceptual density of math and science materials is one of the major reasons for students' difficulties (Barton et al., 2002). Schell (2002) maintains that mathematics texts can contain more concepts per line, sentence, and paragraph than any other kinds of texts. Science texts can be equally concept laden. According to Holliday (1991), a high school chemistry text can include 3,000 new vocabulary terms – more than students are expected to learn in a foreign language

class. In addition, reading mathematics and science requires special reading skills – skills that students may not have used in other content areas. For example, in addition to comprehending text passages, students must be able to decode and comprehend scores of scientific and mathematical signs, symbols, and graphics. Students also need to read and interpret information presented in unfamiliar ways – not only left to right, but also right to left (number lines), top to bottom (tables), and even diagonally (graphs). Further, students must learn how to read text that is organized differently than that in other core subjects. Draper (2002) believes that, as in science, students cannot be fully prepared in mathematics unless they are skilled in understanding the text. She contends that literacy activities can engage students and teachers in conversation around mathematical texts. To keep mathematics within the reach of all students, teachers must help their students make meaning from text. More recent research shows that content-area literacy teachers often use a wide variety of texts (Wade & Moje, 2000); these texts consist of textbooks, study guides, and worksheets that teachers use to enhance classroom lectures. This inquiry challenges the narrow notion that content area teachers rely on traditional forms of texts as the primary source of information in the classroom. Also, the historical notion of content teachers relying on single texts (textbooks) has shifted, partially driven by sociocultural dimensions and influence by technology innovations (O'Brien, 2003). From personal experience, content texts at Elimu College include notes written by lecturers for students, handouts, and laboratory manuals.

Difficulty with Content Area Texts

Many students are much less fluent and experienced with reading and writing in genres that involve persuasion, information, explanation, description, and analysis (Read, 2001). Poor performance in reading and writing expository texts might be due to a lack of experience with

non-narrative texts in the early grades. In addition, poor comprehenders may not be able to monitor their own reading and take steps to improve comprehension. However, these students do come to realize that they are not successful academically, and they may experience low self-esteem, lack of motivation and apathy toward school just as the rigors of "reading to learn" from content areas are demanding more of them (Ciborowski, 1995). Stanovich (1986) has pointed out that struggling readers try to avoid reading, either in academic or recreational situations. When required to read in school, they are not motivated to try very hard. On the other hand, students who use textbooks well (a) learn how to think about their prior knowledge when reading new ideas in their textbooks; (b) learn how to better monitor their comprehension (and confusion); (c) gradually acquire a repertoire of reading, thinking, and study strategies, and master the ones that work best; (d) become confident enough to create and test their own strategies; and (e) are able to make connections with what they learn from their books to their personal world and community (Ciborowski, 1995).

Learning from reading is an active, ongoing, and recursive process that can be described by what we do before, during, and after engagement with a text (Pressley et al., 1995; Robb, 2003; Tierney & Readence, 2005). Temple et al (2005) refers to this process as the ABCs of reading to learn which begins by *anticipating* what one wants and needs to learn. Then there is the *building of knowledge* as the text is read and the reader engages with the authors. Finally, there is the *consolidation* of ideas with what was previously known, sometimes modifying those ideas and sometimes expanding on them. Students can benefit by having reading instruction incorporated into their content area classes (Anders & Guzzetti, 1996). This is because the reading process parallels the process of scientific inquiry: Both areas require skills in questioning and setting a purpose, analyzing and drawing conclusions, and communicating results (Yore,

Craig, & Maguire, 1995). Researchers and teacher educators have realized that middle and high school students will possess a wide range of reading abilities that could potentially affect how well they are able to read and make meaning from their content area texts (Ivey, 1999). Numerous studies have found that students of all abilities levels can improve their comprehension of content area texts when they are provided with reading instruction in the content areas (Lederer, 2000).

Content Literacy, Teacher Preparation and Professional Development

History of Content Literacy

The theme that all teachers are responsible for their students' reading performance can be traced in workshops, reports, conferences, and educational literature since 1925 (Irwin, Buehl, & Klemp, 2003). The idea that "each teacher who makes reading assignments is responsible to the direction and supervision of the reading and study activities that are involved" was first published by the National Committee on Reading (National Society for the Study of Education, 1925, p. 71). During the 1970s "teaching reading in the content areas" became a theme of staff development initiatives and the foundation of reading programs that targeted the development of the literacy needs of all adolescent learners (Irwin, et al., 2003). Content area teachers became familiar with the slogan "Every teacher a teacher of reading." Staff development programs began to include presentations on ideas for helping students successfully read and learn from their content areas. Reading teachers and specialists with specific training in secondary level literacy concerns began working in a number of middle and high schools across the United States. Yet despite this consistent reference to the need to teach content area reading, relatively little action has been taken over the years (Barry, 1994; Draper, Smith, Hall, and Siebert, 2005). Irwin et al.

(2003) note that when teaching reading is everyone's responsibility, no one seems to actually do it.

It has been noted in the literature also that there are few reading specialists to facilitate talk about learning, reading, and writing (Vacca, 1998).The lack of reading specialist services has consigned sole responsibility for literacy development of their students to content teachers. The task most often generally falls to the English teachers (Barry, 1992) who have traditionally resisted this sole responsibility and feel unprepared and unqualified to teach reading, especially for seriously underachieving students (Irwin et al., 2003). English teachers predominately concentrate on fictional literature and teach literary genres such as novels, short stories, and poetry. They are not trained to teach strategies for learning from informational texts, such as those used in social studies, maths, science, and other content classrooms. This situation results in what Draper et al (2005) call dualism – with language arts teachers on the one hand and content area teachers on the other - and students caught in the middle and in essence missing out.

From my experience as a teacher educator in Kenya, I am aware teacher preparation courses for secondary school teachers have not typically focused on teaching reading to learn from content areas, but rather on content in specific subjects. As a secondary school teacher of English and literature, I was prepared to teach grammar and literature without preparation to teach reading to learn from the content areas. To my knowledge, Kenya does not have a policy to teach reading to learn nor are there programs in teacher education to prepare content area teachers to incorporate literacy instruction in their subject areas. The performance standards in Kenya (referred to as curricular goals and objectives) do mention the need to develop the scientific and technological literacy of all secondary school students (Inyega, 2005) without stipulating whose role it is to do that.

Reading to learn from content areas poses many challenges that require effective use of varied and more innovative strategies for reading achievement. It is disconcerting however that teaching strategies used in many classrooms in the United States, for instance, are essentially the same today as they were two generations ago (National Commission on Mathematics and Science Teaching for the 21st Century, 2000). Promising classroom strategies such as graphic organizers, anticipation guides, vocabulary mapping, and discussion webs are still unfamiliar practices to many content teachers (Buehl, 1998/1999). It is not surprising that recent research reports document a need to restructure science teacher education and change how science is presented in the curriculum, taught in schools, and assessed (National Commission on Mathematics and Science Teaching for the 21st Century, 2000). These observations concur with those in Inyega's (2005) study in which he stated that increasing scientific literacy and student achievement in science requires a rethinking of how maths and science is taught. Such efforts require a fresh look at teacher education in institutions of higher learning.

There seems to be a paucity of research by teacher educators on pre-service teachers and reading to learn from content areas. However, a few studies documenting teacher educator views and exploring relationships between the perceptions of pre-service teachers and teacher educators in ways that informed and established the research need of my study concerning pre-service teacher education and reading to learn from content areas. In general, this research could be classified into six categories. Research on: (1) pre-service teachers; (2) in-service teachers; (3) teacher educators; (4) both pre-service teachers and teacher educators; (5) both in-service teachers and teacher educators; and (6) both pre-service and in-service teachers and teacher educators.

Content Literacy and Teacher Educators

While one obvious goal of reading, regardless of subject matter, is to gain meaning from text, the ways and purposes for this can differ across content areas. For example, in science students may read texts in order to learn about specific scientific facts, laws, and principles. However, not everything written in a science text is intended to be taken as a fact or absolute. Therefore, students need to learn to identify and understand the difference between facts and theories and the role they play in the field of science (Norris & Phillips, 2003). For these things to occur, teachers need to be proficient in their subject matter as well as understand how to help their students develop the sophisticated skills needed to read texts in ways that are specific to their content area(s).

One area of concern in the literature is that researchers and teacher educators may not be helping content area teachers to understand their role as teachers of reading. Wineburg (2001) and Muth (1993) have argued that teacher educators often treat reading in the content areas as a general task and not in ways specific to the subject(s) that their teachers teach. Teachers are not always provided opportunities to think about such things as how and why reading strategies can be applied to the texts they use and how these purposes may change across content areas. This generic treatment of reading and text could potentially lead to teachers not understanding the important nuances of the texts used within their subject matter or the different demands that such texts place on readers (Draper, et al., 2005; Wineburg, 2001).

Draper et al's (2005) study is an example of a study where researchers question whether their own practice as teacher educators and their focus on either content, content methods, or literacy methods served to perpetuate the literacy-content dualism rather than help pre-service and in-service teachers to confront it. In the study, they share experiences, describe their initial

ideas about confronting the literacy-content dualism, and then discuss implications for teacher educators. Draper et al acknowledge they became increasingly aware that their individual focus on either literacy or content instruction was problematic for the teachers with whom they work, and ultimately for the children those teachers serve. Their first conversations of these issues grew out of a writing group in which they all participated. For 3 years they met together at least every other week to share, discuss, and critique their research and writing. As a result of reading and responding to each other's work on various subjects (Roni Jo, content-area literacy; Leigh, science education; Kendra, early childhood literacy; and Dan, mathematics education), their conversations drifted to how their work intersects. In addition to the writing-group discussions, Roni Jo and Dan had worked together to investigate literacy instruction for standards-based mathematics classrooms and Roni Jo, Leigh, and Kendra had collaborated to create teacher development presentations to help elementary science teachers consider how they can integrate literacy and science instruction. These activities resulted in manuscripts, presentation notes, and materials, which served as artifacts that document their work and the evolution of their thinking regarding content-area literacy instruction. Their conversations revolved around three central questions: (1) what content-learning benefits might be realized by attending to literacy? (2) What is the place of content instruction during the literacy block in elementary classrooms? and (3) What does instruction look like that integrates literacy and content instruction in ways that remain true to both literacy and content goals and standards?

Draper et al's (2005) study would be placed a step ahead of my study in the sense that it started with an awareness of the need to change researchers' current thinking and instructional practices and culminated in collaboration to narrow the gap between literacy education and content area subjects. This is unlike my study which is still at the needs' assessment level to find

out issues pertinent to preparing preservice teachers for reading to learn from content areas and how they can help their future secondary school students to comprehend the texts they will use in their subjects. Important to note for my study is the fact that each of Draper et al's experiences with pre-service and in-service teachers, although widely varied, along with their regular conversations about their research, prompted them to reconsider their views about content instruction and literacy instruction and their role as teacher educators to help teachers and teacher candidates grapple with these issues. Those experiences and conversations made them reconsider the activities and recommendations they provide in their content courses, their content-area methods courses, and their literacy courses.

Content Literacy and Content Area Pre-service Teachers

Recently the voices of pre-service (and in-service) teachers have started to be recorded to find out their perceptions of quality of the education they receive (Brookhart & Loadman, 1996) and what they think about themselves as future teachers (Young, 1998). Hall's (2005) article presents the results of a review of the research into content area teachers' attitudes and beliefs about the teaching of reading within their subject area(s). Three questions were used to guide her review: (a) what attitudes and beliefs do pre-service and in-service middle and high school content area teachers have about teaching reading to their students, (b) how have teacher educators attempted to work with pre-service and in-service middle and high school content area teachers on becoming teachers of reading, and (c) what effects did these attempts have on the teachers involved?

Hall (2005) searched the ERIC database and examined references cited in published studies over the last 33 years. Studies used in this review were published in peer-reviewed journals between the years 1970 and 2003. The studies included focused on pre-service and in-

service teachers who were either teaching or being prepared to teach a content area in grades 6–12. Nineteen studies met these criteria and were included in this review. The studies included in this review report that pre- and in-service teachers hold a wide range of beliefs about teaching reading in the content areas. These beliefs may include: (a) content area teachers either cannot or should not teach reading (O'Brien & Stewart, 1990), (b) teaching reading is the responsibility of others (Donahue, 2000), (c) teaching reading in the content areas is important (O'Brien & Stewart, 1990), and (d) content area teachers would like to teach reading but do not know how (Yore, 1991). Five of the 19 studies suggested that pre- and in-service teachers might believe that they are not qualified to teach reading to their students (Donahue, 2000; O'Brien & Stewart, 1990; Yore, 1991).

In Donahue's (2000) and O'Brien and Stewart's (1990) studies, some of the pre-service teachers who participated stated that either reading or English teachers should provide reading instruction to students given they have more specialized knowledge in this area and are more qualified to teach reading. Other pre-service teachers thought their future students did not need reading instruction in order to be successful with the texts they would be expected to read. About half of the pre-service science teachers in Donahue's (2000) study believed that science class was a place where students did not have to focus on reading and writing. Donahue reported that these beliefs appeared to be based on the pre-service teachers' previous experiences as students of science and on what they believed was required of students in science classes. In O'Brien and Stewart's (1990) study some of the pre-service teachers believed that any difficulty students may encounter within a content area was primarily due to lack of pre-requisite knowledge. Such thinking is likely to negatively impact students and is a reflection of unwillingness to considering one's role in helping students develop as readers and instead shifting the blame elsewhere.

Other studies indicated that pre-service, content area teachers can be helped to learn about reading through coursework. These courses typically blend all students together regardless of what they plan to teach. Review of the research on the effectiveness of these courses reveals that they can help pre-service teachers develop positive attitudes and beliefs towards teaching reading in their content area. For instance, in Donahue's (2000) study, pre-service, secondary science teachers were allowed to read science-related multi-genre texts that included novels, research articles, biographies, and mysteries. Many teachers in the course left with a belief that teaching reading in science was important. Following the course, the teachers preferred more engaging texts to school textbooks for use in helping their future students develop a wide range of reading skills and purposes that they believed could only be addressed by using multiple texts. Donahue's study suggests that content area reading courses might cause pre-service teachers to act out their newfound beliefs once they went to teach. Lloyd (1990) found that pre-service teachers were more likely to understand the benefits associated with teaching reading in their content areas only after having completed a required course on this topic. Prior to taking the course, these teachers were more likely to think that reading instruction at the secondary level was a waste of time and that reading teachers should be solely responsible for providing reading instruction. However, neither study examined if or how these attitudes carried over into the teachers' future classrooms.

Other researchers report, however, that these courses may not be effective in getting teachers to teach reading once they enter their classrooms. Vigil and Dick (1987), for instance, found that positive attitudes towards teaching reading did not necessarily mean that the quality of reading instruction was better in these classrooms. Though some teachers in this study felt that a wide range of reading strategies were important, their instruction with students centered

primarily on developing their study skills and vocabulary knowledge. Students received little help on learning such things as how to set purposes for reading and how to summarize text. In O'Brien and Stewart's (1990) voluntary interviews from ten participants showed that some teachers might choose not to implement reading instruction in their future classrooms even though they now believed it would be useful to their students. The rationales for not teaching reading centered primarily on the teachers' beliefs about how schools and classrooms work. In other words, courses in content area reading did not always effect change in a positive way. Of the 250 participants in their study, half left the course feeling that teaching reading was still not their responsibility.

Other research (e.g., Bean, 1997, 2000) which examined pre-service teachers on student placement indicate that pre-service teachers are not provided time to incorporate and/or experiment with interactive strategies (Bean, 1997) due, in part, to the often restrictive co-operating teachers during student placement. They are often swayed easily from using strategies when cooperating teachers veer them toward more "teacher-centered approaches particularly when they are pressed for time to cover content faster" (Bean, 2000). Pre-service teachers also often feel insecure about classroom control, and learning strategies take a degree of sophistication in managing time, students, and classroom interaction (Irwin et al., 2003). Some researchers have suggested that providing pre-service teachers with a way to practice teaching reading in their content area may help them see the benefits of such instruction and might convince them that it can be done. Memory (1983) required pre-service teachers enrolled in his content area reading course to tutor middle and high school students in a one-on-one setting for 1 hour a week over a 10-week period. The students and teachers were matched so that each teacher was working with a student in the content area they planned to teach. The teachers who

participated in this study increased their confidence about their abilities to teach reading. However, Memory's study did not address the issues raised by O'Brien and Stewart (1990) who stated that some pre-service teachers would be unable to teach reading in their content area because of the belief that the school they would someday work in would not accept it.

What these studies convey in general is that concerted efforts must be made to equip pre-service teachers with skills and strategies for reading to learn from content areas and demonstrate their relevance for their future students. If teachers are not given the opportunity to consider the wide range of reading skills students must apply to text and the purposes they must read for, then they may not realize and/or understand important differences between subject matter. Additionally, generic treatment of text may influence how students learn or conceptualize what it means to read texts within the content areas. Otherwise teacher educators will potentially be doing teachers a disservice if they present reading as a decontextualized process that contains a set of skills/strategies that can be generically applied across the content areas. Without this specialized understanding, content area teachers may not realize that their role is different from a reading specialist or an English teacher. They may also not realize that reading instruction could potentially help their students learn subject matter. Therefore, the ways in which teachers are taught how to think about and teach reading could potentially impact how they address this topic with their students.

Content Literacy and Professional Development

One of the reasons students fail math and science is related to anemic efforts at teacher development or capacity building. Teacher Capacity building has been found to be the most productive investment for schools and far exceeds the results of teacher experience or class size (Reutzel & Cooter, 2005). This view concurs with Denson (2001) who posits that improving the

quality of teachers in the classroom "does more to assist students, especially those who are educationally at risk, than any other policy-controllable issue, including small pupil-to-teacher ratios or adopted materials" (p. 34). Knowledgeable teachers produce excellent results regardless of the programs found in the classroom. It is also known from previous research that educational innovations usually do not succeed if teachers are not provided with the skills and knowledge needed to carry them out (Pelgrum, 2001).

The key to increasing student ability to comprehend and compose text in any area is a knowledgeable teacher who can (a) make adaptive decisions in response to student needs and (b) engage students in higher order thinking through teacher modeling, direct explanation of the exact strategies students need, and scaffolding instruction (Mehigan, 2005; Snow, Burns, & Griffin, 1998). The important point, however, is that in order to make adaptive decisions and engage students in higher order thinking, teachers need (a) a repertoire of diverse strategies, (b) knowledge of the direct relationship between teaching practices and student performance, (c) expertise in applying that knowledge in the classroom, (d) a personal commitment to increasing the performance of *all* their students, (e) the confidence to make professional decisions that deviate from the scripted program (Mehigan, 2005).

Innovations and reform projects can provide professional development for practicing teachers. Strengthening Mathematics and Sciences in Secondary Education (SMASSE) is an example of a project in Kenya aimed at addressing the needs for improvement in student achievement, teacher preparation in science, and professional development of practicing teachers (Inyega, 2005). The SMASSE Project, started in 1998, uses the PDSI and ASEI acronyms to remind teachers and teacher educators about the importance of student-centered learning activities coupled with appropriate teaching methods/strategies. ASEI stands for *Student-*

centered Activities, Experiments, and Improvisation. SMASSE refers to ASEI as a movement involving various types of student activities, such as class discussions, hands-on inquiry-based class experiments, and use of locally available materials to teach maths and science concepts where conventional apparatus are inadequate or not available (Inyega, 2005). Teachers and teacher educators are expected to prepare lesson plans based on the ASEI movement. The project promotes the notion that teachers can improve their teaching skills/strategies if they are encouraged to thoroughly prepare their daily ASEI lesson plans and use a variety of teaching aids/methods that promote student interest and curiosity in learning maths and science. This calls for thoughtful construction of lesson plans using various reference materials, and teaching of maths and science topics utilizing thoroughly prepared lesson plans and relating them to local contexts.

Teachers in-serviced by the SMASSE project are also encouraged to continuously evaluate each step of their lesson plan's implementation in terms of teaching/learning processes. The evaluation actually happens before, during, and after classroom instructions and is recursive in nature. SMASSE calls this new approach to teaching PDSI. In this context, **Plan** refers to careful lesson preparation based on learners' needs and problems. **Do** refers to teaching a science lesson using well-chosen and planned activities. **See** means to assess and evaluate a science lesson at all stages of its development and implementation; and I**mprove** refers to making use of feedback from the lesson evaluation to prepare better instructional activities through enhanced planning and implementation of subsequent lessons (SMASSE Project, 1998). The project assumes that using ASEI lesson plans and PDSI approach during maths and science instruction in Kenyan schools is one of many ways of ensuring meaningful mathematics and science lessons leading to a scientifically literate population and labor force (Inyega, 2005).

Inyega (2005) describes one teacher's experience in the SMASSE in-service professional development program, which enabled him to incorporate comprehension instruction in his teaching of high school chemistry. The teacher, pseudonym Saba, claimed that during the in-service education, he learned more about activities such as concept word mapping, key word sentences, word burrs, and directed activity related to a text (DART). He said these activities made theory lessons more interesting and enjoyable to his students. Saba was quoted as saying:

> …even if it is a theory lesson, to make it more interesting I include the activities, through discussions, other concepts, which we learned during our "training" at the national level like DART (directed activity related to text), concept word mapping, word burrs, and all those. I think they are helping our students during our discussions.

Using DART, Saba involved his students on comprehension activities based on scientific passages. The passages were related to the topic he taught. He gave DART activities to have his students to improve their scientific language and communication of scientific concepts and principles. On how he conducted DART activities in class, Saba said:

> …there are certain passages like for example if you are talking about a topic, you find there is a passage, a chemistry passage, scientific oriented, information results are there. Now from there you can set something like a comprehension sort of questions. The students read the passage and then from those questions you will see are they able to interpret the concepts from the passage correctly, are they able to direct questions to what is in that particular text. And that one helps me a great deal to know how students perceive things, how they understand science, like the way they are going to interpret the text.

Saba is of particular interest in my research because he is a former ELIMU COLLEGE student who graduated in 1990. The fact that he learned about comprehension instruction and reading to learn from science texts ten years after graduating is perhaps a testament of the important role professional development can play.

Conclusion

In this chapter, I provided a brief history about education in Kenya. I then established the relationship between reading and content (Friend, 2000/2001) by citing literature on content literacy, teacher preparation, and professional development. Considerable research supports the integration of reading and content-area instruction. The examples cited here reflect a general consensus through the research literature: We should not overlook the obvious benefits of content literacy. This approach produces stronger readers who possess a greater understanding of content knowledge (Holloway, 2002). I reiterate that teachers play an important role in facilitating comprehension, or the lack of. It is not the method that makes the difference, it is the teacher! With the future of countless millions of young people in the balance, new teachers need whatever help they can get. One of the best gifts they can be offered is an understanding of how to use new tools (such as using literacy in the content areas) to augment their efforts (Wood, 2004).

CHAPTER 4

RESEARCH DESIGN AND METHOD

Methodological Perspectives

In this qualitative case study research (Merriam, 1988; Stake, 1994) of reading to learn in the content areas, I used a social constructivist perspective to investigate how pre-service teachers are helped to comprehend required readings and prepared to teach their future students to do the same. Social constructivism places the experiences and views of participants in a social context at the forefront (Au, 1998). In other words, I believed that participants were likely to construct and make meaning of knowledge about comprehension and comprehension instruction based on their environments and experiences. Through the constructivist framework, I was able to interpret participants' knowledge about their experiences regarding my research topic. Lastly, I purposively selected Elimu College because I am on study leave from the institution and, technically, still their employee. There was thus the motivation to research and, hopefully, make a positive contribution to my work place.

Participant Selection

My goal was to have a comprehensive understanding of meaning in context and so I enlisted participants I thought would be in the best position to provide data that fits the purpose of my study. Through purposive selection (LeCompte & Preissle, 1993), therefore, I identified the following participants:

(a) Six of seven English Language and Communication Skills lecturers teaching at Elimu College. One of the lecturers (myself) is on study leave. One way all six lecturers participated in

the study was by administering questionnaires to their second-year students. These lecturers ranged in age from 37 to 52 years. Their years of experience at Elimu College ranged from two to twenty-five. Three participants from this department were interviewed and observed in class teaching. One other lecturer was not included in interviews because she is a close friend of mine. She was, however, enlisted as a peer de-briefer and informant instead.

(b) Heads of Departments (HODs) from each of the following departments: chemistry, physics, biology, mathematics, library science, physical education, environmental science, education, and industrial education were invited to participate. HODs were targeted because traditionally they include some of the longest serving members of staff at Elimu College and it was assumed they would know the most about my topic. Of the nine, only four agreed to participate in this study (pseudonyms **CAL1, CAL2, CAL3,** and **ELCS 4**). They ranged in age from 40 to 53 years. Their years of experience at Elimu College ranged from five to twenty-seven years.

(c) One hundred and six lecturers were invited to respond to a questionnaire for administrators and lecturers. Sixteen participants responded by turning in their questionnaires (a 15.1 percent return rate). The 16 lecturer participants ranged in age from 32 to 55 years and were from the following departments: Biology (four participants – **CAL3, L4, L98,** and **L94**); Chemistry (one participant – **L12**); Education (one participant – **L27**); English (three – **ELCS4, ELCS5,** and **ELCS6**); Environmental Science (one participant – **L97**); Industrial Education (one participant - **L45**); Physics (3 participants – **CAL2, L80,** and **L82**); and Mathematics department (two participants – **CAL1** and **L90**).The lecturers speak at least three languages with vary degrees of competence (English, Kiswahili, and one or more African Indigenous Kenyan and Foreign languages.)

(d) All 2005 second-year pre-service teachers (130 in number) were invited to respond to a questionnaire for pre-service teachers. One hundred (54 Male; 46 Female) students, aged 18-32, responded by turning in their questionnaires (a 77 percent return rate). The students were enrolled in a three-year full time program and were studying the following subject combinations: maths/chemistry (29 students); maths/physics (29 students); physics/chemistry (18 students); biology/chemistry (20 students); maths/computer science (2 students); and physics/computer science (2 students). The students speak at least three languages with vary degrees of competence (English, Kiswahili, and one or more African Indigenous Kenyan and Foreign languages.)

Data Collection Methods

Questionnaire for Lecturers and Administrators

Designing the questionnaire: All the questionnaires (for lecturers, administrators, and students) were drafted by myself and honed through brainstorming with my dissertation advisory committee during my prospectus defense. I pilot tested the lecturer questionnaire with three lecturers. I gave them the questionnaires and asked that they note any question(s), discrepancies, and/or phrase(s) they thought were problematic. Following the pilot test, it was necessary to make revisions in the wording of some of the questions. For example, I dropped the word *reading* in phrases such as *reading comprehension* or *reading comprehension instruction* because feedback indicated the word was misleading – i.e., with sentiments such as the English department is the one which knows about *reading* comprehension. Therefore, where the original research question read "*What are English Language and Communication Skills lecturers' perspectives on their knowledge and practices with regard to: (a) general reading comprehension instruction, and (b) content area reading comprehension instruction*, it

ultimately read "*What are English Language and Communication Skills lecturers' perspectives on their knowledge and practices with regard to: (a) general comprehension instruction, and (b) content area comprehension instruction."* In another example, where I had written *"How would you define reading comprehension,"* the question became *"How would you define comprehension?"* I have, however, retained the term *reading* in the research questions but bracketed it. I realized also that I had to re-do the qualitative survey for administrators since many of them were no longer teaching classes. For instance, one question had to change from *"When you are handling students, what texts do you use to help them comprehend your subject?"* to *"**Before you became an administrator** and when you **were** handling students, what texts **did** you use to help them comprehend your subject?"* In the end, some of the questions included in this questionnaire were open-ended. For example, "*What comprehension monitoring strategies do you emphasize?"* Other questions required forced-choice responses in combination with an open-ended explanatory request. For example, "*How prepared do you think the pre-service teachers are to teach comprehension of the texts they will use to teach their subjects?"* The response options were: *"Very Prepared," "Prepared" "Somewhat Prepared,"* and *"Not Prepared."* The follow-up question to this was, "*Explain your choice."* Once I finished revising the questionnaires, I printed 106 copies and I numbered them from 1 – 106 (for privacy and confidentiality purposes).The numbers corresponding to lecturers and administrators were known only to myself. Although originally I had planned to invite only 13 lecturers to be involved in the research, I decided to distribute the survey to all 106 lecturers and administrators at Elimu College.

Administering the questionnaire: I put the questionnaires, an explanatory cover letter, and an invitation to participate in the research, in the campus mailboxes for all lecturers and

administrators. Then I spoke to each lecturer individually whenever I saw them on campus and appealed to them to respond to the questionnaire. This meant some lecturers were asked more than once to try and find time to "do me a favor" and fill out the questionnaire. I did this Monday to Friday, at 10:00 to 11: 00 or 11:30 A.M in the months of June and July 2005, by going to the staff room. This is the place where all staff members (teaching and non-teaching) are served beverages at 10:00 A.M. and 4: 00 P.M. respectively, and where mailboxes are located. In my talking to the lecturers, some of them told me they thought the questionnaire "*was leaning more towards English"* (i.e. should have been given only to members of the English department). Many of them claimed that they were *"not understanding my questionnaire"* and therefore would not participate in the study. For example, on Tuesday June 21, 2005 at 7:30 P.M., I met two heads of department (**CAL2** and **ELCS4**). **CAL2** confessed that he was *"confused"* about my questionnaire and needed further clarification. There and then I secured an appointment to meet him the next day at 2:00 P.M. **ELCS4** concurred with **CAL2** and asserted that some lecturers had approached her and discussed the questionnaire with her. She claimed those lecturers thought the questionnaire was for lecturers in the English department and for that reason, some of them would not respond. Fortunately, earlier on at the beginning of the research project, I had explained to **ELCS4** at length about my research study. She said to me that she had tried to explain to the perplexed lecturers that the information was needed from all the lecturers and requested them to *"just fill it out relying on [their] understanding and experiences at Elimu College."* **ELCS4** offered friendly advice to me to find a forum to explain to the lecturers in greater detail about the study since *"many seem[ed] confused"*. I shared with her the strategy I had adopted – to personalize my requests by speaking to as many lecturers as possible face-to-face about the research - since I thought that would be more effective in getting the lecturers to

ask any questions, raise any concerns, and hopefully, gain a better understanding of the study before responding to surveys.

On June 26, 2005 when I met **CAL2**, similar sentiments were expressed again. He claimed that he had been in a heads (heads of department) meeting where my research study came up. Many of the lecturers felt the questionnaire was for English department. He claimed that lecturers seemed distracted by the very first question: *"How would you define comprehension?"* He claimed some of the heads in this meeting had even wanted to put their questionnaires in the mailboxes of lecturers from the English department! Apparently also, they seemed suspicious about my intentions - maybe there was something I was interested in finding out from them (i.e., *I had a hidden agenda they were yet to decipher* to use his words).

These comments were reiterated repeatedly during the time I spent collecting data. Initially I became unsure of my research instruments and wondered whether or not they were clear enough to investigate what I wanted to learn. These concerns led me to consult three members of the English department to countercheck my instruments and to act as my informants. In this meeting, apart from assuring me the survey questionnaire was good, the lecturers spoke about *"attitude of these tutors"* towards anything coming from the English Department and somewhat predicted the low survey response. In other words, I needed to brace myself for a VERY low return/response rate. They, however, also offered friendly advice on what I should do to enhance data collection i.e., by attending the staff meeting and informing all members of staff about the study. Some lecturers asked me why I did not give them a questionnaire with forced-choice answers. One of the lecturers said, "*Madam, who has the time to fill all these out. People don't have time."* Yet other lecturers approached me and asked, *"What do you really want me to*

say here?" I tried explaining to them that I solicited their perspectives and that they were free to share anything from their experiences that related to my research topic.

Although I expected it and thought I was psychologically prepared, I felt let down (to say the very least) when, out of 106 questionnaires, I received only 18 responses! This was in spite of the daily meetings and talking to the lecturers in person! What happened to the lecturers who made promises and had said, *"Now that I have talked to you, I will fill the questionnaire?"* One lecturer explained that he had planned not to respond; his reason being – *"I was there (in America)"* and had asked someone else to conduct the research on my behalf. Another one was shocked to learn it was my research study when he had assumed it was my husband's. I realized this when he asked me, *"Are you also doing Ph.D.?"* When I answered, *"Yes"* he said, *"Oh, I didn't know."* Even after this realization, he never returned the questionnaires to me. All in all, I received 16 questionnaires which I re-numbered the questionnaires from 1-16 as follows: **L1** to **CAL3; L98** to **L2**; **L94** to **L5**; **L27** to **L6**; **L35** to **ELCS4**; **L36** to **ELCS6**; **L39** to **ELCS5**; **L92** to **L10**; **L97** to **L11**; **L45** to **L13**; **L80** to **L14**; **L82** to **L15; L55** to **CAL1; L77** to **CAL2;** and **L90** to **L16**.

Questionnaire for Students

Designing the questionnaire: I included students' perspectives because I wanted to gather their views on comprehension and comprehension instruction in order to clarify and/or solidify lecturers' as well as my own perspectives on the subject. In addition, from a social constructivist perspective, I understood that knowledge is co-constructed by all in the research setting and that students' concerns and/or questions, although they may vary from lecturers were as important to my study, hence their inclusion. In *The Schools We Have, the Schools We Want,* Nehring posits, "One voice has been noticeably absent from the chorus of school reform literature: students. We

hear from scholars and policy makers, task forces and think tanks, sometimes even teachers. But what about kids?" (p. 129). Yet the heart of education should be in students' voices for "there is no learning without a learner. And there is no meaning without a meaning maker" (Allen, 2000, p. 231).

I designed an open-ended survey questionnaire that covered areas such as: What do students think comprehension instruction is? Is it relevant in their specialty areas? What gets in the way of their reading to learn from content area texts? I also asked them to suggest how lecturers could better facilitate their reading to learn from content area texts and how prepared they thought they were to teach their future students to comprehend texts they will use to teach their subject areas (see appendix J). I pilot tested the student questionnaires with two third-year students. I asked that they complete the questionnaires and note any question(s), discrepancies, and/or phrase(s) they thought were problematic. Based on their responses, it was necessary to make revisions in the wording of some of the questions. For example, in the question "*How might you help your future students to* ***comprehend/understand*** *the texts they will use to read in the subjects you will be teaching?"* both comprehend and understand were used whereas in the original questions only comprehend had been used. Other questions had forced-choice responses in combination with open-ended follow-up requests. For example, *How would you rate your ability to comprehend/understand texts of all kinds?* The response options were: "*Very able," "Able," "Somewhat Able,"or "Needs Improvement."* The follow-up was, "*Explain your choice."*

Administering the student questionnaire: The student questionnaire was administered to130 students. Each of the six lecturers from the English and Communication Skills department administered the questionnaires to all second year students (see appendix K). In line with social

constructivism (importance of social interaction in knowledge generation and meaning making), the students were given the option of discussing the questions with classmates before responding to the questionnaire. They were encouraged to participate by returning the questionnaires within a week's time. One hundred students agreed to participate by turning in their questionnaires, which I re-numbered the questionnaires from **S1-S100**.

Interviews

The development of interview questions was guided by Glesne and Peshkin (1992). These researchers posit, "The questions you ask must fit your topic; the answers they elicit must illuminate the phenomena of inquiry. And the questions you ask must be drawn from the respondents' lives. (p. 66)" Individual interviews were conducted with three English and Communication Skills lecturers and three content area lecturers from (biology, physics, and mathematics). The sequence of events was as follows: (a) Interviewing before observing a lecturer teach, (b) classroom observation, and (c) post-observation interview. I had a "pre-classroom observation" interview with each of the six participants. These interviews were informal and not audio-taped because I met the lecturers impromptu and started talking with them. I relied on my memory to recount what was discussed with them. Then I conducted more formal "post-classroom observation" interviews with the six participants. These formal interviews were conducted using semi-structured guideline questions, which had an open-quality about them (see appendix G and H which have interview questions for the lecturers in the English and Communication Skills and mathematics and science departments respectively). Each interview took shape as it progressed (Dewalt & Dewalt, 2001; Kvale, 1996), lasted about one hour long, and was audio-taped. Originally, I had planned to conduct a focus group interview but this was not possible due to reasons beyond my control. However, an impromptu focus meeting

between three lecturers from the English and Communication Skills department and two lecturers from Physical Education and Biology departments occurred when I was doing my evening walk. Obviously this meeting was not audio-taped. I relied on my memory to recount what was discussed and how it informed my research.

Classroom Observation

I developed an observation checklist (see appendix I) based on the research literature into effective teaching behaviors and classroom interaction (Borch, 1996). The instrument focused upon comprehension instruction, if any, within content area teaching. The classes I observed exemplified participants' pedagogical theory and practice and a further exploration of the "extent of fit" (Emerson, et al., 1995) between self-reported information and the educational practice actually enacted. In total, I conducted 11 classroom observations. Three lecturers from the English and Communication Skills department were observed twice on different dates (see appendix M on research timeline) while two lecturers from the Physics and Biology departments were observed only once each during the entire research process. Each classroom observation session lasted one hour. I had prepared the checklist to aid in observation (see appendix I). The other three classroom observations were somewhat different because of the role I played – observer-as-participant (Glesne, 1998; Preissle & Grant, 2003). In two of the classes, I was actively involved in talking to the students about myself, my studies, and having students ask me questions. In another class, the students were giving short speeches (mini-talks) and the lecturer requested me to sit on the panel that offered advisement on good public speaking. I consider these instances of active involvement perfectly in line with social constructivism and co-construction of knowledge. Of the 11 lessons observed, only three lecturers gave me lesson plans. In seven of these lessons, the lecturers used the lecture method because of the content they

were teaching at that time. Two lessons (Biology and English) used group work. As already mentioned, each observation was followed by a semi-structured interview. This strategy worked well for me because I was able to follow up any issues that needed clarification or to probe further about what was observed in the classroom. Although I had planned to conduct at least three classroom observations for each participant, this was not possible again due to reasons beyond my control. One participant agreed to be observed but did not commit to a specific time. I ended up only interviewing this participant.

I expected differences across the lecturers I observed in the classrooms and interviewed. What exactly contributed to those differences was not the focus of my study. I was more concerned with how each observed class gave me a glimpse into how educators and learners interacted with texts, each other and the contexts in which those interactions occurred. That said, however, I acknowledge that engaged pedagogy recognizes each classroom as different, that strategies must constantly be changed, invented, re-conceptualized to address each new teaching experience (hooks, 1994). Because of the nature of my inquiry during classroom observation, it would be ill-conceived to conduct a comparison. If anything, the lecturers were not focusing on the same issues in the same ways. I was careful, therefore, about how I theorized their experiences. Rather, I investigated what they recognized and acknowledged about their experiences and tried to see what threads were common across the disciplines through constructivist theoretical lenses. In other words, what skills and strategies did they emphasize and how did they enact their self-reported views (Glesne, 1998).

Observer stance

How one conducts an observation depends on one's theoretical perspective (Glesne, 1998) and the research question(s) (Hammersley & Atkinson, 1995). Each researcher must also

weigh what might be gained, and at what risk or cost, by acting more naturally, by becoming more involved, and by approaching the research setting more informally or casually (Wolcott, 1999). Elimu College was ideal for participant observation [working back and forth participant-as-observer and observer-as-participant] (Glesne, 1998; Preissle & Grant, 2003). Although I value active participation, not all opportunities provided for that (Spradley, 1980). In one of the classes where students were giving short speeches (mini-talks), the lecturer asked me to sit in for about an hour and provide feedback to the students. Bearing in mind that people in the research sites were not be oblivious to my presence anyway, I accepted the request but had to leave after an hour (the class lasted two hours). Later the lecturer told me that as soon as I left, the students became more relaxed or in her own words, "*it is like a huge cloud lifted from the class."* On hindsight, I should have declined active involvement in this class. It is recognized in classroom research, under the rubric of the *observer's paradox* (Labov, 1994) that the very presence of the observer may alter what is being observed, especially the naturalness of speech and behavior. Wolcott suggests that as a general guideline, it is preferable to stay on the cautious side, becoming as involved as necessary to obtain whatever information is sought. Operating with that level of restraint allows a researcher to "help everyone else to remain conscious of the research *role* as the work continues, rather than risk having someone later complain about having been misled by presence at involvement" (p.48 -49).

Recognizing the importance of audio-taping and the need to capture fully what each lecture said in the classroom, more than one audio-tape was used. The possibility of the lecturers' and students' behavior being affected to some extent by their perceived expectations of the research project, my presence in the classroom and the audio-tape has to be acknowledged. Fortunately the intrusion of audio-tapes and my presence appeared to be less of a threat than it

might otherwise have been once the lessons were in full flow, and this was reflected in conversations with the lecturers after the lessons. This seemed to allow for audio taping of the lessons under conditions not too far removed from the naturalistic situation in which the lecturers and students would normally be working. In one class, I was asked to talk about my experience in The United States in general and to have students ask me any question they so desired. Some of the questions students asked put me on the spot and I was not sure how to respond after letting down my guard and getting too involved. For instance, after disclosing the reasons why I juggled academic advancement and child-bearing (i.e., had tried unsuccessfully for 13 years and when I had given up they came), the focus of questions shifted radically to very personal issues. I was torn between maintaining the teacher-student (hierarchical) relationship or 'disclosing' personal information and in the process becoming vulnerable. Wolcott's (1999) claims that "involvement proves the more difficult aspect of the assignment [fieldwork] not because it is difficult to enter the activities of others who interest us, but because it conflicts with deeply held and uncritically notions of how we believe we should act when we are trying to be 'scientific'" (p. 48). "Such tensions in our underlying beliefs about how to properly enact the research role can help us realize that we do not have to go far afield to find culture at work; we need but take a closer look at how we ourselves believe we should go about the work of locating culture" (p. 50). Maintaining trust and rapport continues throughout the length of the study and long after the fact (Dewalt & Dewalt, 2001; Janesick, 2000). I hope this research project strengthens my relationship with all those who graciously shared their perspectives on their knowledge and practices at Elimu College.

Archival Data

Secondary documents collected and analyzed included: The national curriculum, syllabus, worksheets, pre-service program reports (appendix J provides a guideline lecturers were to use to write their reflections after each lesson). The six lecturers I observed were unwilling to write reflections, so their lesson plans and/or lesson notes were solicited instead.

Reflective Talk

Soon after each classroom observation, I met with the participant briefly to discuss about the class. More often than not, the participant asked for an evaluation of their lesson. I had to say something about the lesson although I reiterated to each participant that I was not in their class to evaluate their teaching. I went ahead and showed them the notes I wrote for each observation if only to allay their fears about my presence in their classrooms. In short, post-classroom observation talk served the reflective purpose and hence the change of terms from "reflective journal" to "reflective talk." More detailed discussion was held in post observation interviews. Below is a table providing connections between data collection methods and research questions (see Table 1 below).

Organization of Data Collected

After data collection was completed and all the data entered into a lap-top computer, based on participants and the dates they are created. I made several copies of the data and saved them on several computers and CD ROMs as well as retain original documents such as lesson plans and instructional materials. In other words all the documents and artifacts were catalogued and stored electronically as well as hard copies, where applicable. This process ensured that all the collected

data were accounted for and retrievable whenever needed during the analysis. The qualitative research survey responses were entered into word processor and also securely bound and stored for easy retrieval.

Table 1

A Matrix of Connections between Data Collection Methods and Research Questions

Research Questions	**Data Collection Methods**				
	Interviews (formal & informal)	Questionnaires	Classroom Observations	Reflective Talks	Archival Data
What are ELIMU COLLEGE lecturers' knowledge and practices with regard to: (a) General reading comprehension instruction, and (b) Content area reading comprehension instruction	**X**	**X**	**X**	**X**	**X**
What are ELIMU COLLEGE pre-service teachers' perceptions of their reading comprehension ability and preparedness to teach reading comprehension?	**X**	**X**	**X**		**X**

Data Analysis

The aim of the data analysis was to understand the key issues and problems affecting reading comprehension instruction at Elimu College. I kept my theoretical perspective – social constructivism – as well as my research questions at the forefront of my thinking throughout the data analysis period. During the transcribing of interviews and notes from classroom observations, I wrote analytic memos on post-it notes. Analytic memos are any thoughts one has while transcribing about the potential significance of the data in light of the research questions. The audio-recorded data were transcribed verbatim including all word fillers such as *uhmm….* Pauses were marked with three dots although the exact timing of the pause was omitted. Where the participant said something with emphasis this was written in capital letters and in brackets I

indicated - *emphasis added.* If a participant spoke in another language, for example Kiswahili, I provided the translation in parentheses next to the words or phrases.

Field notes were expanded during the data collection period and immediately after collecting data. When data transcription was complete, all data for this study were entered into Version 5.08 of The Ethnograph (Seidel, 1998) - a qualitative Data Analysis Software with capabilities that allowed me to notice interesting things within my data, mark those things with codes, collect and think about them, and retrieve those things for further analysis. In short, I was able to manage my data, to pick out things, and to know and to talk about those things. In addition, I brought to the analysis of these data what I have learned about how reading is taught in the United States to make recommendations for further developing of comprehension instruction at Elimu College. The findings are presented in the next chapter (chapter 5 and 6) in form of figures, tables, and descriptive form of participants' perspectives of their experiences and practices in relation to preparing Elimu College pre-service teachers to comprehend required readings and to teach their future students to do the same.

Analyzing Interview and Classroom Observation Data

I utilized inductive data analysis strategies (Charmaz, 2002; Strauss & Corbin, 1996) and employed open-coding techniques, to reveal regularities in the data. I labeled and organized the interview data using simple and general coding systems by looking for leads, ideas and issues in the data, and engaged in line-by-line coding (Charmaz, 2002; Preissle & Grant, 2003). Active terms and verbs were used to define phenomena in the data and link specific statements in the transcriptions to the main processes that affect participants' knowledge and experiences regarding comprehension instruction. Focused coding was done followed the line-by-line coding, and I used the "most frequently appearing initial codes to sort, synthesize, and conceptualize the

collected data" (Charmaz, 2002, p. 684). This assisted in generating several categories for the interview data and data from classroom observation. The coding process further helped me to establish the relative emphasis participants placed on various issues regarding their experiences regarding comprehension and comprehension instruction. With constant reference to the research questions, I grouped the codes into categories, patterns, and themes when interpreting the data using qualitative research procedures (Charmaz, 2002; Strauss & Corbin, 1996). What I report are themes to answer my research question: What are lecturers' perspectives on their knowledge and practices with regard to helping pre-service teachers to comprehend required readings?

Analyzing Lecturer and Administrator and Student Questionnaire Data

One of the primary challenges that emerged as a product of reviewing the questionnaire data was that of *re*-presenting lecturers', administrators', and students' perspectives about their experiences with diverse texts and their preparedness to teach comprehension of their subjects. As a means of managing the questionnaire data, I entered all responses into tables that provided me with an opportunity to create an index from which the analysis process could originate as illustrated in the table below (see Table 2).

First I looked through the data line by line to see what broad categories were for responses and explanations. In the student questionnaire, for instance, students were asked to rate their ability to comprehend texts of all kinds and to provide an explanation for their choice. Explanations included words such as "because I can read and answer questions", "pass examinations", or simply "to understand all kinds of information." So I used those explanations as headings to begin sorting the data.

Secondly, I made those categories mutually exclusive by deleting extraneous information and cutting and pasting what I thought belonged in other categories. Then I looked for parallels and

disjuncture across data from all the questions in the questionnaires to make key themes mutually exclusive. For instance, the next question in the student questionnaire required the students to rate their ability to comprehend texts in their subject areas. If a response indicated that academic achievement was the indicator of success in reading to learn from content areas, I did not repeat

Table 2

Summary of Lecturer's Definition of Comprehension

Descriptor	**Transcript**	**Summary**
Understanding/ability to understand	- after reading or after being taught - passage - text - text or passage well enough to answer questions from it - subject matter taught, so that one can competently answer any query on the subject - information (be it in the form of scientific principles, facts, etc what is explained to you	Understanding information (scientific, factual) or subject matter taught, explained to you, or that you read well enough to answer any questions from it
Interpreting	- content	Interpretation of content
Studying, *understanding, and *interpreting	- given topic	Studying given topic
*reproducing	- *what one has read	Reproducing
Aim	- *answer questions related to texts read - simple or complex situations and problems such that one gets the methods of solving/talking about them	Aim to find methods to assess simple and complex situations, solve problems, and talk about them
Grasp (ability to)	- any important points expressed in any *written passage - ideas, *information, or knowledge	Grasping important points, ideas, knowledge
Receive and *understand	- *Information	Receiving
Personalizing	- *Information	Personalizing
Synthesized definition of comprehension Receiving, grasping, understanding, interpreting, and personalizing of information, important points, ideas, knowledge or subject matter taught, explained to you, or that you		

read well enough to answer any questions from it and/or reproduce it.

* Marks words/phrases/information repeated elsewhere

that theme. If I found a new theme, I took it up and went back to the data in all the other questions to pick out any information related to that theme. I then synthesized information on each question by creating a narrative using different subheadings emerging from the questionnaire data on each question. I further collapsed the categories to provide an account of lecturers' or students' perspectives on each question. All along I went back and forth between questionnaire responses and the research questions to ensure information sieved was relevant to the purpose of my study. This is what is referred to in qualitative research as constant comparison (Charmaz, 2002; Strauss & Corbin, 1996). Last but not least, I did a review of literature to move the data to a conceptual level or to ground the data in current research on comprehension and reading to learn from content areas. For the sake of brevity, the synthesized information is what ended up in my dissertation.

Last but not least, I was a visible partner in dialogue, a datum myself and in reporting the results, worked to produce a *polytext,* one that has the voices of my participants as well as mine (Glesne, 1998) or what Emerson et al (1995) and Lather (1997) call *polyvocality.* Ezzy (2002) suggests use of "illustrative extracts from primary data" (p. 147) to support the author's argument. I thus provided detailed description exemplars aimed at letting readers enter an imagined experience of the described phenomena as well as introduce different voices and perspectives to the findings. This allowed participants along with myself, and hopefully you the reader, to participate in the collaborative construction of the text's meaning (Atkinson, 1990).

Trustworthiness of Research

Trustworthiness of the data was assessed by triangulating (Denzin, 1978) information from the data collection methods (surveys, e-mail exchanges, observations, classroom artifacts, field notes, and semi-structured participant interviews) and from the perspective of different participants (myself - the researcher and a subset of lecturer participants). In addition, I triangulated the data with periodic member checks (Merriam, 1988) and weekly peer debriefings (Seidman, 1998) conducted with key quotes from my transcripts and through informal talks throughout the research process. I used two sets of peer de-briefers at different stages of my research work: During data collection and during data analysis. During data collection, three people served to ensure that the research questions were serving the purposes they were purported to serve. When the lecturer questionnaire was unclear, they clarified and allayed my fear about whether or not I had created rapport with my participants.

During data analysis and preliminary write-up, my dissertation advisor and my spouse served as peer de-briefers. Both were uniquely positioned to provide invaluable feedback. Although my advisor has been to the research site twice (in 2003 and 2004) she provided feedback akin to that of an informed outsider looking in on research phenomena. My spouse graduated from Elimu College in 1983. He went back to there to teach chemistry in 1990 and has been there to date. His peer de-briefings provided the historical context I needed to better situate this study. Drawing on his many years of experience in the research setting, he provided invaluable suggestions that further honed my research focus. He had a personal interest in my research study because in the past he had presented papers emphasizing the need to lay more emphasis on reading to learn from expository texts. In short, triangulation provided multiple ways of manipulating and reflecting upon data in ways that brought to the fore a richer and deeper understanding of the research phenomena and research process.

Reflections on my Research Experience

In this study, I entered the research setting, as an insider-outsider (Kvale, 1996; Spradley, 1980). I had insider advantage because I was born, went to school, and was educated as a teacher in Kenya. I taught high school English and literature, advised pre-service mathematics and science teachers on student teaching, and was lecturer and deputy Head of Department of the English and Communication Skills department. As an insider, I knew what to do to gain permission to conduct research in Kenya. Specifically, on June 6, 2005 I went to the Ministry of Education Science and Technology (MOEST) and applied for the research permit. Permission was granted on June 13, 2005 (see appendix L). On June 7, 2005 I made an appointment and talked to the then Chief Principal. During the meeting, I also gave him an official letter requesting for permission to conduct research at Elimu College. I got verbal consent from him during our meeting and later received an official letter permitting me to conduct the research. I knew the verbal consent was sufficient to enable me start data collection.

As an insider, I knew almost everyone I had worked with at Elimu College prior to the research. I felt a sense of belonging when I introduced myself to lecturers, who joined Elimu College while I was away, as being "one of them" but on study leave. I was aware of what to do, whom to consult and the hierarchical order in which things get done at the research site. This made it easier to enter the setting and re-establish rapport with participants. I was at ease sitting in the staff room and mingling with lecturers during tea time (at 10: 00 A.M. and 4:00 P.M. Monday to Friday) or interviewing lecturers in their offices. Chance meetings in the staffroom became, for me, times to catch up on events happening at Elimu College and to reconnect with the staff –both teaching and non-teaching. The staff room also became the place for setting up appointments for interviews and classroom observations. At the time I was doing this research

third year students were out on teaching practice (student teaching). The staff room thus served also as the place where experiences *"out in the field"* were recounted. I gained immense insight on the happenings *"out there"* by listening to the lecturers. For example, how many students were doing well on their student placement - an indication of the thorough preparation they have received at Elimu College. Many of the lecturers I talked to wanted to find out about my studies and life in the United States. Questions ranged anywhere from how my husband and I were 'making it' in our studies - with two young children, to how those who win green card lotteries fare after relocating to the United States. Some lecturers wondered why I *decided* to do my research at Elimu College. I explained to them my personal interest concerning Elimu College and of my intention to return to Kenya once I completed my studies – hence my continued interest in what is happening on the education scene at home.

I include an illustration of how my role as insider worked for me. On June 23, 2005 at 1:30 P.M, I went to the staff room and met two lecturers –one from Education department and the other from Mathematics department. In my continuing with the one-on-one questionnaire completion crusade, I started talking to one of them about my research work. I explained to the lady from the Education the strategy I had adopted to reach as many people as I possibly could via personal contact. She volunteered a suggestion that lecturers were to have a meeting that evening at 4:00 P.M., something I was totally unaware of. She further suggested that if I sought the Teachers Association (TA) Chairperson and briefed him about my research, during the staff meeting he would encourage the lecturers to complete the survey. Incidentally, about fifteen minutes prior to that talk I had seen the chairman taking the stairs to the second floor. I thanked her for the suggestion and reminding the two of them to fill out the questionnaire. I inquired about the TA chairman's office number and went to see him.

When I arrived at TA chairman's office, I found him talking to a new lecturer from the Education department. The chairman introduced her to me and I took that opportunity to remind both of them that I had placed a questionnaire in their mailboxes and would be happy if they filled them out for me. When the lecturer from the Education department left, the chairman and I started talking. I asked him about how he was and whether or not he had any classes. He said he was preparing for a 12:30 P.M. class. I then excused myself for walking in without an appointment and requested him to make an announcement about my research in the staff meeting. I explained to him why I needed his support in requesting lecturers to fill out the questionnaire and in thanking those who had already returned theirs to me. Before I left, I asked him about how far he had gone with his masters' program. More than two years before our meeting, he had shared with me about his masters program. We discussed at length about his study. He expressed his frustrations at the pace the program was moving and also how the final draft of his thesis had got lost en route to the external examiner. He was, however, hopeful that he would graduate in the year 2005.

As soon as I left the chairman's office, I met two lecturers from the Biology department. After the usual greetings, I gathered that one of them had been out on teaching practice the previous week and had not gone to her mailbox and so was unaware about my study. In our discussion also, we compared life in the United States and Kenya. I commented about how their faces looked bright and they seemed relaxed. One of them, who had been to New Jersey - USA for about a month, said she preferred being in Kenya because of the social system. She narrated her experience about how when on board a train during her visit in the USA, she noticed that many passengers entering the train seemed buried in their own worlds and none seemed to take interest in the person sitting next to her/him unlike in Kenya. After about 10 minutes of

exchanging pleasantries, I encouraged them to fill out the questionnaire for me. I went back to the department of English and Communication skills where I met two lecturers. On talking with them, one asked me to attend the staff meeting so that I could explain my research. I declined saying I had already requested the TA chairman to do it for me. In general and from my talk on that day, I became more aware of lecturers' willingness to offer suggestions here and there concerning the study. In short, my insider status helped me create rapport with participants.

As an outsider researcher, I had been away from the research setting/context for three years while pursuing graduate studies on two different occasions: at the University of Auckland in New Zealand between 1999 and 2000; and The University of Georgia from the year 2002 to the time I conducted this study (June – August 2005). I felt disadvantaged as an outsider researcher being not *truly* one of them. I sensed some tension and uneasiness in my interactions with some of the participants. Given that I did not explore this issue in greater detail, I can only speculate about my reasons for sensing this. I asked myself questions such as: Was it because I was pursuing a PhD (in addition to my husband who had recently completed his and graduated in May 2005)? Was it because of my gender, or ethnicity, or disposition? Was it because I had come from The United States – the "land of plenty" and had given them nothing in return for their views on my research topic? On a larger scale, how did Elimu College members view The United States [from a power dynamics viewpoint] in relation to researchers such as me? As Linda Tahiwai Smith (1999) has noted, in writing about decolonizing methodologies, research can be "a significant site of struggle between the interests and ways of knowing of the West and the interests and ways of resisting of the Other" (p.2). As a doctoral student in The United States, was I inadvertently positioned as privileged and perhaps viewed as unwittingly serving the goals and interests of outsiders? Did potential participants think I would appropriate knowledge for my

own professional and commercial gain? Yes, I was going to get the PhD, but weren't other benefits accruing from this study going to be weeded back to Elimu College upon my graduation? These questions occur to me, in part, because one of the participants pointed out that if I had placed $20 in envelopes and asked each lecturer to respond to my questionnaire, he was sure I would have got 100% return rate. These experiences were important lessons for me. I became more sensitive and appreciative of the challenges of negotiating the research terrain and being successful at doing that.

During the data collection and analysis process, I played the role of participant observer and interviewer. As an employee and member of Elimu College, there seemed to be a conflict of interest when it comes to reporting findings from this study. There was the risk of reporting the good news from the data while minimizing what needs improving with regard to teaching and learning. I clarify that I have the best interest of Elimu College at heart and hope that through research, I can make a contribution in line with the mission of Elimu College. That said, I struggled with how to present the results of the research particularly when deciding to leave unwritten for ethical reasons. For instance, in one of the interviews, a participant asked me to turn off the recorder because he was going to share with me 'sensitive' information. Bearing in mind that protecting confidentiality always comes before any other considerations in fieldwork (Dewalt & Dewalt, 2001), I switched off the tape and asked him to let me know when to turn it on again. This incident illustrated for me that the ethical thing to do is often a matter to be negotiated and heavily contextual. Janesick (2000) posits that ethical considerations should accompany plans, thoughts, and discussions about each aspect of qualitative research. I have to contend with the fact that a research code of ethics is generally concerned with aspirations as well as avoidances; it represents our desire and attempt to respect the right of others, fulfill

obligations, avoid harm, and augment benefits to those we interact with (Glesne, 1998). So I saw my research experience as grounded in an ethical commitment to a greater good and inclined toward research that contributes to the lives of the participants, a position closely aligned with philosophies of action, feminist, and critical research. Yinger (1990) considers "the healthy interaction between participants and the place that yields outcomes benefiting *all* those involved" (p. 92) to be the goal of reflective practice. Hammersley and Atkinson (1995) support the notion of 'respect,' 'appreciation,' and fidelity to the phenomena under study. This caused me to re-think researcher-researched relationship more closely (Glesne, 1998).

I maintained a healthy balance between my role as researcher vis-à-vis ethical dilemmas often inherent in any research and refined what I thought the role of friendship versus establishing rapport is. There was also the question about the nature of the relationship between myself as a fieldworker and my participants, why they were willing (or unwilling) to talk to me, how much confidence could be placed in what we revealed, and who benefited from the exchange. Furthermore, I avoided posing the "Why?" questions, knowing they can be the most vexing (Patton, 2001) and "seldom are people able to come up with neat explanations as to "why" that are likely to satisfy either themselves or the researcher" (Wolcott, 1999, p. 56).

I was on the lookout for ethical considerations that may be culturally dissonant. For instance, signing consent forms seemed very binding a contract and also very intimidating to some participants who were apprehensive about signing. Glesne (1998) posits that in some cases, "the very record left by consent papers could put individuals' safety at risk if discussing sensitive topics" (p. 117). What I did instead was request verbal consent to use or include their information in my work and whether or not to use their names. I provide an excerpt from an interview to illustrate that situations such as these call for negotiations to proceed.

Hellen: okay. And I was also wanting to ask your permission. Is it okay for me to use your name when I am reporting this or do you want me to use a pseudonym?
CAL3: Use a pseudonym (*laughter).*
Hellen: (*laughter).* You don't want to.. Cause when I asked (**CAL3**), he said, "It is alright. But if you think there is anything sensitive…"
CAL3: Use a pseudonym
Hellen: I will use a pseudonym? Okay. That is alright. That is what I will do.
CAL3: It is better. It is nicer to listen to because, if somebody else is reading that, ah! (CAL3) that one who is so biased and busy" you know. So somebody will not take you…
Hellen: They can take it that you wanted to be heard. Cause I know when I was talking to (CAL2) said, "That's fine. Put my name there." (*laughter*) But anyway, I respect that.
CAL3: (*laughter).* Use a pseudonym.
Hellen: I will use a pseudonym. And I am hoping…
CAL3: and a pseudonym, you know, you will also write more than when you know who you are writing for
Hellen: yeah
CAL3: For you when you are writing about whatever you are writing with a pseudonym, you will be more free to express yourself than when you are using somebody's name. You will start thinking, "what will they think? This is what the other…" you know, it will affect your whatever.
Hellen: I was only going to use that when, you know, I am going to transcribe everything, word for word - what we have said. And then I will go through and pick out what is relevant to my research question. So from there, I was going to say, for example (**CAL3**), I pick a quote and say (**CAL3**) said this. I pick a quote to support maybe a point that I am raising. That is why I asked if it is okay fro me to write your name.
CAL3: Is it an advantage? Is it advantageous?
Hellen: really. Either way, the quote will still be there (*laughter).*
CAL3: no.
Hellen: But at the end of the day I am also going to bring the work here. Like maybe I will put a copy in the library and maybe a copy to all the people who have participated, if I can afford it.
CAL3: yes.
Hellen: So you see, it will depend. But I respect that.
CAL3: just use a pseudonym. It is safer.
Hellen: Okay
CAL3: For both of us (*laughter)*
Hellen: Then I become free to write
CAL3: To write what you feel like writing. Yeah

Decisions such as this made possible the inclusion of data gathered from informal conversations when I met participants in a variety of settings such as the staffroom or when we went out to lunch. Associated with this was consent to be audio-taped and just the notion of using the audio-tape. I was unable to use the audio-tape in each and every encounter and hence had to rely on my memory to record information useful to my study. Weighing each situation on its own terms and adjusting as and when needed became the most prudent thing to do. My interaction with those who agreed to participate was collaborative and collegial. The participants

cooperated and actively assisted me, something that exceeded the demands of informed consent. The sense of cooperation and partnership became more relevant to the ethical assessment of qualitative field work than whether or not a consent form was signed (Glesne, 1998).

I understood also that there is no monolithic insider view (Wolcott, 1999). There are multiple insider views, and multiple outsider views. Every view is *a* way of seeing, not *the* way. I adopted a learner stance to guard against bringing preconceived ideas and opinions to the data collection. I was careful not to let the fact that I was once "there" as one of the lecturers obscure my ability to learn about Elimu College as a research site and its people (Glesne, 1998). I kept in check what Spradley (1980) calls *selective inattention* [which implies tuning out, not seeing, and not hearing that common in ordinary observation] and instead adopted a wider observational focus; made the familiar strange and the strange familiar or what Hammersley and Atkinson (1995, p. 9- 10) call making a familiar group or setting "anthropologically strange" to construct an account of culture under investigation that both understands it from within and captures it as external to, and independent of, the researcher. "Being there" (Dewalt & Dewalt, 2001) did allow scales to fall from my eyes, and my ideas and notions were continually challenged and resisted by the actions and words of those within the setting.

Another issue in conducting this research work was that I had to budget for extra time even when I requested meetings that would last about an hour. In addition, I learned to stretch my patience to the fullest extent possible. For example, when I went to see **CAL2**, we met at 3:15 P.M. even when I had a 2:00 o'clock appointment. He was honest in explaining that he had forgotten about our meeting and had scheduled another with members of staff from his department. In my first classroom observation on June 17, 2005, the lecturer came 45 minutes late because she was held up counseling someone. We were scheduled to meet in the staff room

between 10:00 to 10:30 A.M. When I arrived at 10:30 A.M and did not find her, I assumed she had gone to the class. Fortunately she had told me what class she would be at. I rushed to the class only to find she was not there. I decided to go ahead and introduce myself and start the observation without the lecturer. The students were very receptive and in fact said with or without the lecturer they always take charge of their learning. On Thursday June 23, 2005 I was scheduled to have two meetings - with **ELCS4** at 11: 00 A.M. and **Mueni** (pseudonym) at 12:30 P.M. Unbeknownst to me, **ELCS4** had taken her sick child to Agakhan hospital in Nairobi. I went to her office thrice between 11:00 and 12: 00 noon and was unable to locate her. At 11: 30 A.M, I met **Mueni** coming from **ELCS4**'s office. I reminded her of our meeting later on that day. She apologized for having to let me down because she had some urgent businesses to attend to.

Although I had my diary in front of me each day, I found it difficult to take notes during many of these conversations and I felt uncomfortable disrupting my listening in, and participation where necessary, to jot anything down. Besides, it would not have been culturally appropriate to be writing while engaging in conversation. In the end, I relied on my memory to recapture ideas relevant to my study. It is, however, unfortunate that the times spent in the staff room were not as long as I would have wanted them to be - for family reasons: having a two-month nursing child and a four-and-a-half year-old to attend to, nor as fruitful as I had hoped they would be. On many occasions my sister, who was kind enough to baby-sit for me, had to "flash" me on my cell phone or send someone to call me when the baby's cries became uncontrollable.

In short, I took any and all opportunities to reinstate my strong affiliations with Elimu College and Kenya, to explain my research study in considerable detail, and to clarify any

question(s) the lecturers had concerning the study. From many *"informative"* talks and chance meetings, I gleaned information, and gained insight into issues and concerns that were relevant to my study. For example, the fact that the questionnaire "was not being understood" was crystal clear to me. What I was unable to determine was whether or not this inability to understand was genuine or an act of avoidance or resistance. I asked myself whether I had really established and maintained rapport or wondered if our interactions had been superficial. Had I really encouraged risk-taking in the participants, which would in turn nurture ***"sufficient"*** trust to gather data I was looking for? People need to trust and have confidence in one another enough to talk about their work, release certain kinds of information and make it public so that it can be understood by others (Glesne, 1998; Janesick, 2000). This did not seem to come easily for me. In everyday lives we speak differently to diverse audiences. We communicate best by choosing the way of speaking that is informed by the particularity and uniqueness of whom we are speaking to and with (hooks, 1994). In keeping with this spirit, I thought I had changed my "voice" and shifted my role with each situation and person I interacted with. I used language and demeanor in ways that I thought spoke to specific contexts, as well as my desire to communicate with a diverse audience, but it is possible I missed the mark? Ways of communication and establishing rapport are issues closely tied to other broader issues of culture, age, gender, educational, and socio-economic status differences and, although not all of them may not be amenable to manipulation, simple things such as my appearance, behavior, dress code, and the language/speech can affect rapport (Hammersley & Atkinson, 1995). What exactly made it difficult for me to negotiate this research terrain? What was being said or left unsaid about my research? What about my presence in that space and at that time? I think maybe one day I will find answers to these questions – after I graduate.

But what I come away with from this research experience is that "rapport is a necessary but not sufficient condition for obtaining good data; researchers partake in the opportunities it enables by virtue of other skills" and "it is something that is continually being negotiated between researcher and researched and can, at any time, be rejected by research participants" (Glesne, 1998, p. 96). In formulation, rapport is truly achieved when the participants come to share the same goals, at least to some extent, when both "informant" and researcher come to a point when each is committed to help the other achieve his or her goal, when the participant provides information for the study, and when the researcher approaches the interaction in a respectful and thoughtful way that allows the informant to tell his or her story (Dewalt & Dewalt, 2001). Although I do not have concrete answers to such aspects of my study, I think sentiments such as these reinforce my reasons for investigating lecturers' perspectives on their knowledge, experiences, and perceptions concerning comprehension instruction across the disciplines. I think it is time to trouble spaces and comfort zones if people have to open up and share professional experiences.

I acknowledge that part of the baggage we take into a research field is our personal version of the meaning of questions, including our convictions about what can and cannot properly be brought up in conversation. I cannot rule out the possibility that my efforts at image-building may have had the exact opposite to what I intended, and that maybe something I did or did not get in the way of efforts to study the ways of others. All in all, I think that I successfully negotiated the insider/outsider dichotomy.

CHAPTER 5

LECTURER PERSPECTIVES

Two of three research questions focused on the perspectives of lecturers at Elimu College. One question focused on the English Language and Communication Skills lecturers' knowledge and practices with regard to: (a) general reading comprehension instruction, and (b) content area reading comprehension instruction. The second question focused on content area lecturers' knowledge and teaching practices with regard to content area reading instruction. In this chapter I use interview, observation, and questionnaire data to report what I learned about lecturers' perspectives. I organize the chapter around five main headings: (1) teaching; (2) general comprehension; (3) reading to learn in the content areas; (4) student readership; and (5) student preparedness to teach reading to learn upon their graduation. Please note that **CAL** refers to Content Area Lecturer. **ELCS** refers to English Language and Communication Skills. I have **CAL1**, **CAL2**, **CAL3, ELCS4**, **ELCS5**, and **ELCS6** used as pseudonyms for six participants interviewed. All other participants who responded to the lecturer and administrator questionnaire have the identifier **L** that refers to Lecturer. You will find reference to, for instance, **L2**, **L 11**, **L15**, and so on.

Teaching

In the early stages of the interview with each of the six lecturers, I asked them to describe their teaching experiences. From their responses, I gathered information regarding their beliefs about teaching and how they think teaching should be conducted (i.e., what might be done

before, during, and after teaching). I discuss their ideas under two sub-headings: planning for lessons and method(s) of instruction.

Planning for Lessons

Lesson planning was an aspect of teaching that two lecturers, **CAL2** and **CAL3**, emphasized. **CAL2** discussed the importance of planning lessons before teaching. He stated that planning lessons before teaching is mandatory to guide a teacher at each step of the lesson. In fact he was one of only two out of six lecturers who gave me a lesson plan when I observed his class. **CAL2** noted that in a lesson plan there is a remarks section (a requirement by Elimu College), a place where one writes reflections on how each lesson progresses. **CAL2** said this section is extremely useful for future planning and improvement of instruction. He opined, therefore, that he could not understand why anyone would "preach what they did not practice" by not planning their lessons (this was said in reference to the requirement that all pre-service teachers prepare lesson plans during student placement. A student automatically fails student teaching if s/he does not have a lesson plan).

CAL3 discussed lesson planning from a different vantage point by focusing on situations, which 'force' teachers to plan lessons. She said,

> Nobody prepares. Only teaching practice students prepare lesson plans. The only time you find a teacher writing a lesson plan is when one wants to be promoted and an inspector may pop in at any time. Those are the ones who will prepare lesson plans.

CAL3's observation indicated that there may be teachers who only plan their lesson during student placement and for promotion. Also, **CAL3** claimed Elimu College was aware of, and was addressing, the issue of lesson planning through professional development. Her assertions, if true, raise questions related to teacher effectiveness; there may be some lecturers who do not plan their lessons. These, then, might be the teachers **CAL2** refers to as 'preaching what they do

not practice." However, further inquiry regarding lesson planning or the lack of, at Elimu College might unearth more detailed information.

Method(s) of Instruction

All the lecturers interviewed talked about methods of instruction in different ways; some focusing on it in a more detailed manner and some mentioning it only tangentially. In this section I highlight **ELCS4**'s and **CAL2**'s views to illustrate the difference in lecturers' beliefs about instruction.

ELCS4 made a general assertion about the predominant use of the lecture method by lecturers at Elimu College to prepare pre-service teachers. She said,

> It is just the teacher who speaks, speaks, speaks. I think that is another problem. Here (*at Elimu College*) a teacher SPEAKS (*speaks was said with emphasis*) almost throughout. The student, if any, maybe just once.

ELCS4 thought transmission mode of teaching provides limited opportunities for student participation. She discussed what she does differently in her classes to move away from this practice. She said,

> I use several methods. I put them (*students*) into groups, mostly groups of threes. So they discuss, and they learn from one another. Now I have got groups, they keep on alternating. The person who wrote today, then the next person will write. Then after that also, when I have time I give them individual work. And group work also, let me confess to you, it is easier to mark given the kind of work that I have. When I have, how many are those, twenty something (*students*), I don't know when I would finish marking. But when I have ten (*scripts*), it is easier to mark, then we discuss and I have discovered that helps them a lot rather than not giving them anything at all because of numbers. So that is the other alternative. They are too many, when will you ever mark what they done? So when you do that, that even enables me to give them much work than when you give individual work, then occasionally we give individual work.

Whereas **ELCS4** claimed that using group work is a strategy that enables students to discuss and learn from each other, I witnessed that learning when I observed another lecturer, **ELCS6,** teaching. She divided her class into groups and asked them to apply what they had

learned that day by answering a question from a past exam paper. I joined one of the groups and witnessed students negotiate with each other and the text: from what the question required of them to what information to include in their answer. **ELCS4** mentioned other advantages of groups: work being easier for her to mark and provide feedback to students as well as allowing her to give students more assignments. Also noteworthy is the fact that groups and roles within groups were not permanent but rather were shifted around. For instance, if one student assumed the responsibility of taking notes in one session, another student might do the writing in another session. **ELCS4** also recognized the place of group- and individual-based assignments (or assessments) and when to use each of or both of them. **CAL2** discussed the ability for a teacher to model or demonstrate procedures, experiments, strategies, and skills to students. He referred to this as being "hands-on." He claimed that some lecturers were lacking in some of these essential components of an effective teacher, hence the need for professional development courses. When I observed **CAL2** teaching, the skills he mentions were reflected in his lesson. He gave very precise, clear, and unambiguous instructions (because students were supposed to write their schemes of work). I made specific observation about his use of instructional resources with students, which I thought was well orchestrated. I observed that he effectively coordinated the various teaching materials and coherently moved from one to the other bearing in mind he had 89 students! In short, whereas **ELCS4** believes that a multi-method approach to teaching (and more specifically group work) is important for actively involving students in the co-construction of knowledge, **CAL2** highlighted the ability to demonstrate skills and strategies (or being hands-on) as being more important.

Finally, all six lecturers interviewed shared a common concern - insufficient course hours dedicated to their area of specialization. For instance **ELCS4** claimed she met students only

twice a week (one hour per session) to teach English and communication skills. She stated that two hours were inadequate to cover all aspects of language that English and Communications Skills Department would like to see covered. She said, "My dear sister, in two hours (chuckle), TWO ('*two' said this with emphasis*) hours a week, what can you do?" Research on teacher preparation corroborates lecturers' concerns (Draper et al., 2005). It was thus not surprising for me that some lecturers claimed to have no time to engage in instructional activities that do not directly address their goal of preparing teachers to teach their subject areas. I understand their concern to find ways to ensure syllabi coverage within those time confines. **CAL1**, for instance, noted why the lecture method was more effective in cutting down time and ensuring more ground in subject matter is covered. I surmise that such a situation is likely to limit any lecturer's interest in experimenting with new ideas such as content literacy even when they may be aware of benefits that might accrue from paying attention to literacy. Skepticism about how literacy can help students better comprehend science texts would thus not be uncommon.

General Comprehension

One of the questions I asked lecturers was for a description of what they understood by the term comprehension because comprehension is of importance in all learning as emphasized by **ELCS6** who said,

> For them (*students*) to understand the material that they are being taught. Like if they are being taught chemistry, if they don't have the comprehension skills, then they will not understand what they are being taught and therefore, they will not be able to understand that particular subject that they are being taught. So they need to have the comprehension skills so that even as they read their texts they are able to know okay this one is an important point, this one is not, using the skills that we have given them like note-taking and summary. And so that even when they go out there, they are able to teach it (*content*). Coz you can't teach what you have not understood.

I wanted to know how lecturers viewed comprehension as it pertained to teaching before asking about comprehension and reading to learn in the content areas. In their responses, lecturers provided their own working definitions of comprehension and mentioned also that the language used and the way you communicate information can either facilitate or retard comprehension. In this section therefore, I discuss general comprehension under three sub-headings: definition of comprehension; language of instruction; and communication skills.

Definition of Comprehension

Lecturers who responded to the questionnaire provided definitions of comprehension that emphasize "understanding" such as: *"Understanding and interpretation of content" (**L2)*** or *"understanding what is explained to you" (**L9**)* or "*Understanding simple or complex situations and problems such that one gets the methods of solving/talking about them" (**CAL3***) or "*Ability to receive information, and understanding it and personalizing information" (**ELCS6).***

To illustrate what the six lecturers interviewed thought about general comprehension, I provide descriptions of comprehension from **CAL3**, **CAL1**, and **CAL2**. **CAL3** said, "It is good to understand what is happening (*in a text*) instead of memorizing." She used the terms "making sense" to imply going deeper than mere memorization of facts. **CAL1** said,

> It is the understanding of …the concepts… the principles underlying any topic that you are dealing with… It is the basis of any good mathematician. One has to understand what the underlying principles in any maths topic that one wants the students to understand.

CAL1 then mused over this question, "Without understanding what you are doing [*during reading*] in any topic, really, what are you doing?" **CAL2** defined comprehension as, "The ability to understand, grasp, the content; the meaning of the content we are doing or topic." His introduced two terms 'grasp' and 'internalize' to describe the comprehension process. Grasping means the initial understanding of something while internalizing means committing knowledge

to long-term memory. **CAL1**, **CAL2**, and **CAL3** viewed comprehension as synonymous to understanding although **CAL 2** added to the mix two other terms: grasping and internalizing. **CAL2** pondered further about comprehension by asking rhetorically:

> Do students grasp or understand or internalize the content we give them? Do they do it easily, bearing in mind that they have got pre-requisite knowledge of the same, from their 'O' level schools? So the question is, if you are teaching a topic like fluid dynamics, now, do students understand initially (*right from the beginning*) what that topic is all about?

In his definition, **CAL2** included students' prior knowledge - which he referred to as pre-requisite knowledge. By asking questions such as, "Do they (*students*) do it (*comprehend*) easily, bearing in mind that they have got pre-requisite knowledge of the same, from their 'O' level schools?" he was getting at reader factors that might facilitate or impede comprehension. **CAL2**'s description of comprehension seemed closely aligned to cognitive psychology concepts of adaptation and assimilation or, in reading education, to the concept of schema theory, which describes how knowledge is represented and how new knowledge is integrated with a network of prior knowledge (Harris & Hodges, 1995). **CAL2** emphasized also "explicit explanation" which is important in teaching comprehension. He said,

> Comprehension goes with explanation. If I don't understand a topic fluid dynamics, I need further explanation. I may know fluid, I may know the word dynamics, but when they are put together, it may give another meaning, which requires somebody to explain first, so that my comprehension is even internalized. That is an area we need to address.

In essence, **CAL2** stated the need to build background knowledge and scaffold instruction to enhance comprehension in line with what McKeown et al. (1992) suggest. This might include providing direct and/or explicit instruction to enhance comprehension. Among the more important features of direct/explicit instruction are modeling, gradually turning over the responsibility of learning to students, and ultimately fading out of the picture so that students apply the strategies independently (Pearson & Fielding, 1991).

Lecturers were surveyed on how they assessed students' general comprehension. Responses indicated they did this though questions - oral and written – during class sessions or as homework, assignments, quizzes, and tests. **L8** claimed that when she listened to students' arguments on a given concept, she could tell they had comprehended it. She said that marking their scripts further "tells how they interpret what they read." **L8** and **CAL2** stated it was typical to assess comprehension through questions and other probes during instruction. **ELCS6** claimed she uses higher order questions requiring analysis and synthesis of information. **L8** pointed out the importance of allowing student to ask questions, although she did not elaborate further why that was important. In terms of written assignments, **CAL2** claimed he periodically asked his students to come up with projects. **CAL3** stated that as testament students were well prepared, they had a competitive edge in employment once they graduated from Elimu College. According to **L3,** the fact that graduates of Elimu College are able to teach is proof they have comprehended information passed to them while they were preparing to be teachers.

In sum, lecturers provided definitions and descriptions of comprehension that emphasized these key terms: Receiving, grasping, making sense, understanding, internalizing, interpreting, and personalizing of information, important points, ideas, knowledge or subject matter taught, explained, or read well enough to be able to answer questions (oral and written) and/or reproduce and apply it. Comprehension was discussed as a process existing on different levels through use of several key terms. Roughly, starting from the lowest to the highest levels comprehension would be: Memorizing (not favored); grasping (the initial understanding); digesting/making sense (mulling over information in the short-term memory); and internalizing (committing the information to long term memory). I thought terms capture comprehension as a process of construction of a supportable understanding of a text (Neufeld, 2005/2006). They reflects also

the fact that comprehension is an active, intentional thinking process through which the reader constructs meaning. **CAL3**, claimed comprehension is the same as understanding, and not memorizing. When **CAL2** mentioned scaffolding instruction and helping students build connections between old knowledge and new knowledge through interactions with content. How comprehension is assessed was also discussed.

Language of Instruction

There were varied viewpoints about the language to be used for the teaching/learning process. These views will be discussed from two vantage points: (1) what lecturers were teaching the students to do once they graduate and take up teaching jobs; and (2) what the lecturers themselves did to teach.

Three participants from the English and Communication Skills department (**ELCS4**, **ELCS5**, and **ELCS6**) felt students should be encouraged to use English at all times. **ELCS4**, for instance, emphasized the indispensable role of English as the language of instruction in the curriculum in Kenya. She said, "It is the English that they are going to use to teach that maths, or chemistry, or biology…You cannot divorce language from any of those subjects." According to her, a good command of English language is imperative for effective teaching. She said,

> The use of language and uhm…being science teachers again for them to make their teaching easier, they have to restructure their sentences to suit whatever it is that they are teaching. Those are some of the things that we tell them. They have to be conscious of the use of language, the use of vocabulary, the words they use. They have to be conscious of the way they speak those words and more so the way they present themselves, you know, to the students so that the message is received. You know now, the way you go to teach and the way students look at you makes all the difference…

ELCS4 claimed that if students were comfortable communicating in English, it would make their teaching easier. This is because it would be easier for them to rephrase sentences and questions and to choose words carefully in order to communicate more effectively. She alluded

to science as a unique discipline (with specialized terminologies and vocabulary), which needs to be articulated clearly for students to understand. **ELCS4**'s assertions may imply that she emphasized eloquence in the English language while teaching.

One content area lecturer, **CAL3**, concurred with the stand on English language use espoused by English and Communication Skills lecturers. She said,

> They should use the medium of instruction, the official medium of instruction (*English*). It is not, it (*other languages*) should be discouraged. No. it interferes with the answer, when it comes to answering questions. It interferes with their expressions because they have to answer in English so I'd rather they discussed it in the right language.

CAL3 thought code-switching and code-mixing affect academic achievement as students are unable to answer or express themselves well in examinations. She said further, "What they write you can't even read." She concluded,

> As long as English is the medium of instruction in school, students must be encouraged to speak only in English when in the classroom area. The fact that they communicate with each other in Swahili (National Language), it will weaken their comprehension of English. It must be remembered that English is a foreign language – one needs all time to practice it.

CAL3's remarks might imply that she encouraged and provided many opportunities for her students to practice speaking in English. She may also have discouraged her students from using other languages.

On the other hand, two other content area lecturers did not seem to mind the language used for the teaching/learning process. For example, **CAL1** supported code-switching/mixing - use of any and all languages to best facilitate understanding and learning.He said,

> I have no problem. Even vernacular. If I can teach mathematics in vernacular and they get it. Because you know maths has been a problem. We have a problem in mathematics because mathematics first of all it has its own language…and unless you understand that language in mathematics, it becomes very difficult to get a concept, to understand. So whichever method you can use, whether they use English or… We are encouraging our

> students to communicate well in English BUT sometimes we realize that even when they use that Kiswahili and understand the mathematics, I think I have no problem.

In other words, **CAL1** allowed use of any language, "even vernacular" for teaching so that things "stick better" or for students to understand. To support his reasoning, **CAL1**said,

> If you want to know whether someone has understood a concept, let that person explain to their grandmother who has never gone to school in that Kisii or Kikamba…If s/he explains until that grandma understands, then s/he has understood what they are talking about.

This means, in **CAL1**'s opinion, that understanding includes the ability to reproduce information even in another language. I asked **CAL1** the implications of code-switching and code-mixing when students were required to use only English in their examinations. **CAL1** said,

> So that is a dilemma because, eh, if a student does not understand that, the English that is being put across (laughter), then there is also a problem. So there should be a limit to the use of other languages…Because the exam will be done in English there should be a limit…There are particular topics where injecting a word in another language in Kiswahili or even in mother tongue, especially where the community is the same (homogenous) might help but not all the time…Yeah, there are topics where you have to you can do it in English because there is no contradiction in the mother tongue understanding and the English understanding…There are a few times. It is just as I said in particular topics. You might find that a student might THROW a Kiswahili word but mainly [sic], it is English.

From the above quote, **CAL1** acknowledged the importance of using the English language given it is the language used in examinations. He maintained however that it was not "always harmful" to use more than one language for instruction and student learning.

In sum, findings from the six lecturers interviewed indicate that there is a dilemma in terms of which language(s) to use for the teaching/learning process. On the one hand, there is need for students to be comfortable in expressing themselves in the language they will use for instruction upon graduation. On the other hand, there is need to help students better understand content using any and all means possible, including code-mixing and code-switching.

Interestingly, in nearly all the interviews and interactions with participants, I was (and I assume participants may have been) comfortable talking back and forth using both English and Kiswahili. All in all, there is concern about modeling proper language use, who should or should not code-switch and code-mix, and the effect of multiple language use on students' academic achievement. I hasten to point out that these issues are not easy to resolve but perhaps further inquiry might shed more light on what is best, especially for students.

Communication Skills

There appeared to be consensus among the six participants interviewed regarding the importance of excellent oral and written communication skills for effective teaching and understanding of all subject areas. For instance, **CAL2** emphasized communication skills as an important element – calling it the backbone of teaching. In addition he said, "Science is not difficult. It is the way you communicate." He noted far-reaching consequences when there is communication break-down between lecturers and students. He said,

> Inability to communicate leads to frustration. And the frustration is two-fold. The teacher labors and also gets frustrated along the way to pass on information. The student labors to understand what the teacher is saying and then they reach a deadlock. And the deadlock is normally manifested in the exam - when the students get zero. It is made worse if you make the subject optional. For example, they will all drop the subjects that are difficult. That's why many people are running away from science.

In other words, **CAL2** identified lecturer and student frustration in the classroom as linked, in part, to poor communication. He explained also why students' interest and achievement in maths and science declines over time due, in part, to poor transmission of subject matter. I did not pursue the issue of frustration further but it would be interesting to explore, for instance, sources of frustration for lecturers and students in relation to comprehension of expository texts. **CAL2**'s views can be summed up thus: good communication skills enable a teacher to actively engage

and keep students interested in the learning process and the subject as well help them comprehend and excel academically.

CAL2's views on communication concurred with those of English and Communication Skills lecturers. **ELCS4**, for instance, said,

> If students are going to do well in their subjects they must also do well in the communication skills, in the spoken language. Because sometimes what you say is not what people understand or is not even what you mean. So we need to reach a place where they will know that for their subjects to be taught very well, the students must be very efficient in the communication, in the way they handle, in the way they pronounce, in the way they use stress and intonation, and all those things, vocabulary.

Like **CAL2, ELCS4** linked effective communication to academic achievement. She laid more emphasis on oral communication skills – proper articulation of words using the right stress and intonation for effective communication. **ELCS4**'s views on the intimate relationship between oral communication skills and the ability to teach were in agreement with those of **ELCS6,** who said,

> You know these students; we are training them to become teachers. And because of that, we'd want them, when they go to teach, they are able to communicate with their students. If they can't be able to communicate their ideas to the students then I don't think they will be able to teach them (*their future students*).

I would like to point out that the emphasis on oral communication may have its roots in oral literacy and oracy - an important and respected art in Kenya. Emphasis on orality might also be better understood in light of methods of teaching in many Kenyan institutions. With few instructional resources available, it is not unusual to find teachers being sole sources of information. One has to not only be skilled in reading and understanding information from texts, but also in delivering that information orally.

Although excellent communication skills and a good command of language are relevant for teaching, **ELCS4** claimed that many students did not possess those skills and were thus unable to express themselves eloquently. She said,

> The only area letting them (*students*) down is their communications skills. So you can imagine that has always been the cry…Because they are not comfortable in language…So when it comes to expressing themselves, they find a problem.

ELCS6 claimed that students' challenges in communication skills was the main reason why the English and Communication Skills department was there at Elimu College. She expounded further on the department's chief responsibility by stating that when students report to Elimu College, the first few lessons are set aside to assess their (*referring to oral*) communication skills. She said,

> And immediately they join (*enroll at Elimu College*), we usually try to probe them and see their, you know, standard of fluency in English, we also try to see how well they can communicate in English. So what we first do is we give them an hour or two where we tell them to talk about themselves or anything of interest to them. And of course, as they are talking, as they are giving their experiences we are able to see the level of English that they have when they come here. And we give that about two hours. Every student is able to talk and we are able to gauge and see their level and we are also able to identify the students who are weak in the language and we prepare remedial lessons.

ELCS6 stated also that following a needs assessment of students' communication skills the department decides on what the next course of action should be. She mentioned that subsequent lessons are tailored to addressing students' communication skills and other aspects of English language.

ELCS5 concurred with **ELCS4** and **ELCS6** by stating that communication skills is the cornerstone of all topics covered in English department. She reiterated that the department was there to help students improve their (oral and written) communication skills. She claimed that at the end of each lesson she asks herself whether or not that day's lesson has helped her students

become better communicators – both orally (when they will be teaching their students) and in writing (when they will be contacting other stakeholders in education). She said,

> So I want them to be able to speak to the students and to be understood. And as I have mentioned to you before, they have those, that, the baggage that they bring along (*referring to mother tongue interference/influence on speech in a second language*). That is what I am mostly interested in…If they had more time, we would be able to give them more practice in spoken English. Give them more time in using the language, many of our students use Kiswahili as a means of communication even amongst themselves. So maybe more time and more practice would encourage them to use English which is the medium of instruction in high schools.

ELCS5 acknowledged also that the Ministry of Education, Science, and Technology (MOEST) recognizes the importance of a good command of the English language by all teachers. **ELCS5** said,

> The Ministry is into encouraging the science student, the science teacher to be better equipped in the language, you know. See, without good language then there is no communication. If you can't communicate then you can't teach.

ELCS5 stated that her department taught writing of: letters, reports, minutes, memos, and circulars. She explained why emphasis was placed on this specialized kind of writing. She said,

> Because the students we are training here are going to work in schools, even as administrators in those schools… So we think that our students are going to use all these skills in teaching and even in their administrative work that they are going to do in the different schools.

When I observed **ELCS5**'s class, I witnessed how she prepared students to write an official letter. Noteworthy is how she orchestrated all teaching resources - from lesson notes, class text, student handouts, and questions from past papers. I witnessed that she consciously focused their efforts on sharpening students' oral and written communication skills.

ELCS4 advanced and discussed a number of options her department was pursuing to: (a) enhance students' communication skills and language use and, (b) to enlist the help of other departments. In terms of helping students to be better speakers, **ELCS4** discussed three strategies the department used: (a) mini-talks; (b) phonetics; and (c) micro-teaching.

Mini-talks are sessions designed to sharpen students' communication skills. The students research on any topic of their choice, write about it, and spend about 10 minutes presenting their findings to their class(es). They receive feedback from their peers and lecturer on how they can improve in their communication. **ELCS4** claimed a whole term has been set aside for mini-talks due to their role in improving communication.

On mini-talks **ELCS4** said,

> That is why we have mini-talks, we have given more emphasis to mini-talks to give students chance to speak and express themselves and have that confidence, you know, that personality, to stand in front of classes. You will be surprised to, we come up with people who have never spoken before. Previous we never used to have that. A system where you just teach (*ELCS4 says teach with emphasis*), alright and then the students go out to teach (*during student placement or after graduation*).

ELCS4 claimed using mini-talks helped single out students who have never addressed people and helped them become confident public speakers before they graduated and started their teaching careers. This was unlike in the past where students ended up teaching without prior preparation in public speaking. Still on mini-talks **ELCS6** said,

> We expose them to mini-talks and tell them how they can become good speakers. How they can make good speeches. So we guide them on how they can be able to talk in front of other people, how they can be able to communicate with other people effectively and we give them guidelines on how they can do that and then they do practically in class (*meaning getting opportunities to present in front of an audience*).

ELCS6 claimed feedback was very important for improving communication skills. For that reason, she encouraged peer feedback in addition to her guidance and advice to students. **ELCS4** claimed the department was experiencing success because of mini-talks and other activities aimed at improving students' communication skills. I did not dwell on mini-talks beyond this point but further research might inquire into their effectiveness on communication skills.

ELCS4 discussed phonetics (which, in the simplest terms, is learning about all the sounds in the English language, and how and where they are produced) to foster students' pronunciation and proper articulation of English words – given the status of English as the language of instruction in Kenya. **ELCS6** concurred by saying,

> We also teach them phonetics. How to pronounce words… properly and we teach them uhm… the basics of how to write this, how to, we teach them how to pronounce the words, we give them notes on how to do it, and we also give them exercises, and then we have a language lab where we take them and then they practice the sounds that we have taught them.

ELCS6 stated the language laboratory was established to help diagnose students' problems with pronunciations. She mentioned some of the more common pronunciation problems:

> Mainly we have students who have problems with /l/ and /r/ from the central areas of Kenya. We have those who have problems of /p/ and /b/ from the North Rift. So we identify quite a number of problems.

Lecturers especially those who have studied English and linguistics in Kenyan universities often have the specialized knowledge of what pronunciation issues exist depending on mother tongue interference (from the more than 42 different languages in Kenya) and what can be done or minimize and/or eliminate those interferences. For instance, **ELCS5** said,

> Over the years, twenty or so now, I have had to deal with students from literally every part of Kenya. So the training (*university preparation*) has helped me to be able to identify those problems and know how to deal with them specifically.

ELCS6 stated that her department tries to assist students as much as they can and that through the language laboratory students practice and perfect their speech and pronunciation. There are tapes available where they can listen to models of effective communication and pronunciation. They have opportunities to tape their own speeches and self-correct. In this regard **ELCS6** said, "We encourage them to take it upon themselves also to try and correct those problems on their own and when they are not able to do it we assist them. And that is why we teach them."

ELCS6 explained further why her department placed emphasis on pronunciation and proper articulation of words. She said,

> You know a teacher is a role model. If they are going to be teachers in class, their English has to be Standard English. They have to be able to pronounce their words well, of course even when they, the way they pronounce them is the way their students will pronounce them. So, even as they teach their physics, their chemistry, they are also teaching them English in a way. So that if they make mistakes in their tenses, if they make mistakes in their pronunciations, their students will just pick up that. The students believe teachers know everything and they are always doing the right thing so that I why we really emphasize on the communication skills.

ELCS4 commented that the department can know how successful they have been in inculcating, in students, good communication skills when students conduct micro-teaching and when they receive feedback on students who are on teaching practice (student placement). She said,

> And you can only tell that by, you know, from teaching. Because in micro-teaching you are able to tell the students that are doing well. And you are also able to tell the students that have learned nothing because if a student has done the two years and are doing micro-teaching and they are not able to stand and speak or make a correct sentence, then there is something wrong. So during the micro-teaching, I think that is when we get the most feedback. We are noticing for the first time – this is the time the student is teaching. So you see now when we have those mistakes, when we discover those mistakes we are able to help them and expose them so that by the time they are going out on teaching practice at least they are better prepared. But we encourage them, we still encourage them. We still have a long way to go (laughter). And then finally when they go out to teach. When the tutors come out, especially the external assessors come and give us the report, then we are able to tell that we did a good job or a bad job.

In sum, the ability to communicate well was noted as indispensable for pre-service teachers at Elimu College. For that reason, oral and written communication skills are the fulcrum around which all topics in the English and Communications Skills department gravitate. **ELCS4**, **ELCS5**, and **ELCS6** discussed needs assessment and remediation measures the department takes to ensure student graduate with better interpersonal and communication skills. They mentioned how mini-talks, phonetics, and micro-teaching and the language laboratory were platforms

through which students practiced and honed their communication skills. Learning activities that enhance communication skills ensure students learn from each other as well as from lecturers. Other efforts by the English and Communication Skills department are directed at enlisting the help of other departments in helping students enhance their communication skills. Ideas suggested to improve communication skills included providing opportunities to practice public speaking and learning from peers, a notion in line with constructivist perspectives.

Reading to Learn in the Content Areas

I sought lecturer perspectives on their knowledge and teaching practices concerning reading to learn in the content areas. This is because the ability to read to learn is critical, especially for maths and science pre-service teachers. They need to read and understand their subjects well enough to do well in their examinations and also be able to teach those subjects upon graduation. In this section, I present findings under the following sub-headings: (1) importance of reading to learn in the content areas; (2) language used in content area texts; (3) difficulty levels of content area texts; (4) availability of content area texts; (5) reading to learn from required reading in maths; (6) reading to learn from required reading in physics; (7) reading to learn from required reading in biology; and (8) reading to learn from required reading in English language arts.

Importance of Reading to Learn in the Content Areas

The lecturer and administrator questionnaire included a question on the importance of reading to learn in the content areas. Lecturers' responses collectively indicated that helping students read to learn was beneficial for them to: follow their lectures keenly and understand scientific concepts and operations in their subjects **(L3)**; acquire higher level thinking skills, and when they are answering questions, check whether or not their answers are correct (**CAL2**); be

innovative in the way they revise and answer questions in continuous assessment tests and examinations **(L4)**. **CAL3** stated that when students "comprehend, they can answer questions even without referring back to texts they have read and still pass all subjects very well;" students can even set questions for themselves and monitor their progress **(L7)**; apply knowledge acquired (through reading) to diverse situations and contexts **(CAL3)**. For instance, students could apply scientific concepts and what they learn to understand and solve their personal and/or other people's health problems **(L3)** as well as solve problem sets in textbooks in addition to lecture assignments **(CAL1)**. **L7** stated that students who comprehended information through diverse texts, even on the same topic, were likely to improve their teaching methodology (implying be effective teachers upon graduation). Such teachers would thus be competent to teach school subjects at any level of the school system they will be assigned to teach **(L2)**.

Language Issues in Content Area Texts

CAL1 was one of two participants (the other being **CAL3**) who discussed at length the language of content area subjects and texts. **CAL1** noted that math "has its own language." I asked him to elaborate what he meant by that. This is how our conversation went.

> **Hellen:** You talked about maths having its own language. Would you elaborate further what you meant by that?
> **CAL1:** You see uhm… mathematics is a discipline which has its own language. There are things that an English teacher might think, 'That is very poor language.' But to a mathematician, uhm… they understand what they are talking about. For example if you came to see my maths lesson, I could write things like those (*writes a symbol down*). You see, someone will say that is 'A' inverted. But it has a meaning, you know.
> **Hellen:** I even don't know what that is (laughter).
> **CAL1:** Yeah. See? That is why I am saying that we have also borrowed richly from Greek when we are doing trigonometry, the angles and whatever, we use Greek letters like theta, beta, lambda, alpha, you know. That is why I am saying, the language (laughter), it has a language of its own and its very important for whoever is teaching mathematics to understand that one and also to make sure that the students understand that language.

This excerpt illustrates **CAL1**'s views of the uniqueness of maths as a discipline with specialized language and discourse. He offered that lecturers must, therefore,not only "understand underlying principles and concepts to teach students to grasp" but also the mathematical language which might involve familiarizing oneself with origins or roots of terms such as those from the Greek language.

NCTM (1989) guidelines and the research on language learning point out that mathematics discourse and syntactical structures have a number of features that make it difficult for students, especially English language learners, to gauge meaning. These include the use of symbols and technical language, and the lack of redundancy or paraphrase to assist in understanding. Statements and questions are often written in the passive (e.g., *ten (is) divided by two*), and there is no one-to-one correspondence between mathematical symbols and the words they represent. For example, if translated word for word, the algebraic expression *the number a is five less than the number b* might be recorded as $a = 5 - b$ rather than the correct translation, $a = b - 5$. In the example, *Five times a number is two more than ten times the number;* students must understand how key words relate to each other, that *a number* and *the number* refer to the same quantity (Corasaniti Dale & Cuevas, 1992). Corasaniti Dale and Cuevas state also that the language of mathematics includes vocabulary specific to the field, such as *equation* or *algebraic*, as well as everyday vocabulary that has different meanings when used in mathematical contexts, such as *positive* and *negative*, *table* and *irrational*. Strings of words, like *measure of central tendency* and *square root* create complex phrases with specific meanings. Mathematics operations can often be signaled by more than one word or phrase; for example, *add, plus, combine, sum,* and *increased by* all indicate addition.

From **CAL1**'s discussion on maths and the language of maths, teaching maths might be done in at least two ways: Teaching students to read the language of math symbols while also teaching them to read mathematics in English. I call this biliteracy and wish to recommend further exploration of content area reading in maths as biliteracy education. Such inquiry could benefit from teaching English to speakers of other languages (ESOL). His interview also raised questions concerning which language of instruction to use and the specialized language inherent in different disciplines, such as maths, and what teachers need to do in response to these challenges.

Difficulty Levels of Content Area Texts

Two participants, **ELCS6** and **CAL2**, discussed textual features and conceptual density of content area texts. I begin this section by noting **ELCS6**'s comments on the uniqueness of science subjects and how critical it is to understand and follow instructions especially in laboratory settings. She said,

> And even when they go to the labs to do their experiments, are they able to comprehend the instructions that they are given? Otherwise it can be very dangerous if they don't understand coz in the lab they deal with flammable uhm…substances and things like that. So they need to be, to really be able to comprehend what they are being asked to do.

While it is imperative that students comprehend content area texts, **CAL2** pointed out that the reality was grimmer because of difficulty levels of many content area texts which impede comprehension and reading to learn. Referring to a textbook supposed to be used by students at Elimu College he said,

> If you read some of the books, you may be amused. Look at this one (*reading from text*) there is a certain arbitrariness (*'arbitrariness' read with emphasis*) in specified kinetic energy. The word arbitrariness is a conc. (*meaning concentrated or pregnant with meaning*) word. A weak student in English who hated conc. words is put off. He will just say, 'This book, oh God!' Now, if I read that book, and I am a teacher, and with that English. It is the same one I will go and mention in Form One (*9th Grade*). Equation 8 is a book-keeping statement of energy. To Form Ones! So what is the end result? Physics is

> hated! Physics is hated! It is a difficult subject. It is the worst! That is why physics, nobody wants to hear about it. Because those are the statements our trainees will transfer (*to their students*).

CAL2 thought that difficult vocabulary drove students away from taking physics. He said further that if difficult vocabulary were omitted and replaced with simpler words, this would be more beneficial to students, especially 'weak' students (or struggling readers). Moreover, **CAL2** said,

> There must be a simple meaning of it (*difficult vocabulary*). Supposing instead of making it, using this word you say, there is a certain blah, blah, blah. Long. It will be a long sentence, but the book will be friendly. So when a student reads it in the library, he will want to borrow it. Because it is really fun. But I am giving just an example of the words that are used. This is a very conc. book. It is not easy. This is now a Form Four fellow who has come here with a very, he just barely passed English. And now these words appear severally. I can quote very many and you will hate this book. This book is never read by people. They don't like it. And I came to know why. There are many words (*leafing through the book some more*). There are many words. In fact, if you read through, you would just say, this one. The English is meant to, okay. Look at this. (*Reading portion*) we cannot associate a potential energy with a non-conservative force.

CAL2, drawing on his experience teaching students, pointed out why students never borrowed certain texts in his subject area. He referred to one textbook to further illustrate his point. He, too, confessed that he did not know some of the vocabulary in the text, yet he was supposed to use it for instruction. He said,

> This is a physics book. Listen the way it is saying (*re-reads*) equation 8 and 4 are essentially book-keeping statements about energy. I didn't do book-keeping. What is book-keeping? Madam, do you see? What is book-keeping? Now, a student in Physics will raise his hand. 'Sir, this equation is a book-keeping statement of energy. What is book-keeping?' Is the book friendly? So the student will skip it.

The question **CAL2** poses in the last line, "Is this book friendly?" is one that content area lecturers may want to ask of any text they use (given five other lecturers interviewed did not dwell on the issue of text difficulty). Armbruster (1984) uses the term "inconsiderate texts" to describe texts that are not friendly to readers. In fact I asked a subset of lecturers about what they

consider when choosing a text from which to make notes for their classes. Overall, they state that text features they consider are: (1) do texts cover various topics beyond the syllabus? (2) Do texts explain content and how concepts are applied in appropriate and easy to understand language - depending on targeted readers? (3) Are the texts reader- and gender- friendly? (4) Do the texts have appropriate illustrations and examples (problem sets and their solutions) on the subject to help the student to understand? (5) Are corresponding teacher/student guides (and CD where appropriate) available along with texts? (6) Are the texts from renowned publishers and/or recommended by the Kenya Institute of Education (KIE)? (7) If it is an article, is it from a from peer-reviewed research journal? One lecturer suggested that textbooks should conform to the curriculum and methodology (**CAL3**), a notion dissonant with suggestion that such texts cover topics beyond the syllabus. In short, from the list of things they consider, it appears that lecturers prefer considerate texts. The reality, however, was that some of the texts they have to use are not as user-friendly as they want theme to be, as exemplified by **CAL2**.

CAL2 stated that text difficulty was not something unique to Physics. It was evident also in the four subjects he had to take as an advanced level student (chemistry, physics, biology and maths). He said, “No! It runs across. If I brought a chemistry book, it would read the same. If I brought a biology book, it will be the same. Even mathematics.” Unfortunately, and as noted earlier, this issue did not feature in interviews with other lecturers. However, **CAL2** thought all content area lecturers have a huge task of explaining vocabulary to students and ensuring they teach key concepts, underlying principles, and equations. He said, “So here there are two things: you have the equation which is already difficult. Now you have this statement - to expound what it means - before now the student grasps the equation, to be able now to understand what it is.”

CAL2 added, “But if everything is abstract, both the equation, the English, the communication, you are tackling a very difficult thing. Are you seeing the whole thing?”

CAL2’s views raise a confluence of issues which collectively affect a reader’s ability to comprehend texts they encounter in the content areas. He noted the uniqueness of content area subjects – often abstract and with unique visual displays of information. His views concur with those of Britton (1987) who refers to stilted writing in content area texts while Barton et al (2002) refer to the conceptual density of math and science materials as things that retard comprehensibility of texts. **CAL2**’ suggestion that students should be helped to successfully negotiate difficult text is consistent with Anders and Guzzetti’s (1996) view that pre-service teachers can benefit when reading instruction is incorporated into their content area classes. Lederer (2000) points out that these benefits can be realized regardless of students’ ability levels.

CAL2 was of the opinion that science texts should be made more user-friendly. He said, “There should be a deliberate move to, sometimes, paraphrase those books. Uhm… look at the English used and bring it back to the level of understanding of the students. So if we got people who could look at that and write them in such a way that it is clear.” He gave an analogy of the bible which has been made simpler and more reader-friendly through paraphrasing. **CAL2** pointed out also how it was important to start “de-mystifying” science in the lower grades and that he was involved in a project to author children’s books and especially the language is which he called “problematic.” He said, “We want to give them a friendly book and make the teaching of science at primary level friendly.

CAL2’s opinion about scaffolding students’ understanding of texts they use is supported by research. For instance, McKeown et al (1992) emphasize the crucial role of the teacher in developing relevant background knowledge for a text, even when the text has been revised to be

clearer and more engaging to students. They conclude that "background knowledge is most useful if the text is coherent enough to allow the reader to see the connections between text information and previous knowledge so that the knowledge can be combined with the text information to create a meaningful representation" (p. 91). In addition, texts that clearly emphasize important points and support them with interesting details lead to improved comprehension (Wade, Schraw, Buxton, & Hayes, 1993).

It was unfortunate to note, from **CAL2**'s interview, that it is not always the case that students are helped to comprehend texts in their content areas. **CAL2** discussed how lecturers responded to students' reading needs to the point of killing students' enthusiasm and eagerness to learn. He claimed that if students do not receive the necessary and/or relevant support from lecturers, they get frustrated. Lecturers, too, become frustrated when they find out students are struggling to comprehend and ultimately running away from math and science subjects. **CAL2** used a hypothetical case scenario to illustrate his point by saying,

> For example, a student comes, a very innocent first year, and he comes with a problem from one of the texts and says, 'Sir, this problem I was trying to solve, I am unable. Could you help me and because you don't read that book because of lack of self-interest and commitment. What do you do? You tell the student, 'I am a bit busy, please see me tomorrow.' And the student innocently goes away and comes tomorrow. But you know what? He is told that the tutor is not in because today he has no lesson! He is not coming. And the student will always come and find your office locked. So the end result is that the student gives up and therefore the trust that the student had that you will be of help starts waning, starts reducing. And this goes over s long period of time and the student now wishes you away. You become nothing in terms of a resource person. So he will be left with the book, and he is there by himself. Now wonder when they come to second year, the complaints are many.

This excerpt, although hypothetical, raises an ethical issue regarding our responsibilities as teachers. Being available to guide students seems crucial to avoid two types of frustrations the students face: Academic frustration and social frustration (**CAL2** links text difficulty to academic frustration and social frustration to a lecturer' unavailability to offer advisement).

In short, survey findings indicated that some lecturers were aware of some of the textual features that make textbooks user-friendly and accessible. The lecturers surveyed indicate also that they used textbooks from renowned authors or those recommended by Kenya Institute of Education (KIE) the national curriculum developer. The reality, however and as exemplified by **CAL2**, is that not all texts lecturers use are as user-friendly as they should be. **CAL2** suggested the need for lecturers to device ways to help students successfully navigate difficult texts they will inevitably use.

Availability of Content Area Texts

There were varied perspectives among lecturers interviewed in relation to availability and accessibility of instructional materials and resources in their content areas. For example, **CAL1** claimed that there was a lack of relevant and up to date texts for teaching maths. He said,

> The textbooks are very few in the library both in the short loan and in the shelves… And this being a science college, the only college in Kenya, the books are not there. The library is so poor. [It] has no mathematics textbooks which are very relevant... The books are irrelevant in most cases… Some of them are outdated and they don't cover much. You might find one small topic in a textbook. The rest is not there.

CAL1 claimed the texts in the library were outdated and one needed "to refer to more than one text to get what one wants." **CAL1** suspected that other departments were experiencing similar challenges with texts when he said, "And I believe this is not only in maths. Even in other departments, there is a problem (*meaning a lack of instructional materials and resources*).

CAL2 and **CAL3,** on the other hand, claimed that Elimu College library has very good books. In terms of general textbook use, **CAL2** claimed that the physics library was 'fully stocked' with excellent books for students to use if only they knew how to successfully navigate them. He claimed also that he referred students to Elimu College library as well as encouraged them to use other libraries in town. **CAL3** stated that the library had good biology texts written

by authors from western countries. She said, “They (*textbooks*) are good. For example mine, we were given a BIG (‘*big’ said with emphasis*) donation by Hekima college. BIG VOLUMES, GOOD BOOKS (‘*big volumes, good books’ said with emphasis*). Real Biology. Not these ones written by authors in Kenya.” Besides she stated the biology department has its own library where students are allowed to check out books at any time, even in the middle of a lesson.

In maths department where there were few or inadequate instructional materials and resources, lecturers came up viable solutions. Students were given comprehensive notes to circumvent the book shortage problem. **CAL1** said, “The books are not there and that is why the tutors… give the students notes that are comprehensive.” I asked **CAL1** where the lecturers drew his notes from. He replied, “Every tutor has to look for their own notes” implying they use their own discretion in choosing and using textbooks. In addition, lecturers in **CAL1’s** department had spent a considerable amount of money to buy their own textbooks most of which are “from Britain and America” – implying they were written by authors from those countries.

CAL1 suggested that Elimu College sets aside more funds to purchase relevant texts. He said,

> I would wish Elimu College buys textbooks. That is the MAIN setback in this college… So I would wish Elimu College put some input, financial input into textbooks in this college. And the other bit is their budget allocation. We have a budget for each department. It is SO small…The departmental budget allocations are too small...So we would wish Elimu College really spends money and buys textbooks.

CAL1 suggested also that The Collge explores interlibrary borrowing, a “system where Elimu College has access to those libraries for their students.” He claimed also that he encouraged his students to make use of other libraries in the country such as The University of Nairobi library. He said,

> We could encourage students also using libraries in other institutions…This college being in Nairobi, they should be able to make use of the University of Nairobi, Kenyatta University, JKUAT, Strathmore, Daystar… Because they do maths in those colleges and they have very good books. The universities definitely have good books. So there should be a system where Elimu College has access to those libraries for their students.

ELCS6 suggested the need to buy more books so that students have opportunities to "go out there, read and be able to gauge how much they have understood." She mentioned the importance of involving students in conducting research as a way to improve their search and study skills as well as their comprehension. **ELCS6** said,

> We just, we equip the library with enough books so that we can tell them, okay, we are going to teach this topic during our next lesson. I would like you to go and read and research on this. And then they write them, and we go through and then we are able to see whether they were really able to pick what we wanted them to pick. Yeah, because I feel they are too dependent on our notes and sometimes I think it is not good. If they are going to further their education, they need to be able to do research on their own and to write on their own. And that, that will also show us how much they comprehend.

ELCS6 was of the opinion that coordinating with the library would be useful for students to be able to locate and use recommended books for research work. She emphasized also the need to offer proper guidance and more precise instruction to students if they were to refer to and use reading materials profitably. She said,

> I think maybe on our part also, maybe we have also not emphasized on that aspect of going to the library and…For me even if I tell them okay next time we are going to do this topic. I just say in passing – you can go to the library and check- but if we had those books in the library and then you tell the students okay we are going to start on the topic of letter writing. If you go to the shelf, you find these books under this shelf uhm… read, and make a few notes. I believe that when the students now come to class, even when you are teaching, your teaching will be more profitable to them because they already know what you are talking about and you won't need to take a lot of time on it.

ELCS6 suggested that lecturers be role-models by demonstrating that they, too, are readers. As a matter of fact she is the only participant who described herself as an avid reader and that right from an early age, she was drawn to books. She said, "I just loved reading. I

always had time for books." She made a suggestion to lecturers to demonstrate to their students how they read multiple texts and how they make notes that they share with their classes. She said,

> I believe that the tutor can go to the class and tell them that okay these ideas are from this text. And then because the texts are normally different, and you know, the tutor can make notes from all of them. So the tutor can tell them, don't just depend on one book. Coz for me, in order for me to come up with this information, I was able to read this and this and this. They all have different ideas and they have put them in different ways. And I believe if you read the three of them, you will in a better position to understand that topic unlike when you just read from one person.

ELCS6's suggestions concurred with those from the survey in which lecturers stated lecturers should be role models to students by reading texts and discussing the importance of ideas in those texts and reasons for reading diverse texts. One other suggestion from the survey was the need to timetable independent reading (or allocating student reading time).

ELCS6 offered that cross-referencing was particularly helpful not only for comprehension but also for determining accuracy of information which would in turn make readers more knowledgeable. She said,

> Because you find even, a writer can make mistakes. Maybe a factual mistake, or something, maybe the ideas and then maybe his ideas might not be easy to understand. But if a student reads like two or three texts, on the same topic, I believe they will have understood the ideas very well. And you know these are going to be teachers. Coz I think they will be able to become very good teachers.

ELCS6 provided an example to illustrate the importance of cross-referencing. She said,

> Coz sometimes we go for microteaching and you find that oh this student cannot, he can't understand what he is talking about. He is just off the topic completely. Maybe he just went to one text and maybe the writer did not explain that idea well. So he also can't explain it. Because he didn't understand it!

Findings from interviews indicate that whereas **CAL1** decried the lack of instructional materials and resources, **CAL2**, **CAL3**, claimed the materials and resources were available but

the students were not using them. Interestingly, **CAL2** stated they would use them if they "knew how." It would appear that availing texts is necessary but not sufficient for effective use. Instruction on how to successfully navigate texts, especially difficult ones, is an equally important component if students are to use available texts gainfully (McKeown, Beck, Sinatra, and Loxterman, 1992). This might require instruction on text structure and other textual features that aid comprehension, recall, and retention of information from texts. So whereas there were suggestions to stock all libraries at Elimu College with relevant and up to date textbooks, other resources might be set aside to address the nature of those texts and how to use them effectively.

Reading to Learn from Required Readings in Maths

I interviewed **CAL1** to find out what he and other members in his department did to help students read to learn from required readings in maths. **CAL1** stated that through lecture method, he and other lecturers in the department give out "comprehensive notes" to pre-service teachers. He provided three reasons why they give comprehensive notes: (1) to scaffold student understanding of content; (2) because of the notes' relevance now and in future; and (3) because of lack of relevant and up to date texts in maths. First, **CAL1** said it is the "only way for students to link" - meaning understand mathematics. In other words, giving students notes summarized from a variety of textbooks by mathematics lecturers was one strategy his department employed to ensure student understanding of key concepts and underlying principles. **CAL1** claimed that because Elimu College prepares teachers, it is paramount that they (students) "understand *properly* any topic they are doing." "Comprehension takes the first place" in the department and comprehensive notes are one way to ensure it occurs, and students comprehend. **CAL1** concluded thus, "so we give them good notes for the purposes of comprehension."

CAL1 claimed that the comprehensive notes given to the students were very helpful beyond Elimu College for those students who decided to pursue further studies. He said, "These are the same notes that they use when they go to the university." He said he had received positive feedback from students who say, "The notes you gave us, those are the notes we are riding high with because everything is there and we realize you did a good job (at Elimu College)" Since the students seemed to be benefiting from the comprehensive notes beyond Elimu College, perhaps this reinforced their continued issuance and use.

The fact that **CAL1** and members of the mathematics department dictate comprehensive notes requires that students are adept at listening comprehension and note-taking. It is assumed also that lecturers have excellent reading and writing skills and that students possess good listening and writing skills. These issues need further inquiry.

I asked **CAL1** other strategies he employed to help students read to learn. Below is an excerpt from the interview transcript to illustrate his response.

> **Hellen:** …So how do you help the students, apart from giving them notes, how else do you help them to understand the texts or the notes that you give them?
> **CAL1:** You know maths basically, one has to do practice.
> **Hellen:** Uh-huh…
> **CAL1:** Mathematics basically is practice. It is interest and practice. And these, since these are students who have been admitted in mathematics, obviously, the interest is there.
> **Hellen:** Uh-huh…
> **CAL1:** So the next thing is the practice. We give them past examination questions, examples, very good examples and a lot of exercises. And like me what I do in my classes, and this is a trademark for me. They know. But every student we have a problem-solving session. I give them assignment, we have a problem-solving session where every student must go to the chalkboard and solve a problem.
> **Hellen:** You do that in every lesson?
> **CAL1:** We spread it.
> **Hellen:** Over time?
> **CAL1:** Yeah. We have problem solving sessions.

From the excerpt, I identified two strategies: (a) Problem-solving; and (b) Practice. In our conversation during the interview he mentioned two other strategies: (a) Re-reading; and (b) Mixed-ability grouping for discussions.

Noteworthy from the interview was problem-solving, a strategy **CAL1** employed to encourage student participation and ensure underlying principles and key concepts were understood, retained, and applied. **CAL1** said each student took a turn solving a math problem on the chalkboard and was thus actively involved in hands-on activities. He claimed the problem-solving sessions encouraged alertness, interest, and learning from peers which in turn led to better understanding.

CAL1 opined that all students were encouraged to *"practice"* - meaning going over as many maths exercises as possible - to ensure they master the required content. The exercises were drawn from past examination questions and texts **CAL1** used for teaching maths. He said also that he provided 'good examples" of "maths problems" to facilitate student learning.

CAL1 acknowledged individual differences among his students and said he used mixed ability groups to meet their diverse and unique needs and to enhance learning of content. He said he did not assign students to these groups. The students were left to decide who would be in their groups. I provide another excerpt to illustrate **CAL1**'s thoughts on mixed ability grouping and student discussions.

> **CAL1:** It's a good thing when they work in small groups.
> **Hellen:** uhm…
> **CAL1**: And you know, when a student relates to the subject with another student, they understand better.
> **Hellen:** uhmm…
> **CAL1:** Because you see they may be afraid if I ask the teacher this, the tutor this question, they might think I am very foolish. But you know student to student, they are free. (Speaking in Kiswahili) Mtu aweza sema wee, bwana (Someone might say, hey man) I have not understood. Explain again. But a student would be hesitant to ask a tutor, 'I have not understood. Please explain again. I have not understood explain again.'

From the above excerpt, **CAL1** thought groupwork encouraged co-construction of knowledge among students which in turn led to more learning. He expressed the belief that students were more comfortable with each other and found it easier to interrupt each other to ask questions and/or seek clarification. The excerpt also exposes a gap, albeit implicitly, between students and lecturers and the maths content. This can be inferred when **CAL1** says the students "may be afraid" to ask the tutor or lecturer for fear of being thought "foolish." I, however, did not probe this issue further with **CAL1**.

I provide another excerpt below indicating the effectiveness of **CAL1**'s mixed-ability grouping strategy.

> **CAL1:** Yeah, you asked about whether, how do we know whether the group dynamics
> **Hellen:** I mean the effectiveness
> **CAL1:** Whether they are effective. You see, once you have told them to get into small groups, they do. Because they know first of all for their own survival (laughter) will depend on how they relate with the bright ones.
> **Hellen:** Uhm…
> **CAL1:** and you discover something good is happening, when, during now the problem-solving
> Hellen: Uhm…
> **CAL1:** You realize everybody is now able to solve questions. That you realize that the groups are working. The small groups are working.
> **Hellen:** Uhm…
> **CAL1:** because even the weak ones are able to go to the chalkboard and even solve those difficult questions

From the excerpt, **CAL1** claimed his students work together in the groups since cooperation is imperative for their "own survival." Mixed-ability grouping strategy appeared to be beneficial, especially to "weak students" and "how they relate with the bright ones." **CAL1** gauged the effectiveness of groupwork when "something good" happened and all students were able to solve even the most difficult questions. **CAL1** said he encouraged students to" use friends to go over work or contact tutors."

From a constructivist viewpoint, what **CAL1** self-reports as happening in his classroom exemplifies knowledge construction by all in the classroom as they interact, for instance, during problem-solving and groupwork sessions. His beliefs about teaching maths concur also with what is stipulated in the The National Council of Teachers of Mathematics (NCTM, 1989) guidelines which explicitly address the importance of orchestrating problem solving and other classroom discourse in a manner that encourages mathematical literacy (Buchanan and Helman, 1993) and interaction among students. The guidelines recommend that teachers pose questions and design tasks that engage students' thinking, and ask students to clarify and justify ideas orally and in writing (NCTM, 1989). Last but not least, research indicates that developing a multi-sensory, activity-centered mathematics curriculum is one of the ways to address learning style differences and support higher achievement in mathematics (Reyhner & Davison, 1993). **CAL1**'s self-reported findings indicate he has a multi-sensory and activity-centered approach to the way he teaches his classes. This was evident in the strategies he claimed he and other members of his department used to help students read to learn from maths texts.

Reading to Learn from Required Readings in Physics

I asked **CAL2** what comprehension strategies he employed to help students to better "grasp" and "internalize" key concepts and underlying principles in physics. He discussed two strategies: Focusing on learning points/areas of conflict and use of problem sets. **CAL2** defined learning points as

> Areas you feel they (*students*) may not have pre-requisite knowledge and you address those areas. Now, you use what they know to develop them to understand those learning points. So it would be good if you are going to teach a topic to look at the areas that the students have no pre-requisite knowledge and address them as learning points so that you expound more on them. Because if students know what fluid is, they know what dynamics is, you don't need now to go into it. Now you go straight away into what fluid dynamics is all about. Because they already know all these things. You don't have to define for them. You go straight away to bringing up the area of conflict.

He used the term pre-requisite knowledge analogous to the term prior knowledge or background knowledge. He claimed learning points were a realistic way of bridging the gap between students' prior knowledge and the new information they needed to learn. Expounding on the learning point implies scaffolding knowledge in such a way that learning occurs. **CAL2** opined that it was unfortunate that many teachers do not address those learning points so students end up not 'grasping.'

CAL2 stated that his department uses research-oriented problem sets. He claimed the answers are not available unless students "go and find them out" or conduct research. **CAL2** said this strategy "is good and has worked" for his department. He said, "As it were, it motivates or encourages them (*students*) to read widely. Some of the problem sets are so difficult that they cannot be answered by what has been taught to them (students) requiring that [they] read deeply." **CAL2** stated further, "Students have always come to us to ask questions, to borrow advanced books. When they realize they can't answer some of the problems, they complain." Noteworthy is **CAL2**'s interpretation of student complaints when he said,

> We deliberately know, as they complain, they are telling us they want to read more. Cause if you say, I can't answer this question using what you've taught me, then you are telling me that you have read the notes and the notes are not applicable so you must read. So what we tell you, I normally advice them, borrow (*gives name of physics text*) and that is where most of the problems were got from. So they, the book becomes very popular because it contains the answers to most of the problem-sets. But you cannot tell them to borrow the book, unless there is a need.

CAL2 viewed student complaints as a quest for more knowledge and as an opportunity to direct students to helpful instructional materials and resources. His comments imply also that problem sets make students read texts they would not have ordinarily taken up to read. He said he even lends students his own personal books. Once the students solve the problem sets, they hand them

in for grading. **CAL2** stated that grading these assignments provide useful feedback concerning whether or not students did some reading around the topic. **CAL2** said,

> Because we already know where the answers are, which books. So when you bring the answer and it is right, to us, we feel you must have read these books to get the answer. And the answers would never be the same, because the students will be reading different texts. And the way they coin the answer will not be the same.

CAL2 recognized and expected differences in students' response owing to differences in their prior knowledge and transactions with text (Rosenblatt, 1994). **CAL2** claimed he advised his students to read at least three different texts about a certain topic. He reiterated this fact in a physics methods class I observed by saying, "You must have one book which is a class text and others which are references for the teacher."

In sum, two strategies **CAL2** claimed his department used to help students read to learn was learning points and problem sets. These strategies helped provide links between students prior and new knowledge and also compelled to read extensively.

Reading to Learn from Required Readings in Biology

I asked **CAL3** what strategies she used to strengthen students' interest in and understanding of biology. She thought use of key concepts can aid comprehension and recall. She said,

> For example, I was teaching somebody the heart…I told her, 'just look at it as a pump. Then look at the liver as a regulatory organ… if you remember that concept, then I tell you it regulates all the food that we eat, you can write an essay about it…it regulates sugar, it regulates proteins, remember any food'…Yeah. So if one understands the basic concepts and principles, everything else falls into place...I said blood is for transport. Just the word transport… So what should be transported in the body?...It has to be food, it has to be hormones, it has to be gases. So once you remember the word transport, everything else should fall into place

In **CAL3**'s opinion, analogies such as 'pump,' 'transport' and 'regulate' are crucial for remembering functions of the heart, blood, and liver, respectively. **CAL3** emphasized also that use of real objects and actual specimens helped in the learning of biology. She said,

> If you cannot teach using a model or the real specimen, biology would be very boring. We have real animals and we show them the liver, show them the eyes, the heart, even the eye you can freeze it and cut it open and see the inside, the heart, just the same where, the liver. The actual specimen… Yeah, so they are good. Somebody sees the real thing. If you say it is a leaf, or plant that grows in the wilderness, you bring it and you compare it with the one that is growing in the water… For us that is the day. There is nothing better than that. But in combination with field trips. They must have background information before they can look at it, then must to have had, they must have a diagram to accompany what they are seeing. That way it will be more effective.

She claimed this strategy to be more effective in helping students make what we call in the field of reading "text to world connections" (Keene & Zimmerman, 1997) - to facilitate comprehension. Students compare their prior knowledge, what they have read in texts, and what they see when they go for field trips or when they examine real specimens in front of them.

CAL3 claimed also that cross-referencing strategy was useful to solidify students' understanding of subject matter from different vantage-points. When I observed a biology practical lesson, witnessed for myself students using texts by different authors to discuss similarities and differences in drawings and diagrams in those texts. In one group, for instance, they discussed a germinating seed and how different authors had labelled differently and foregrounded different aspects of the topic - germination. It was clear that the different texts were basis for discusion and further learning. In our conference after the classroom observation the lecturer reinforced the importance she placed on texts to facilitate student understanding. How students in this class interacted with texts is an example of intertextuality or text to text connections (Keene & Zimmerman, 1997). Perhaps students are advantaged in not all having the same textbook in that it is leading to the use of multiple sources and cross-referencing.

CAL3 discussed another strategy - hands-on, minds-on, hearts-on. I asked her what these terms mean and she said,

> Minds-on, you see they will have done the theory, so they know about it. And as they do, they relate the theory with what they have, what they are seeing. Hearts-on I think is attitude, and hands-on, the actual handling of the experiment… They will teach the theory, show the diagrams, use charts, use models, yeah. Then by the time they come to see that heart, they will have heard about it, they have drawn it, they will have discussed it. So they will be verifying what they have been told… You see, that is why reading alone is not enough. Practicals are good. They help, they help them. They won't forget so much. Retention is, is improved by hands-on activities.

CAL3 discussed two other strategies that the biology department uses: tutorials and reading assignments. I asked her what the difference between the two was and she said this of tutorials:

> We like, for example, since we know they don't go to the library, we send them, we give them questions to go to the library, read, make notes, then come and present to class, what we call tutorials… Yeah. But after we have given them questions to go and research them. So that makes them go to the library. I tell them okay, next Friday go and find out, let say the structure of the eye, then you come and report to the class. So they will be the lecturers of that day. they present. The eye is like this. They draw, they teach. The class will respond also. They will also all read and respond and here you should have added this point, here this is missing and they discuss and we ask the person questions. So it will be a discussion.

The tutorial strategy made the students to read to teach. These activities require that one has good note taking and summary skills as well as the ability to *re*-present that information. This would require that students read, understand, and are able to recall information during the tutorial session. **CAL3** claimed that when students were compelled to read, they did in fact, read. This idea was re-visited when **CAL3** talked about her teaching experiences and the fact that when she does not know something, for her it means "sitting down and reading." In another section of the interview, she revisited this issue again when she said when students graduate and take up teaching positions, that is when "they will actually sit with books and understand what they

didn't understand here (*at Elimu College*). So that is the time they actually learn." She went on to add,

> You see, when somebody is sent out to go teach Biology for example, they are told now we have Form One to Form Four. Teach. Somehow, a teacher is very adjustable. They adjust *'tu'*. Because now, they are a teacher." CAL3 was optimistic that somehow the students would "adjust" – meaning improve in their reading habits. This means that when students are confronted with tasks that require reading, they would read…They have no choice because if somebody is given a class to teach from Form 1 to Form 4. That this is your class carry it to Form 4, surely he wouldn't want them to fail So he will definitely put a lot of effort and do work, you know, to improve.

CAL3 opined that it was disappointing that reading should be reduced to this: students being compelled to engage in what should be an otherwise pleasurable activity. She speculated that that was probably why many students develop an aversion towards reading because of things associated with it - such as the prospect of presenting to others what one has read outside of class.

I asked **CAL3** what she meant by reading assignments and she said,

> Reading assignments, we give them questions, let's say reproductive system with its questions. They go and also research in the library, read, write notes, and when we give them questions we give them reference books and page numbers. Very specific so that we are sure they have read. So we say read this book, this book. We can give them ten books but with specific pages. So they will read, make notes. Then after two weeks, when they come back, we give them something like a quiz, but they have their notes, yeah, so it is different from a quiz because a quiz you come with only your pen and write. But this one, you come with all the notes that you have written in the world and answer the questions you have been given using your notes…but, we don't allow them to come with textbooks. No! Come with ALL their notes, even if they are ten volumes of whatever, rims of foolscaps or not, come with them. But no textbook.

CAL3 emphasized that giving students reading assignments, and then open-book-type examination, is the surest way to know that students read and write down something (notes). She said,

> There is no way of assessing whether they have read or not without telling them just come with their notes. Because if I am allowed to go with a textbook, why should I read

> and make notes? So I will have an excuse and sleep and wait to go with the text book. But because I am not allowed to go with that book, I have to make notes to be able to pass this whatever, open-book… They are forced to read. So it is another way of, actually making them getting used to doing research in the textbooks in the library.

In other words, reading assignments, and tutorials as already discussed, made students to read in order to excel in open-notes examinations. **CAL3** emphasized also that students were not allowed to share their notes during such examinations but are required to work independently. **CAL3** thought this strategy would, hopefully, equip students with skills essential for conducting research such as note-taking and summarization. One student commended the use of reading assignments by the biology department when he said,

> Elimu College does some good introduction especially in the assignments given in the sciences like reading assignments, which makes us to go through different texts with much concentration. I encourage them to continue and still improve more and to give students more challenge to go through different texts which much concentration

Unfortunately, **CAL3** contended that even with this type of assignment put in place, students still failed, and in her words it meant "they only copied (from the textbooks), they didn't understand." She added further,

> Now during that quiz, is the time here I am trying to look for the answers (*shuffling papers)*. So most of the time is spent looking for the answer which means they didn't understand the concept… Yeah, because the question might not be so direct. Yeah. I might be asking them now compare structure A with structure C but the notes here is structure A is here, structure C is written there, structure D. So by the time *wanaunderstand hii then hii ndio waanze kukompare hii* (by the time they understand this, then that, before comparing) answer the question time is out.

This means that some of the students did not possess good study skills and did not apply knowledge as readily as they should – reinforcing what **CAL3** discussed concerning students' study skills. She proposed that maybe students should be given handouts, which were assumed to be more comprehensive, to go along with the notes lecturers dictate them. However, the cost of producing such materials was prohibitive.

When I observed another biology class, I saw students appointed to read aloud to others from one of the lab guides in both small-groups and whole class sessions. Students also generally re-read the guides as they conducted biology experiments. I asked **CAL3** to comment on the read-alouds and she said,

> That one is meant to alert people that this is what we are going to do. It is like an introduction of the lesson. This is what we are going to do today, these are the materials required, this is how we are supposed to do it. So that way, it helps them plan their experiments. Because you will find, we call them investigations. So there can be various investigations in that practical. So it helps them in planning in advance. Maybe investigation four says, add this, let it stand for half an hour. So if they see it the last minute when they are finishing the lesson, they will have, they cannot set and wait for half an hour. But if they read through a whole paper, they will get the plan: which investigations should be set earlier, so that they continue with others. So if there is one to be set aside to wait for observations, they can be doing other experiments. So it helps them plan their experiments.

CAL3 thought read-alouds were useful for students to plan ahead what class experiments need to be conducted and in what order.

In sum, CAL3 mentioned a number of strategies which help students read to learn from biology texts including: use of analogies; cross-referencing; hands-on, minds-on, hearts-on strategies; tutorials and reading assignments. Some of these strategies were evident in two biology classes I visited.

Reading to Learn from Required Readings in English and Communication Skills

All three lecturers (**ELCS4**, **ELCS5**, and **ELCS6**) from English and Communication Skills department interviewed discussed at length about the unique role the department plays in helping students read to learn. **ELCS4**, **ELCS5**, and **ELCS6** stated upfront that reading is only one of four components (the others being listening, speaking, and writing) that the department emphasizes. For instance **ELCS4** said, “Reading, you (*referring to me*) have been here. You know we don’t have a program as such. We have a term (*term is used in place of semester*)

where we deal with comprehension passages to help them (*students*) to develop reading skills." All three claimed that during the second term (between May and August), the department spends a considerable amount of time teaching and engaging students in reading and reading-related activities using diverse multi-genre texts. According to **ELCS4**, the department equips students with study skills they hope can be applied to their content area subjects.

I asked each lecturer from English to describe a comprehension lesson for me. I use **ELCS6** and **ELCS**5's responses to provide a snapshot of how each approached their lesson. **ELCS6** stated that she starts her reading comprehension instruction with an explanation of what comprehension is all about or about the importance of comprehension. She stated that she expected students to read assigned passages and to answer questions, sometimes "without going back to the passage." She said,

> We start with the comprehension passages, we give the comprehension passages which are quite many and they are geared towards uhmm testing their comprehension abilities. And also, the comprehension passages have something they are also teaching. Like some (*passages*) are called, how to become a good reader uhmm… improving vocabulary, how to scan, how to study, how to, you know, read your notes as a student.

In other words, **ELCS6** stated that she informs her students that they will learn the subject matter in those passages since they contain topics such as how to be a good reader, how to scan or skim through something, and how to study. **ELCS6** said that the passages serve two purposes: (1) To test students' comprehension abilities; and (2) provide useful information students can use to improve their comprehension, vocabulary, and reading to learn skills in general. In addition, she said,

> And then usually there are some tasks in the handout. And then we go through them and we try to discuss them in class. So it will really depend on the topic that is on the passage, and then we discuss accordingly. If it is vocabulary then there are exercises on vocabulary that we need to discuss together and we do.

She mentioned how the passages provide information about different purposes for reading and how to adjust one's reading depending on the purpose. She said,

> And then when it comes to scanning, it would show them you don't have to read everything. You have in mind what you want, so just go for it. Just go through what ever is not necessary and then you just get to whatever you require. Yeah. So it is just to equip the students with the skills for being able to read effectively and also read well and also to be able to get the information you want. Coz you find there is some reading that require studying. You have to read and read very, very thoroughly. There are some (*passages)* that require going through very fast. So we just want to show them the different types of ways that you can read.

ELCS6 discussed how she provides feedback on questions used to gauge comprehension

She said,

> And after they have answered the questions uhm…. As a teacher now I can decide to give them the answer. But in many case what I do is I pick on individual students to give us the answers. So I ask the students to read the whole question together with the answer. Not just saying A, B, C, or D (*These would be the multiple choices in comprehension questions*). Then we go through the answers and then I find out from them who was able to get ten out of ten, nine out of ten. That way, I will be able to know whether they were able to understand the passage and answer the questions.

ELCS6 stated also that she can easily tell whether or not students have comprehended texts she gives them. She said,

> If I give them an exercise, I have noted like in my class, they will be able to, you give them an exercise and you find that they are able to do it well. It means that they have actually comprehended. Then sometimes when they write answers to questions that you have given them you can be able to see that some of the vocabulary, I mean they have improved in their vocabulary and also their uses of language.

In short, **ELCS6** uses comprehension passages 'to equip students with skills to be able to read effectively,' to vary reading depending on the purposes for which the reading task is being performed, and also to be able to locate information necessary to answer comprehension questions.

ELCS5 started her description by stating that there is a term when students at Elimu College do "a lot of reading of passages." She said also that she made sure students understood those passages "on the reading methods (*how to read, purposes for reading*), and how to study and answer comprehension questions from passages." **ELCS5** discussed how she uses summarization as an aid to comprehension. She said, "We (*her class*) do a lot of summary writing, eh, we take that serious." **ELCS5** described a lesson that emphasized summarization saying,

> Most probably, I would have given them the passage before, maybe the week before so that I ask them to read and to just familiarize themselves with that passage. Then as soon as I get into the class we do the reading again together, aloud. I will get the different students to read aloud in the class. Then I will get into the details of pronunciations especially. Then we may also get now into the details of different words which may be a bit difficult so I explain meanings and all that. Then I will have set ready questions, which we will do together in the classroom situation. That means I read the question, explain to them where that answer is coming from and where to get the answers, and finally, I will do two or three questions on the board showing them the method that I want them to answer those questions on. And those of course require a lot of summary, summarizing at first, from both of us (*meaning she and the students*), because I will ask the questions, then we answer the questions together and then after they have learned how to summarize, then I will ask them a different question on the same passage and expect them now to use that skill that I have just taught.

ELCS5 claimed she can use one passage to conduct many mini-lessons. There are aspects of reading-aloud when the class begins. She stated that this serves at least two purposes: to model fluency (often good readers volunteer to read) and as practice for pronunciation and communication in general. She said she asks students, "Are you able to read and be understood by the people who are listening to you?" One strategy **ELCS5** claimed she uses is re-reading. She said she asks students to read a passage on their own (this could be done a couple of times so students familiarize themselves with the text) and then a second or subsequent time when they read aloud in class.

ELCS5 said she uses the same passage, within the same lesson to teach vocabulary. She claimed that sometimes the class picks out vocabulary used in the passage and try to find meanings. She talked also about semantic markers and cues which help in meaning generation. She said, "We do things like signaling devices which are supposed to help them (*students*) to comprehend the more." **ELCS5**'s views on vocabulary instruction were consistent with **ELCS4** and **ELCS5**'s. **ELCS4** said,

> We've talked about improving vocabulary. I like that very much because it gives students uhm…ways of improving vocabulary, being able to tell words from their contexts, uhm… from the prefixes, suffixes, and all that. And from the roots. Not necessarily that if you come across a difficult word you must go in the dictionary. You see that way you don't even understand. For them to go into the dictionary, they should only go to find some of those troublesome words, that really you can't get out of the context.

ELCS4, another lecturer in the department discussed word analysis strategies which might include breaking a word down into smaller units and focusing on word roots, prefixes and suffixes. On how to build students' repertoire of words **ELCS6**, yet another lecture in the department said,

> We want to show them how they can build up their vocabulary, because in that handout they say what they should do in order to improve their vocabulary, to show them that one word can have like so many different meanings. Like if you take a word like run, there is run a shop, run over somebody, and things like that. So we believe that one will also help to enhance their repertoire, yeah, something like that and to also increase their vocabulary.

ELCS5 said she gauges students' reading comprehension through questions. She said, "Generally we read together and we explain the difficult parts of the questions. And I check out that understanding when now they are answering the questions." All these activities are done to prepare a student for summarization activity by the end of the lesson. **ELCS5** claimed also that she demonstrates how to summarize from text and involves students to do a couple of questions.

Then she gives a different question so students can apply skills taught. **ELCS6** mentioned that she, too, teaches students summarization and explained its relevance to reading comprehension. She said,

> That one actually emphasizes understanding because as much as possible, we encourage them to use their own words. They read and then, uhm… definitely for them to use their own words it means that they have understood what they have read. So that one I think also helps them coz we tell them that in summary writing okay you have to read the passage once, second, and then three times and then now after that you can try and answer the summary questions. So that of course helps them.

ELCS6 mentioned also that re-reading is a strategy that is helpful for summarization (implying understanding of text). Previous research indicates that summarization is an effective way to teach students about important ideas and concepts and the organization of those ideas and concepts in texts. For example, Friend (2000/2001) observed powerful results with high school and college students who were instructed to include written summaries in their content-area reading. She discovered that students who had learned to summarize did significantly better than a control group on such measures as identifying important concepts, excluding unimportant concepts, and constructing the thesis of the article. In addition to summarizing, Sinatra (2000) found that concept mapping helps readers gain a greater understanding of the content by helping them formulate mental plans of comprehending and composing as they read and write. By teaching students to understand text organization plans, content-area teachers enable students to cover meaningful content topics in greater depth and to connect new knowledge with prior knowledge (Holloway, 2002).

What **ELCS5** claimed she does in a comprehension lesson appears consistent with the gradual release of responsibility instructional model (Pearson & Gallagher, 1983). Pearson and Gallagher coined the phrase *gradual release of responsibility* basing their ideas on social cultural theory and zone of proximal development (Vygotsky, 1962). A lesson adopting this model would

consist of the following four key teaching steps: (1) teacher modeling and demonstration (which might include explicit instruction); (2) guided practice (including scaffolding, more student responsibility and teacher feedback); (3) independent practice (letting go); and (4) application to reading. This approach ensures that students are ultimately able to apply skills and strategies learned independently.

I asked **ELCS5** and **ELCS6** where the English and Communication Skills drew reading comprehension passages from. **ELCS6** claimed that her department does not have specific textbooks but it has hand-outs that she uses for instructional purposes. She stated, however, that no new materials had been developed while I was away on study leave. She said,

> We have not developed any other materials. We just use the handouts uhmm… to give to the students. We don't have any textbooks as such that we give to our students. Except that now when it comes to setting the exams, that is when we refer to other passages from other books in the library or even our own personal books. Sometimes we take high school textbooks, we get most of the passages from the high school textbooks because we feel that is the level at which our students are at.

In terms of explicitly linking literacy instruction and content area texts **ELCS6** said,

> For us we pick from any area. There has never been that emphasis in this department to pick from the area of science. We just pick any. If you come across a science, a good science passage, we give it to the students. If you come across a good uhm…passage on, on anything in life, we just give to the student coz what we are more interested in is to test the comprehension, and the vocabulary, and of course the summary, their summary writing skills.

ELCS5 concurred with **ELCS6** by saying that the passages in those handouts were drawn from different books including books that are academically oriented, set-books and different grammar books. The fact that English and Communications Skills lecturers were making some attempts to provide a multi-genre selection of passages is laudable indeed. However, and as reiterated by **ELCS5**, students focused more attention on content areas subjects than on English and communication skills. She thought that if the department used content area texts, which students

are already inclined towards, they might capture and sustain their interest in the courses the department offers. In this regard, she stated that what English and Communication Skills lecturers might want to ask themselves is, "What passages would be of most worth to students both in terms of interest, motivation, and also in enhancing their reading to learn in the content areas?" **ELCS5** mentioned some books she would like to see students reading. She said,

> Maybe more on books which are science-oriented but they are readers. They are not practical science books, but they are books on scientists. For example, who was this character in the science history? Like in mathematics they have their own people who came up with different theories - Who are they? What are their histories, you know? Just things like that which are of interest to them, you know, those kind of books, bibliographies, and all that… like any other literature book, for example, if you have a book on a particular topic and uhmm… say the Wright brothers who came up with airplanes (chuckle) and all that. If they have a book on those kinds of people, then we would use them just in the same way as we will be using any other readers in the library. The only thing is that they will be more interested in that aspect of… or even now, computerization, many things are coming up. So like Bill Gates, what are his, you know, yeah, things like those are what I would think, maybe of interest to them. More books so that they will be able to read, you know, on a wider scale.

ELCS5 cautioned that making books available and accessible to students is necessary but not sufficient. Students need to be surrounded with quality books, within easy reach and on a variety of subjects, and also encouraged and shown how to use them. She said,

> Even though they have very good books in the library, but you see, it is one thing to go to the library and pick a book to read and another one to have a reader's book in the class. Yeah, maybe even an introduction of literature would be a good thing because you see in literature they would have more reading comprehension and more practical, what do I want to say, you know, putting into practice what you are reading, the themes and all that. So may be an introduction of, a re-introduction of literature would be an added advantage.

I asked **ELCS4**, **ELCS5**, and **ELCS6** what other strategies they used to help student read to learn from required readings. **ELCS4** mentioned, for instance, that the ability to come up with good questions from texts they read and to frame oral questions in clear and unambiguous terms is imperative for pre-service teachers. She said,

> If they are going to set exams to the students they are going to teach, they are supposed to set them, we do questioning techniques. How are they supposed to set those exams? You know, if they said what- or how- (*referring to kinds of questions*), what difference does it make?

ELCS4 thought this strategy would be useful when students graduated and took up teaching jobs. She did not emphasize more on how questioning techniques help students to comprehend texts they would encounter. **ELCS6** concurred by stating also that questioning techniques (the ability to come up and/or ask good questions from texts) are invaluable to students in their future career as teachers. She said,

> We teach them how to read a passage, how to form questions from that passage so that they are able to use those skills in examining their students in the future. So, as we teach them how to read, we are not just teaching them to read aloud, we are also teaching them how to comprehend so well that they can even examine their students on it. That is a skill which they use all around, in all their subjects, be it chemistry, physics, they will need to read, comprehend and even be able to form questions for their students later. We teach them on the good qualities of good questions, good questioning techniques, how do you ask the students questions and how should you expect them to answer? Good questions, bad questions and uhmm all those things

In her comprehension lesson description and from the quote above, **ELCS6** stated that she teaches students strategies to come up with, and pose good questions from texts they read as well as be able to differentiate between a good and bad question. Student-generated questions make the text more accessible than textbook questions which often focus on facts to the exclusion of the reader's experience (Raphael, 1986). In **ELCS5**'s comprehension lesson focusing on summarization, she claimed she guides and involves students in breaking apart and analyzing different parts of questions. This helps them to understand what the questions require before they attempt to answer. She claimed also that once students understand what questions require of them, she then helps them locate information to answer the questions. What **ELCS5** does is

crucial, given that many students are unaware of the different thinking levels questions many elicit (Buehl, 2000).

No comprehension activity has a longer and more pervasive tradition than asking students questions about their reading, whether this occurs before, during, or after reading (Duke & Pearson, 2002). Research also shows that teacher questioning strongly supports and advances student learning from reading (Armbruster, Lehr, & Osborn, 2001). Research talks about the Question Menu, based on Reader-Response theory and implemented in three different ways: (1) The oral question menu which enlivens the class; (2) the written question menu which encourages reflective, involves exchange; and (3) the listening quiz menu which focuses learner attention. All three variations could be employed in one lesson or alternated depending on learner needs. It has been claimed that the three ways result in deeper learner involvement with the text.

Having read about Reader-Response theories (Beach, 1993) and the claim that meaning is brought to the text by the reader and Taffy Raphael's (1986) work on QARs, I understand the department's attempt to teach questioning techniques and strategies. QAR teaches students how to distinguish questions with answers that are found "in the book" and questions with answers that are found "in my head" (for more information, see Raphael, 1986). The fact that **ELCS6** also teaches her students different kinds of questions and how to frame them is an important first step. **ELCS6** claimed also that the skill to read and comprehend texts and then formulate questions from those texts is a skill which students can use in their content areas and future careers as teachers. Perhaps future research might investigate the relationship between questioning technique strategy and students 'comprehension of expository texts. I am of the opinion that if the department uses, for instance, Raphael's work on QAR, their efforts might be

more beneficial to students. I suppose also that as students become more comfortable with identifying types of questions and answers, they can begin to write examples of their own questions in lieu of responding to lecturers' questions or those questions in textbooks. QARs can provide a good glimpse into what students are focusing their attention on and their level of comprehension of a given text (Taboada's (2003) and/or other research findings would be inform such efforts).

Apart from comprehension passages, **ELCS6** stated that students are also taught many aspects of grammar, including sentence structure, idea connectors, verbs, tenses, and punctuation. **ELCS6** stated that she viewed learning grammar as informing reading ability and thus what the department offered cumulatively contributed towards improving students' general reading ability and reading to learn.

ELCS6 described sentence structure thus:

> In the sentence structure we teach them, 'What is a sentence?' uh, "What is a sentence made up of?' A subject, a verb. We teach them about the different types of subjects we have, we also teach them about the different types of verbs - transitive, intransitive. We teach them about objects and things like that. Then we teach them about clauses, a main clause, 'What is it?' 'What is a subordinate clause?' We teach them the mistakes that people normally make when they are trying to construct sentences. You know, we look at all that. We also teach them how to identify mistakes in sentences and also how to correct them.

ELCS4 justified why the department starts instruction at the sentence level when she said,

> We start with the initial sentence structure –what is a sentence? Because even in biology or maths they are going to have sentences and they have to know what composes of a sentence.

What **ELCS6** discussed concerning sentence structure implies word analysis at sentence level, and particularly the syntactical structure in a sentence. She claimed she set aside time to examine mistakes in sentences and to equip students with skills to decipher why those mistakes are

mistakes. She claimed also that at the sentence level, other aspects covered included verbs (transitive and intransitive, auxiliary, and phrasal verbs). She said for instance,

> We teach them phrasal verbs, how to use phrasal verbs, how to identify them. And then we tell them that phrasal verbs are very many. They need to read more so that they can also be familiar with the uses of the phrasal verbs.

Apart from verbs, **ELCS6** said she also taught students tenses. She said,

> We also teach them tenses. How they can use tenses in the right way. The present tense, the past tense, the present continuous, you know, all those tenses we teach them and then we also teach them prepositions, prepositional phrases, prepositional adverbs and things like that.

ELCS6 stated that from basic analysis at sentence level, the next level of instruction focuses on the relationship among sentences. She said,

> Okay once we are through with that we also teach them how to connect sentences, how to connect idea sentences. We try to show them the difference between them (*sentences*) and also we try to teach them what all the connectors stand for. There are those that are meant to show cause and effect, there are those that are meant to show that there is an additional point and so on.

ELCS6 used the terms connectors, semantic markers, and signaling devices which are used to join sentences and convey the relationship among the sentences. These might include words signaling a cause-effect relationship or signaling an additional point in being stated. To illustrate further **ELCS6** said,

> As they are reading, if they come across those semantic markers, they can be able to know that they are coming across important points. Like they can, we can teach them semantic markers that show contrast of ideas. So when they see those semantic markers like *but, although* it means that this idea is different from the previous one. Uhmm… semantic markers showing additional ideas, showing that the writer is concluding, uh, the writer is bringing (*introducing*) new points like *firstly* and *secondly* and so on. So those ones can also help the students as he's reading. He is able to know okay this is an important point, this one is a contrast and things like that.

ELCS4 concurred with **ELCS6** by stating

> We go through a whole process of how to take notes, how to know which is an important point, and which is not, how a point is introduced, the cues that help you know this is a

> point, these are examples, you know, and this is how it is developed for you to tell if it is listening a speaker has moved from this point to that one, for example. Or if you are reading a text book, to be able to pick up the main points. So we discuss main points, and then we also discuss subordinate points. Then they do such a number of passages for them to pick up many points, subordinate clauses, developing sentences so that they are able to see that relationship and hopefully that they are able to use that knowledge to read, and even to listen to any lecture. To be anywhere and listen, and be able to take the important notes that are needed for that particular session because not all that is said needs to be taken and not all that is said is important. So that helps a lot.

ELCS6 mentioned that she teaches her students punctuation. Although this topic is under grammar, she isolated and related it to student writing. She said, "Then we also teach them punctuation, how they can use punctuation effectively in their writing. So things like full-stops, semi-colon and all the work."

ELCS4 claimed also that the department gave students a series of exercises aimed at improving their fluency. She said,

> Some of those, the skills we do, if they are well followed, like we have passages which time the reading speed, if you remember them. Like those ones I use them and I am able to tell the students who read faster and as you read you are supposed to improve.

ELCS6 concurred with **ELCS4** by mentioning, for instance, one passage which targets students' reading habits with the view of improving their reading speed. She said,

> And then also we want to teach them how to get rid of bad habits of reading. Because like there are students who read one line and then go back to it. They read, it wastes a lot of their time and they don't know why. There are those who read as they point with their fingers on what they are reading. Again that is a bad habit so we try to assist them to eliminate the bad habits they have so that they can improve their reading speed and they can also improve their reading.

ELCS6 described how she monitors students' reading speed by saying,

> We also check the speed the student has used to read that passage so that even for us we will be able to know how complex it (*passage*) was or how simple it was. So after that now we give out the handout with the passages in them and then we tell them to read quietly. And we also ask them to take a watch and time themselves. And of course they do that.

ELCS6's quote reflects her thought on the inverse relationship between reading speed and text complexity: the more complex the text, the slower the reading speed and hence the more the amount of time spent reading it. **ELCS6** discussed why reading speed is important and why both speed and comprehension should be encouraged. She said,

> We try to improve their speed as they are reading. We try to help them improve their speed because we tell them if you can read a lot and understand, then you are superior to a student who reads slowly because you are able to cover more ground and you are able to revise in a short time uh, for your exam.

ELCS6 pointed out the relationship between reading speed, comprehension, and amount of time spent preparing for examinations. Future research might investigate this relationship and the implications for reading to learn from content areas.

Although **ELCS6** was aware I was interested in students' reading abilities, she discussed the intimate connection between reading and writing. She commented about students' writing abilities by saying,

> Unfortunately, I don't know how I can, where I can put this. But when we do the mini-talks we normally tell them to write some essays which they are going to present in speech. You come across so many mistakes, of spelling, mistakes of grammar. But of course it doesn't apply to all the students. Just some who just don't seem to understand how they are supposed to go about doing, writing. Coz grammar errors, spelling errors, sentence structure. You find it, it just doesn't tally with what you have taught them.

She claimed that she had found a way to get around this by encouraging her students to do more research work. She said,

> The mini-talks, it's like, they don't do a lot of research in them. In fact if you look at some of what they present, it is so shallow. It is not something that, some of them, don't, they just write for the sake of writing. They don't go and do a good research. Because I would expect that if they were to do a good research they would come with facts showing information, they would have, it would be something that is going to be of help to other people. But it is like, they just come. It's like, you've told me to write an essay on this. I am writing it. Here it is. It is such a skeleton. It doesn't have details I would expect if somebody had done good research.

ELCS6 used this example to illustrate the need to change the status quo by involving students more and setting up appropriate support systems for their research work. She said to me, "So I feel maybe you could emphasize more on that. Okay, they do write but it is not something that you'd really be, would impress you." She was quick to note that there are a few students whose written work which was exemplary – a beacon of hope in teaching. She said

> But otherwise I think I can say we have succeeded to some extent for there are students who are good. They write something and you can actually appreciate that they have done, they have done well. They have incorporated the things which you taught them.

In short, English and Communication Skills department offers a curriculum that emphasizes all four language skills (listening, speaking, reading, and writing). It was thus inevitable to discuss all four skills although my focus was on comprehension and reading to learn. **ELCS4**, **ELCS5**, and **ELCS6** provided unique perspectives on the different topics the department covers. Collectively, however, the department does teach five sub-processes of comprehension (see Irwin, 1991; Tompkins, 2003), which are critical for reading comprehension and reading to learn. Irwin has identified the following five sub-processes of comprehension (see Tompkins, 2003): (a) micro-processes – where readers chunk ideas into phrases within a sentence to read fluently; (b) integrative processes – where readers infer connections and relationships between clauses and sentences by noticing pronoun substitutions, inferring cause and effect, and recognizing connectives such as *also, however,* and *unless*; (c) macro-processes – where readers organize and summarize ideas as they read; that is they look at the big picture of the entire text as well as the smaller units in the text; (d) elaborative processes – where readers elaborate on the author's message and use their background knowledge to make connections to their own lives and other literature; and (e) metacognitive processes where readers monitor their comprehension and use problem-solving strategies to read and write effectively.

Asked to describe what texts they use comprehension instruction, the three lecturers in the English and Communication Skills department collectively indicated that they used any texts deemed relevant to teach comprehension skills and strategies. No explicit emphasis was laid on texts students currently use in their subject areas. It appeared there was an assumption that students would transfer those skills taught in the department to their subjects. **ELCS6** suggested the need to make a conscious effort to include texts in students daily discourses if the students were to find programs offered in the English department relevant.

Student Readership

There were divergent lecturer perspectives with regard to student readership. On the one hand, **CAL1** referred to students as being 'good,' 'bright,' and 'challenging' in terms of their academic [and reading] abilities. He claimed that for that reason, one has to "thoroughly" prepare lessons by taking time to "look at different texts in the areas where you are teaching" otherwise s/he will be challenged by the students. "Looking at different texts" most likely meant reading widely around a topic and probably consulting several textbooks and/or class references. **CAL1** concluded thus, "So I have been enjoying teaching [at Elimu College]. But you have to prepare."

While commenting on student readership **ELCS5** said,

> I wouldn't say that they go out of their way much to read the general books. They use the library more on their special subjects, you know, where the library is well equipped with books and I would also think they also do a lot of reading of the newspaper there and all that. But I doubt that many of them go out there just to read storybooks.

ELCS5's mentioned how students were more interested in reading only their subject areas. She said further that students don't have time because:

> Their curriculum is very crowded for them to have excess time for them to go and just check out books and read for leisure. I would say that if any reading is done for leisure, it would mostly be over the holidays. Definitely I don't think that over the term they do much reading.

ELCS6 agreed by saying,

> At least at this moment what I know is that they just go there (*to the library*) to read magazines and newspapers. You just find them gathered where newspapers are. Its very few people you will find on the shelves looking for books to read.

ELCS6's statement indicated her desire to see students read other texts in addition to reading newspapers. **ELCS5**'s and **ELCS6**'s views concurred with those of **CAL3** who thought students do not read as much as they should. She stated that students are "not good material for study… They are taught and they go off." They prefer instead

> to be spoon-fed, they will not struggle. They will not say this is my cross…let me struggle to get through here…The students have no time to read and comprehend anything… Maybe it is only that they don't give it enough time. Not that, the problem is not the language. It is time. That they don't give whatever they are reading enough time, to understand…If somebody reads a topic like a story, surely?...They will not understand, or even remember…hmm. So I think it is the input. Yeah. You see them sitting on these stones here…instead of trying to understand a concept they missed during the day…It is the input.

CAL3's perspective is that students are over-reliant on other people such as lecturers and do not invest time in seeking knowledge. She did not perceive them as taking responsibility for their own learning. She claimed that the little time the students have on their hands they would rather be out basking in the sun or chatting instead of trying to keep abreast with the information in their fields of specialization such as biology. In **CAL3**'s opinion, time invested in learning determines whether or not students read outside class. She stated also that students did not take the time to thoroughly prepare for their examinations. Instead when

> …a quiz comes, they look at their notes quickly…nothing like reading…no time to grasp and digest… to sort what they have learned, sit down and think, What have I learned? Can I now look at this reference and compare with **CAL3**'s notes?... Because even the little, the few, the notes that they have they don't read them at night…Sasa *(now)* they will not go in the evening and say, let me see what we learned today…No. they just go by sketch. It can be so bad that sometimes you bring a quiz and bring a diagram. Then they

> tell you, “but we didn’t draw this in our class” but Class 2B their tutor drew for them so this is an unfair question…

CAL3’s quote implies that students may be using inappropriate reading skills when preparing for a quiz. “They look at their notes quickly” meaning they skim or scan through the notes when they should be thoroughly revising in preparation for the quiz. **CAL3** used the terms ‘grasp’ to refer to the initial understanding and ‘digest’to mean a more indepth understanding for information to be stored in long tern memory. She explained further that students did not engage in independent reading to verify and/or clarify and build on things they learned in class. More specifically, they did not compare information learned in class with that found in texts nor did they try to process and synthesize that information. Because of this limitation, they considered an examination biased if it did not reflect only that material covered in class and given in a lecturer’s notes. **CAL3** further said,

> Because if somebody went into a textbook and we were discussing a grasshopper. Even if I don’t draw it, it is in a book. One would read it from the book… and get it. But the fact that I didn’t draw for them and somebody else drew for them in that other class, then it is an unfair question… They will not read on their own. And if you miss a lesson it is okay. If you tell them now let’s compensate they will tell you no way. So if you ask them, ‘You don’t mind?’ ‘No. So long as you don’t set it in the exam.’

CAL3 thus pointed out that students’ unwillingness to go the extra mile to educate themselves was disadvantageous and detrimental to them. Student attitude also reflected their reading to the test or focusing their attention only on what would come in the test. The lack of input on their part might reflect a lack of self-motivation and/or poor study skills, an issue that might be taken up in future research. In general however, CAL3’s views concurred with those of **ELCS4** concerning students’ study skills or the lack of. Referring to a writing activity she had given to one of the classes that I observed, **ELCS4** said,

> Notice the way I taught them, after I taught them, because they didn’t know they were going to write on the spot. They were writing without even thinking about what they were

> writing. And we have taught them as you read, you make notes. But you see, they don't digest. So like now when I gave them that exercise, you noticed now they want to read their notes. And I am telling them this is not the time to read notes. You should have understood then you apply. That's what we have told them, but they don't do that.

From **ELCS4**'s excerpt and what I observed in her class, she made a conscious attempt to connect reading and writing. Students were asked to write a warning letter following what they had been taught in a previous lesson. But as **ELCS4** pointed out, the students seemed to experience difficulties in writing. Many were seen going back to their notes to search for any information that would help them accomplish the writing activity. **ELCS4** stated that students did this because they had not 'digested' what she had taught them – meaning they had not committed the information to long term memory and were thus not able to recall - without referring to their notes. To clarify further about students' study skills **ELCS4** said,

> So what I have noticed, which is what we do in those study skills, the students just write, they don't comprehend. And they don't even go back to look at what they have written so that when you ask them the next minute they have no idea. So if you ask me I don't even know the time they revise. Because what they do is just go until (emphasis added) the time to revise for exams then they go to look at those notes.

ELCS4's observation may indicate students lacked study skills. She mentioned also that students are "not focused" and that they have "so much on their minds." These sentiments may indicate students' preoccupation with many issues – probably personal as well as academic - and all these affected how they studied and what they focused on when reading.

Lecturers interviewed came up with plausible reasons affecting student readership. For example, **CAL1** castigated the education system in Kenya as being "exam-oriented" and had negatively impacted student reading. He said:

> You see the problem with our system …I actually pity our system of education. It is exam-oriented…If you don't pass your exam, it's like you are a fool…A student who just reads to pass, is, has still that mentality that unless you pass your exam, you are a fool…A student who just reads to pass the exam may not be a scholar. After they pass

> they have no ambitions. But someone who has ambitions will read all the time [not only in anticipation for an exam] they are reading they update themselves and even when their exam comes, they have no problem, some of the students only read during that time [when timetable shows there will be an exam].

According to **CAL1**, there seems to be an erroneous assumption about passing the exam being synonymous with being intelligent. Countering this assumption he said, "A student who reads just to pass the exam may not be a scholar." In his opinion, a true "scholar" reads above and beyond the dictates of examinations. This might mean reading for knowledge's sake.

CAL1's views concurred with those of **ELCS4** who stated that purposes for reading were pegged to examinations. She said,

> But you see here the students just read the bit that they can read and they don't go out of their way to read. The system here, Hellen, you know that it is examination-oriented. So people read to pass exams. Yeah. As long as I am reading this, it will help me to pass the exams, they will read. Otherwise you can be sure people don't just take books and read.

'The system' was to blame for students' poor reading skills. Students read only what was required to pass their examinations. I coin the term "reading to the test" to refer to reading for purposes of passing examinations. **ELCS4** saw this as problematic. She said,

> The problem with them reading to pass exams is that they now read, if it is biology, it is just that. You see sometimes I have gone to the classroom and many students have not read the papers. They have not listened to news. If I can do very well in maths and get an 'A', does it matter that I know what is going on around me. Math will not ask me for example what is happening in the environment, is it clean? Am I well behaved, am I a good person? Math will not ask that but I can do so well that I have an 'A'. We want read to get those 'As' and that is what we teach. With 'A' then I can go to university, I can do all these other things. I don't have to know these other things. Surely, even if you are going to excel in biology and you don't know around you, you are not all rounded. You need to be versed, to know what is going on about your health, about your environment, about all these things. Why must you just do maths, maths, and get an 'A' in maths. You see there is, that awareness needs to be there…

ELCS4 discussed the fact that 'reading to the test' narrowed students' reading focus – (i.e. many students read only to pass examinations).This implied also that students read only their subject

areas such as maths or biology. **ELCS4** saw this as disadvantageous to students because they would not be knowledgeable about themselves and the everyday world they live in. In relation to students reading to the test, I concur with **ELCS4** who said, "Students who do well are not necessarily the students who are well-read." She meant that one could not confidently conclude that someone who had done well in an examination and obtained an 'A' grade was necessarily an avid reader. In fact, **ELCS4** feared that the system placed value on letter grade and, in her words, expressed fear about "your grade becoming who you are." **ELCS4**'s view of reading and examination was new to me because I had never really looked at it that way. I had always assumed a positive correlation between academic achievement and the love of books.

ELCS5 added her voice to the issue of reading to the test by stating,

> That kind of knowledge is narrow. It is very narrowed down. You don't explore into the subject. You find that you come up with only what you needed to pass the exam and too much is left out. So it is definitely a great disadvantage. Because we are very exam-oriented and uhmm…basically they want to get an 'A' and to get an 'A' you don't have to read very wide. You just read (chuckle) within the given curriculum given at that particular time. I wouldn't thing they read very widely, no. it is not our culture to read what we don't need for our exams. Very few of our students have been taught how to read for leisure.

CAL3 provided three plausible reasons which determine students' academic ability and willingness to read widely beyond lecturers' notes including: (1) Curriculum Overload; (2) Time Constraints; and (3) Poor study skills. Curriculum overload and time constraints are interrelated. **CAL3** claimed the curriculum being offered to students is:

> Crowded because our students, their timetable is full. If you look at the first year time table, NO single time free… Saturday, ah, it is the only day they are not in class. So they have no time to read these books even if we say they can read, the timetable doesn't allow… and now it is so crowded because we said that computer should not be for Class 1A alone. Everybody needs the knowledge

One reason for the curriculum overload was because computer education was introduced without eliminating any other subjects offered to students. In **CAL3**'s opinion, all these subjects

take up all of the students' time and so she wondered, "as much as we want our students to read, when can they read... when will they read? Look at their time table." Students are expected to be in class from 8:00 A.M to 4:30 P.M. in the afternoon Monday to Friday. They have a tea break between 10:00 and 10:30 A.M and one hour anytime between 12:00 and 2:00 P.M for lunch. She said further, "The students have no time. They have no time to read and comprehend anything. They just enter one lecture after another, one lecture after another." This means that all their time is taken up by the subjects they are required to take. That is why **CAL3** referred to the curriculum being offered at Elimu College as being "crowded" and the syllabus "overloaded." Another interpretation of the time factor is related to the amount of time students do set aside to read. If one is working within certain time constraints, how would they still create time to read? So there are two aspects of time that **CAL3** speaks of: One is that there isn't enough time for students to read because they spend so much time in their classes. The other is that students do not want to spend time on reading outside of classes. There is a bit of a contradiction here. On the one hand **CAL3** felt students were overloaded from the curriculum but on the other, she thought they had time to sit on the stones and socialize. This contradiction raises issues related to students' interests and preferences with regard to reading, an issue that might need further exploration in future research.

I asked **CAL3** what Elimu College was doing to address the curriculum overload issue and she said heads of departments had had a series of meetings in this regard. **CAL3** referred to one such meeting to talk about the dilemma inherent in trying to trim down the curriculum. Rhetorically she asked,

> So which department should we dissolve? ES? English? Library? *(laughter)* PE? What? Which one?... Yeah. We discussed it for almost two hours and we didn't sort it out… Then English (department) stands up and says, "Kwanza *(In fact/ first of all)* we want

> more time *(laughter)*… So we look at the ten subjects, which one should we drop? *(laughter)*

It appears therefore that as Elimu College is trying to change the curriculum in response to the changing times, such efforts pose new challenges that need to be addressed.

ELCS4 took a different stand on student readership by discussing the intimate link between culture, gender, and opportunities to engage in reading. She said,

> Our culture is such that the boy child is more privileged. When they go home, you find that they have more time to read, but this lady, whatever happens she has to cook, she has to help the mother, and she has to do all those things… So now I think throughout, if you started in Standard 1 (*Grade 1*) the boy is reading more than the girl. You go on through primary (*school*), you go on through secondary school. By the time you are coming here (*Elimu College*), the boy who has been accustomed to reading more is improving the speed. The girl, maybe is just picking up. You see, because it is not her habit, because they hardly have time. But of course now we have a few. We have such a few girls who do quite well.

ELCS4's noted that gender differences in perception on texts of all kinds, and specifically to maths and science texts was because of more exposure and more interaction with texts among male students compared to female students. Future research might explore reading maths and science texts at the intersection of culture and gender(ed) roles. These might be tied to broader issues of language and more specifically to classroom discourse. This suggestion is in light of **ELCS4**'s assertion concerning girls' attitude towards science and maths. She said,

> And then the girls' attitude. I think they have been told that sciences are hard. So a lot of them don't do well. They don't even want to attempt because they know it is hard.

She mentioned the term "they (*girls*) have been told" and they have come to "know it (*maths and sciences*) is hard." **ELCS4** was hopeful however that the negative attitude towards maths and sciences at Elimu College is changing. She said,

> So again back to attitude but that is changing. That is changing and we hope that it will improve. Like now they used to take, the class that I was teaching used to have like one

> girl and I don't know how many boys. You see that is changing now. I think we are trying to have half, half. But are they getting that half, half. It is not easy. They are still not there.

This was reflected in enrolment criteria where more girls were sought to be admitted. Unfortunately, fewer of them were graduating from high school having excelled in maths and sciences.

ELCS4 claimed also that it was difficult to track the reading progress of those students who borrowed the books from the library. She said,

> But like I told you, for two hours, you cannot have a follow-up. In two hours, I don't have time for them to come and maybe summarize or listen to them and hear what they have to say. So that is why I think that if the hours were added, like 4 hours that would help a lot. But beyond that you cannot make sure that they have read. Probably by looking at the work they have done, it could be below the standard. But even then they could still copy from somebody, you see? You get my point? And our students know that it is two hours so you cannot like ask them for an extra hour unless they are very good students. Their program is so packed that even asking for an extra hour is too much for them. So you give them, you hope they have read, and so be it. If they give you summary and you mark and give to them, I don't think you have done much. Thereafter, they are just supposed to do their own reading which we don't test as such.

Obviously time constraints minimized any meaningful assessment and evaluation of students' reading. **ELCS4** claimed she relied on self-reports as well as utilized summative assessments to gauge students' progress in reading. These assessment strategies concealed idiosyncratic reading-related factors particular to each student. Relying on formal assessments and also hoping students do read is necessary but not sufficient to ensure students read beyond academic-related materials. Although **ELCS4** did not clearly outline this, her comments implied a need for more informal methods of assessing students' reading achievement. She mentioned, for instance, that she does not have time to "listen to them and hear what they have to say." This may be taken to mean conferencing with students more closely to hear their views concerning reading and their interactions with diverse texts. **ELCS4** concluded thus, "So, we should have a mechanism in

place to help the students read and to follow up that they have actually read what they are supposed to read. That is lacking." Referring again to the lesson I had observed, and in which she had divided the class into groups, she stated

> I have one hour. I just want to know, have they grasped what I have taught? And if two, like those two groups (*referring to the lesson I observed*) they seem to understand what it is that you are looking for in a warning letter. I am happy. Then you see now I have asked them to go and write it (*the class was given homework*). You see that way, they will be able to do a good job. And then follow it up with another letter which they are supposed to write (*intention to give another assignment*). Because individually if you go one, one, person it takes time. It really takes time. So when we do group work usually I normally pick the best, the best one and the worst and we discuss. We discuss what they have done. It is just a question of time, if we had like those remedial hours then that is what we would be taking there and we discuss what is happening. But when we are marking exams, eh, those are individually done. We make notes on each student so usually, I have some work here (*pointing to a stack of papers*). I can tell you what student is what (*referring to ability*) and we follow them up. And then what happens is that as a department, if there are weak students and they are ironed out, we pick them out and we give them more work, more remedial work, more exercises, for them to pick up although some cases you know, you can't do much.

ELCS4 highlighted whole class, small-group and individual forms of assessment that she used with her class. She claimed this gave her insights on students' progress in her subject. She concluded that students needed support and that she does follow them up. She said,

> Those who are weak in what (*whatever subject*), those, and you keep on encouraging them. Some may improve, some may not but they are conscious. And most of them make an effort to improve. Actually our students are good they need to be supported by other members of the institution to do much better.

ELCS6 noted that students could be involved more in reading diverse texts and in monitoring their progress in reading. She mentioned, for instance, asking students to write reports on what they have read and acknowledged such a venture would be time-consuming but worthwhile.

ELCS4 claimed English and Communication Skills department encouraged reading for pleasure. She said, "We even have storybooks. I have tried to give students books to read on their own. We encourage, each individual tutor should have, should give 'readers' to the class, they

read and they collect." *Readers* (sometimes called supplementary readers or class readers) refer to a wide array of multi-genre books available in the English and Communication Skills departmental library for students to read for pleasure. **ELCS4** said that it was unfortunate that many students did not come to borrow those readers. **ELCS5** claimed that perhaps students read during their holiday although she was quick to add that it was difficult to ascertain if they had or had not read. Pointing out factors that might hamper independent reading she said,

> I said 'might be' because I suspect that they don't do too much of it. One, more students will not have access to the library during the holidays and number two the holidays are a time to go to look for little jobs here and there which can help you to bring money. For example, a lot of our students do a lot of tuitions (tutoring) in their home districts. I don't also think that they do, of those who come will be employed in the private schools. I think very rarely because our holidays and the school holidays are (chuckle).

ELCS5 advanced a notion that maybe "they (students) have not been taught the importance of wide reading. They read to pass exams and if you want to pass chemistry you go and read chemistry. You don't go and read other books (chuckle) you read on the subject." In general she observed, "But definitely our culture is not too much into reading. We are more physical work-oriented than reading. We read so that we can get jobs." **ELCS5**'s observations redirected my focus to purposes for which people read and the benefits they perceive would accrue from engaging in readership. In other words, she was afraid that given the choice between reading and finding a job or work to do, many students might prefer the latter. She added further,

> They don't really have time or have the luxury of just going to pick books and reading for the sake of reading. They want to read so that they pass exams, the syllabuses are overcrowded, leaving very little given time, uhmm… of course there is the usual, many of them have financial constraints and all that so by the time you come from Lodwar (*one of the driest parts of the country*) to Kenya Science, your main interest is to finish the course as quickly as possible and getting back because people are waiting for you, your parents are waiting for you to get that job to bring up the other siblings. So we really expect a person like that one to come here and start reading novels which are not going to help him to pass directly in the exam?...So there, it is a whole cycle of, you know, maybe

> you can even call it the poverty cycle (chuckle). Even their parents were poor, they were not able so that you are also poor and the cycle?

ELCS5's excerpt captures the apparently grim picture when factors outside Elimu College determine what students pay attention to and prioritize. Unfortunately, there seems to be a prevailing assumption that reading is either for progress or pleasure and not both. That binary might need to be troubled considering the fact that there are examples of people who are avid readers and also work fulltime.

CAL3 had reservations about students and reading in general. She said,

> I think reading is not in our culture **(***chuckle***)…**I don't know how we can develop it in our children. I tell you it is hard. Yeah. They prefer watching TV than reading…A story book? One would rather watch cartoons…So it is that poor reading culture which we have, I don't know how we can improve.

CAL3's comment raises questions about the effect of media on reading and further points out the difficulty of helping students develop a culture of reading. CAL3 supported early intervention as one of the ways to ensure students develop life-long passion for books. When students come to Elimu College, they are "already formed people" implying attitudes and interests in reading have already been formed and the harm or otherwise already done. **CAL3** said,

> You see they get already formed people. It can only be done at the lower level. Lowest! Lowest level. If your kid is interested in looking at a paper like this (*demonstrates act of reading)*, that is where you should start. But not at, after Form Four (12^{th} Grade). It is difficult. If it is early, I am sure it can be developed, if it is started early. From, yeah, from nursery. Yeah. Including both fields (narrative and expository). Yes! Because that now, they will get interested in animals. So you are drawing their attention towards sciences. Yeah. Another time another story about airplanes. That is towards engineering. It should be started early, very early? Eh! Early, even before they start reading, read for them. Read for them. **(***chuckle***).** Any story, and pictures. You know they can start by seeing a picture. This is an animal. Even if you are not reading, you are showing them, so they will get interested in looking at the book or at the picture. yes. For example, I try with my own kids. If we go somewhere like a hospital where we are going to wait I normally steal a small simple storybook, put it in my handbag so when we sit there waiting, instead of gazing, one hour, with the kid, gazing around like this (*demonstrates idly looking around)* why can't somebody be reading something? But that cannot happen and, unless you have early. You can't! One has to know from the beginning. I am going

> to the salon and I will be queuing there for two hours, then I better carry a story book to go and read. So it has to start, RIGHT at the bottom. Yeah. That way it can happen. One can learn a lot.

CAL3 thus supported the idea of reading to children as early as they are able to look at text and to expose them to multi-genre texts. She emphasized the need to read to children and/or even engage them in picture walks to nurture that interest in books. She attested to reading to her own while they wait at the Doctors' or when she visits a hair-dressing salon she carries a book with her. **CAL3** introduced a new term "the old crop" and I asked her what she meant by that. She said, "I mean we were brought up with that culture where there was no reading, even of a newspaper, leave alone a story book." The term alluded to intergenerational differences in reading habits. She said,

> Yeah, the old crop, where we don't read. We don't read! yeah! We didn't have even newspapers to read. So we only knew we revise their notes for exams. That was all! If you have passed or exams are finished, you pack. In fact we used to burn our books. **(***chuckle***).** Form Four we burned **(***laughing***)** all our books **(***chuckle***)** Eh? so we, we were brought up in that culture where you only read for exams.

I found the notion of burning books very interesting and although I did not probe her further on this, thought it signified the "end of reading" once one had completed high school. **CAL3** noted, however that things were changing, albeit slowly, especially in big cities. She said

> It is not very different except in the city. In the city the children at least read magazines. I see them reading story books. So it has been improved in the city. yeah. But I don't know about the village. I doubt. They don't have that story book, they don't have that magazine I am talking about. Eh.. they don't have that newspaper. So it only reading for the exam.

CAL3 suspected that there might be differences in reading among children in urban areas and rural areas due in part to access to reading materials and resources. She thought it would not be unusual to find students especially in the rural areas reading for the examinations although future research could explore in depth other reasons for this difference.

ELCS5 claimed that "those [*students*] who are able to use their holiday to study computer packages, things that will help them finally towards getting employment." When students study computer packages, they are indeed engaging in reading - in the spirit of multiple literacies and digital literacies. **CAL3** discussed at length how important computer education is to the students:

> When it comes to project work and scheming, we normally tell them to use the computer so that when they have any corrections to be done they don't waste so much time re-writing a whole booklet. They just go cut and do delete. So it saves a lot of time when they are computer literate. When it comes to project writing, and writing of schemes of work. Because they write all the six schemes in the course of the term. Then you mark and tell them, 'Now this one it has too many red marks. Go rewrite.' It is very difficult. It takes a lot of their time. So if they are computer literate and somebody has used a computer, it is a matter of correcting in an hour and they are done…We really like it. It is a good thing…They are being taught all packages. Even we have the Internet and it is free…They have been taught, now they know what they can get from the Internet. They know how to get there. So it will make their life easy. Even, it is like a library in itself. A HUGE (emphasis added) library. A whole world.

CAL3 highlighted advantages of being computer literate, including saving students a lot of time when they need to edit their work, and also how the Internet is "like a library in itself." Although I did not probe this comment further, it would be interesting to find out how students are being prepared for challenges related to surfing the World Wide Web (WWW), and especially how to read critically and sieve information coming via WWW. **CAL3** acknowledged only that these are challenges Elimu College will be facing a few years down the line because the primary concern at the time of interview was, first and foremost, to help the students become computer literate. **CAL3** said,

> That (reading critically) is what they can't do. That they can't. I don't know. They have not reached even that level of even reading the content of what they need to… they are only struggling to become computer literate. They are not so much into the Internet. Yeah, of now sieving the information.

From **CAL3**'s interview also, there doesn't seem to be a concern about the students' ability to read from the Internet. There should be concern with reading from the screen and other aspects of reading from the Internet. The Internet is a potential solution to the shortage of textbooks but there are many immediate needs to contend with. For instance, Internet access at Elimu College is not ideal, yet. Other basic questions would include what it means to be "computer literate" as defined by Elimu College. Future research might consider also the kinds of reading that occur online at Internet Cafés in cities such as Nairobi.

Preparedness to Teach Future Students Reading to Learn in the Content Areas

I asked lecturers to state how prepared students are to teach comprehension of texts they will use for instructing their students. The lecturers were to select their response from the following options: **very prepared, prepared; somewhat prepared;** and **not prepared** and provide an explanation for their response. Below is a table summarizing the results (see Table 3).

Of the sixteen participants, one lecturer **(ELCS6)** thought students were **very prepared** to teach comprehension of texts. Twelve out of 16 lecture participants thought students were prepared. Three participants thought the students were somewhat prepared. One participant selected two choices – somewhat prepared and not prepared. In her explanation she stated that she doubted students understood all aspects of comprehension of textbooks well enough to teach their future students. It would appear that 12 out of the 16 participants agreed that students were prepared to teach comprehension of content area texts. However, a closer examination of the explanations the 12 participants provided indicated that, in general, they understood the question to mean whether or not students were well prepared to teach.

ELCS6 stated that students go through a two-year program which "should prepare them" to teach comprehension instruction of those texts they will be using with their students. **L8** noted

Table 3

Preparedness to Teach Future Students Reading to Learn in the Content Areas

How prepared do you think students are to help their future students to comprehend the texts they will use to teach their subjects once they graduate?		
Choices	Responses	Examples of explanations
Very Prepared	1	• Students undergo a two-year academic program which should prepare them for that
Prepared	12	• Listening to their arguments on a given concept • Marking their scripts tells how they interpret what they read • Practical and reading activities these students are involved in during their training exposes them to the various texts • Students have been assessed continuously both in theory and practicals in their subject content and satisfied the examiners.
Somewhat Prepared	3	• Students leave college with muddled up concepts so their first year of teaching is a continuation of learning • Our students are very dependent on tutors' notes and when asked to research on a topic and present their findings they are not able to do so well
Not Prepared	1	• Some are well prepared – those who read a lot. Others who just read for BASIC REQUIREMENTS not very prepared

that teaching practice preparation (TPP) and teaching practice (TP) are further avenues where students hone their experiences with diverse texts and to master subject to teach at secondary. **L9** said the level of learning at Elimu College is higher than high school and so students should not have any difficulties using texts to teach their subjects. **L7** opined that practical and reading activities students are involved in during their training exposes them to diverse texts. The assumption in **L7, L8, L9,** and **ELCS6**'s comments is that the length of time spent at Elimu College and the exposure to a variety of texts should be sufficient for students to learn from them (texts) as well as to use them for future instruction. It might be assumed also that such knowledge and skills can be picked up without explicit instruction. Whereas these assumptions might be true, what about situations where lecturers rely exclusively on their notes and students

do not have access to the texts, either because they are few, or because the lecturer notes are sufficient for them to pass their examinations?

L9 differed somewhat from other lecturers' viewpoints. She provided a conditional explanation indicating that those students who read a lot are better prepared but those who read for BASIC REQUIREMENT (**L9** said *basic requirement* with a lot of emphasis) were not prepared. She added further that students who read a lot often read ahead of the lecturers, ask for more references other than those prescribed, and ask questions that show they have interest in the subject. The three lecturers who thought students were somewhat prepared had this to say. **CAL3** observed that there are some students who "leave college with muddled up concepts so their first year of teaching is a continuation of learning." **CAL3** stated that many students were very dependent on tutors' notes and when asked to research on a topic and present their findings they were not able to do so well. She stated also that lecturers did not give guidance on how to use texts in meaningful ways other than merely referring students to textbooks without specific tasks to be done AND providing no follow-up.

Interpersonal and Interdepartmental Relationships

Findings from this study indicated that interpersonal and interdepartmental ties are not as strong as they should be for effective functioning of Elimu College. One reason might be because of suspicion and mistrust of one another. According to **CAL1**, Elimu College is a place "where people are individuals…the cohesion between… tutors in this college is very low…people don't visit one another and there is lack of togetherness." **CAL1** also discussed challenges one is likely to encounter should they wish to conduct classroom observations at Elimu College as indicated in the excerpt below.

> Let me be very frank. You see, tutors in [Elimu College] would feel abused or insulted if someone from the English department now came and sat in my class to assess, might be

> to evaluate my mother tongue interference with the language and maybe a wrong statement when I am teaching my mathematics. I would take a lot of offence. Because first of all, I passed my TP, what is this one who is also a teacher like me coming to do in my class? …People are very, they don't feel comfortable. And one has to be careful. As you sit in that class, what is the purpose? You want to correct the teacher? Or do you want to correct the students? Because if it is the teacher, you will have a lot of problems…there will be a lot of resistance…some of them will throw you out… they will even embarrass you.

CAL1's quote brings to the fore issues of creating rapport with participants and outlining purposes of any classroom observations to be made. He also foregrounds issues of resistance, suspicion, and vulnerability of lecturers. An interesting question to pose is, "Why would lecturers feel abused, insulted, or uncomfortable being observed teaching?" Commenting on what should be done **CAL1** offered "There should be a way of unifying. I mean, bringing people together, to feel we are members of the same community here, we are departments working towards a common goal."

ELCS4 noted that there seems to be a ranking of departments at Elimu College where some departments are ranked higher than others. She said,

> If you are a graduate, it doesn't matter if you are a graduate of [*mentions subject*] or are a graduate of [*mentions subject*]. What is the difference? The difference is the same. You graduated. If you have your degree, the [*mentions subject*] person has. The only difference is that you are going to different fields and in any case, all these fields, there is somebody who has to do it. There is no way why [*mentions departments*] should feel that they are doing a better job than maybe [*mentions departments*]. So your dealing across (referring to my study) is the best.

ELCS4's excerpts above indicate some lecturers at may have been made to feel insignificant and their role inconsequential in the overall scheme of things at Elimu College. She felt this injured interpersonal relationships and advise-seeking. She saw my study as an important step in the right direction to help lecturers work collaboratively and to view each other on a more equal footing. One implication concerning sense of belonging would be willingness to consult one

another about problems and challenges the lecturers face in their subjects. She said, "And the teachers uhm, when you are good at a topic, like I like minute writing, report writing, somebody can approach me to go and teach for them." She mentioned also about mentoring of beginning and/or new lecturers when she said, "And when you come or when there is a new tutor, the other tutors who know what is happening they take time to help you out."

ELCS4 thought that through professional development courses, attitudes could be addressed, and collaborations and sense of belonging fostered. She said,

> In fact I have been toying with the idea… I hadn't had much time but I had been toying with the idea of having a seminar, that kind of seminar, just to sensitize our tutors but I am glad for SMASSE because we did it, yeah, and that is why we are meeting. Once we meet and see, 'How can we support one another? How can we, you know, yeah, support one another for the betterment of the students and ourselves as a community?' So I am glad it is coming through there [*SMASSE*] so we don't need to organize.

ELCS4 mentioned the SMASSE project, the only professional development arm that is actively involved in in-servicing high school maths and science teachers and had, more recently, taken on the role of in-servicing lecturers at Elimu College. **ELCS4** claimed lecturers initially resisted SMASSE but they were beginning to come around. **ELCS4** thought dealing with lecturers would be an important first step in enhancing interdepartmental- and student-lecturer relationships. She said,

> Even if you talk to the students and a tutor goes in and says this is not as important as it is, then you can't go far. So if the tutors, if we can tackle the tutors, the students have no problem because the tutors should be conscious, they should be doing what they are expected, you know, they will be up there as role models. Then from there it is so easy to talk to the students. But you tackle the students, who is going to cater to the tutors who may be telling them that language is, you know, is just a support subject?"

ELCS4 described one in-service session in which two lecturers from the English and Communication Skills department presented a paper on the significance of language as far as teaching is concerned and how they used the analogy of customer care to reach lecturers. **ELCS4**

said that this seminar had “gone a long way” in changing tutors’ attitude towards language use for communication and teaching. She said,

> I think the attitude is changing. I have had a few tutors come to me and telling me they would like us to organize and have them have sessions in language, you know the mini-talks, the phonetics, the writing of minutes, the writing of letters, all those. But that a low, quite (chuckle) what can I say (chuckle) there is a saying they say, anyway, it was at least a drop in the ocean, yeah. A drop in the ocean. However small, but I think we are getting somewhere. Because from there we are able to tell somebody. Some people are now conscious of what they are saying because then they are like ah! It matters what we say, it matters how we speak, it matters how we address the students. It matters our relationship with the students, which is one of the reasons why the students are finding sciences very hard. Some of the tutors are making it so abstract, you know, removed it from reality, hmm, I think that has been good and even from this meeting. I was telling you I am organizing we are trying to see how the sciences and the arts can work together.

ELCS4 pointed the importance of interpersonal and communication skills and their effect on comprehension of science. She reiterated that all departments should work together for the betterment of the students.

ELCS4 advanced some reasons why people can become resistant to changes. She said,

> Because we are saying with more exposure. I think that sometimes people are not exposed. Because, you see, I am used to doing things in a certain way. Until such a time when someone tells me, Mrs. [*name masked*] what you are doing is wrong, I can’t know it is wrong. So also exposure, we need to organize more seminars and awareness amongst ourselves, amongst the students, so that it doesn’t look like something hard. It is part of what we are doing everyday. And that way I think we will go a bit further. We will make a step further than where we are.

She used the terms ‘exposure’ and ‘awareness’ to refer to knowledge that can be gained through interaction with others in professional development forums such as the one SMASSE offered. Interesting is **ELCS4**’s willingness to receive constructive criticisms from her colleagues as a way of becoming more knowledgeable. Such willingness might mean being vulnerable but **ELCS4** seemed willing to take the risk if that exposure was helpful.

Closely related to one's perception of the benefit to be derived from active involvement in activities would be their sense of commitment or the lack of. **ELCS4** observed,

> Our tutors need to take their work more seriously. We need to take our work more seriously than we do. A lot of times people just teach and go. People teach and go. If they took more time with what they are doing, there would be a difference, if they took more time. So just the time. But our tutors, if they have something to do, they will do.

The above excerpt indicates lecturers may not be as committed to teaching as they should be. I wonder why they "teach and go". What are their thoughts concerning belongingness to Elimu College?

Concluding Summary on Lecturer Perspectives

All six participants cited lecture method as their primary instructional technique through which they dictated notes to students. Students are expected to listen attentively, take down notes, and ask questions or seek clarification as need arises. During data collection, all the lecturers I observed used this method for instruction. According to **CAL1**, this strategy was imperative in the absence of textbooks and as an important scaffolding technique to mediate difficulties associated with reading scientific texts (as discussed by **CAL2**).

Maths and sciences are unique subjects, which require specialized effort and instruction for students to comprehend. For one, content area subjects such as maths have a particular language and specialized vocabulary specific to the field, as well as everyday words that may have different meanings when used in subject contexts (Corasaniti Dale & Cuevas, 1992). Collectively, lecturers viewed comprehension and reading to learn as paramount and imperative to a maths and science teacher in Kenya. Although content area lecturers purported not to offer content area literacy instruction to their students, a closer analysis of research findings about how they planned and taught their lessons indicated they had comprehension as the ultimate goal of their instruction. All three participants – **CAL1**, **CAL2**, and **CAL3** - self-reported that they used

certain strategies and skills to facilitate student comprehension. These included use of: visual aids/mental images such as real objects, diagrams, and charts; analogies to establish comparisons between the new and known; note-taking, summarization, and writing to learn. **CAL2** mentioned the importance of tapping into students' pre-requisite knowledge (or prior knowledge).

Five lecturers interviewed thought students did not engage in reading for leisure, although they provided varied reasons for their observations. Although the five acknowledged students lack time to read due to curriculum overload, they still maintained that it was important to read beyond curricular dictates and demands if students were to be more knowledgeable about themselves and the world around them. This recognition may have compelled them to design assignments and learning activities in ways that encouraged students to engage in scholarly research: by reading, writing notes and presenting findings in different class sessions. For instance, use of mini-talks in English and communication skills department, reading assignments in biology, and research oriented problem-sets in physics. These strategies became avenues through which students sharpened their (re)search, reading, and reading to learn skills. There seemed also to be a general consensus in the findings indicating the need to improve the rigor of scholarship engagement if students were to gain confidence in consuming and producing information using appropriate scientific discourse. Collectively, lecturers alluded to purposes for which students read and motivation for reading as being important factors that determine student readership. Further exploration of student motivation and interest in reading may be worthwhile.

Findings from this study indicate that lecturers structured or purported to structure students' learning environments in ways that promoted social interaction and learning among peers. For example, **CAL1** used problem solving sessions and mixed-ability grouping to encourage student participation and learning from each other. **CAL3** used tutorials while **CAL2**

used research oriented problem-sets to achieve a similar goal. **ELCS4**, **ELCS5** and **ELCS6** used mini-talks as avenues not only for students to research and present findings to their peers but to also receive feedback about their communication skills. **ELCS4** claimed she used group work in her class to facilitate student interaction. In line with constructivist thinking, social interactions seemed imperative for general comprehension and reading to learn. **CAL1** claimed that there was no greater joy than seeing a 'weak' student stand up in front of the class and solve a maths problem on the chalkboard. It might be safe to posit therefore that all six participants interviewed viewed students as active participants and co-constructors of knowledge. Students as knowledgeable Others (Vygotsky, 1962) are a valuable resource for scaffolding comprehension and learning. At the outset, this notion may seem to stand at odds with assumptions associated with transmission mode of teaching. It appears each of these lecturers used any and all approaches to facilitate learning (including the lecturer method as well as actively involving students in the learning process).

Creating an environment that fosters formal and informal social interactions remains a challenge for Elimu College. Interpersonal and interdepartmental collaborations and partnerships were proposed as crucial to meet that goal. In line with constructivist thinking and as espoused by **ELCS4**, all lecturers in need to identify with Elimu College and to feel part of the system. An underlying philosophy in these sentiments can be captured by this statement: I am because we are, and since we are, therefore I am (Mbiti, 1969; 1975). This brings to the fore issues of the collective self, one being a person through other people, and relationships, not entities, being the essence of being.

CHAPTER 6

STUDENT PERSPECTIVES

One of three research questions sought pre-service teachers' perspectives on: (a) comprehension in relation to general reading, (b) comprehension in relation to subject areas and; (c) preparedness for content area literacy instruction upon graduation. In this chapter, I present findings from the 100 questionnaires returned from 130 distributed to the pre-service teachers. This represents a 77 per cent return rate. The results are informative with regard to students' perspectives on their abilities to comprehend college texts and their preparedness to teach secondary students to do the same (see Appendix J for a copy of the questionnaire).

Comprehension in General Reading

Perspectives on comprehension were sought through two questions in which pre-service teachers wrote comments about their ability to read texts of all kinds and about the kind of texts/passages they find most useful, significant and understandable in their learning from reading. Almost three-fourths of the students perceive themselves as able to comprehend all kinds of texts. This leaves one fourth who think they are not as able as they want or need (see Table 4).

Definition of Comprehension

Students conveyed a view of comprehension as a means to an end. Comprehension is what helps them know the instructions, guidelines or objectives. Comprehension is what enables answering questions. All of these comprehension outcomes help them pass examinations. Students also used language that suggested that meaning in comprehension is a received process

Table 4

Pre-service Teachers' Ability to Read Texts of all Kinds

How would you rate your ability to comprehend/understand texts of all kinds?		
Choices	Responses (Out of 100)	Examples of Explanations given
Very Able	3	- Throughout my study am able to understand any piece of information that I read **(S33)** - Due to my excellent achievement of my studies although I missed university by only one point and my excellent performance in other areas like seminars other agricultural activities, sports and many other (**S11)**
Able	71	- When I learn a concept I am able to understand it and be in a position to remember it when asked or answering examination questions (**S21)** - I have the potential to understand texts of all kinds if I put effort (**S15)** - This is because of the insight that I have to reason out critically (**S14)** - Cause I can read, understand and analyze the information given without much difficulty **(S25)**
Somewhat Able	15	- This is because subject like chemistry has got some concepts which require a lot of thinking and the rate which we are taught with doesn't allow you even to think i.e., a lot of work within a short period of time (**S45**) - Some texts difficult to understand and so getting what they contain is not easy **(S3)** - Because after I have read the fact and try to learn what I have read I find having forgot some things that needs me to go back to the text again **(S44)**
Needs Improvement	11	- I keep on forgetting what I have read; also I don't catch up what I have been taught unless I re-read generally on the notes and textbooks **(S32)** - Sometimes the terminology(ies) used are difficult or rather not straight forward as should be expected **(S22)** - I need to dig deep into different texts to enhance my understanding **(S37)**

where the reader “understands meaning” and “analyzes information given.” These views of comprehension do not acknowledge the role of the reader in using his or her background knowledge to construct the meaning of the text.

Student perceptions of comprehension were often expressed in terms of academic achievement. Students gauged their comprehension based on their performance on various measurements and evaluation procedures. However, the performance that students view as acceptable varied. Some wrote “perform averagely on tests”, “No mark below standard in any science subject”, “I score no less than C+ in my academic subjects”, “performance either average or above average.” One student simply said, “That is why I have managed this far in Elimu College.” The data show that for many students, what matters are external indicators of comprehension. However, there were a few students who expressed the view that comprehension had to do with understanding concepts and their ability to apply those concepts to real life situations needing quick and timely decision-making and critical thinking. One student expressed a heightened sense of efficacy by writing that the ability to comprehend helped him to critique and to edit all texts he encountered as well as help him engage in scholarly research at the library. These perspectives place the locus of control for comprehension within the reader as opposed to knowing you comprehend because you have passed a test.

Comprehension in Subject Areas

To answer this research question, I asked students three questions: State the kinds of texts/passages you find most useful/significant in learning and easy to understand. How would you rate your ability to comprehend/understand texts in mathematics and science (see Table 5)? How does reading comprehension instruction help you in your subject areas? Analysis of student responses showed that comments on reading to learn in the content were determined by the type

of content area texts and within reader factors (including attitude towards expository texts and self-perception about ability to navigate expository texts). Similar to their views on importance of comprehension, students stated also that ability to read to learn content was important to: (a) understand and follow instructions, (b) decipher the intent of questions, (c) answer questions, (d) formulate own questions, (e) summarize important information, and (f) excel in examinations. Other reasons provided included understanding content, covering more ground in reading, improved concentration, developing vocabulary, organizing, internalizing, and interpreting information. **S49** said, "It helps in understanding the theory about certain concepts; helps in understanding and answering of questions; equip me with sufficient vocabulary which helps me in understanding other texts." **S65** said, "It helps me to understand various concepts in my subject areas. It actually allows me to interpret what a certain text is about."

Texts Factors

Student responses included statements referring to texts as being either wordy or containing extraneous information or having technical vocabulary. For instance, **S59** pointed out that "sometimes the terminology used in texts is difficult or rather not straight forward." **S26** said, "Some texts are very much made to sound more verbose than easy to understand. Some words need to be referred from the dictionary." **S35** said, "My rate of comprehending texts depends on the choice of words of different subjects and I have found I understand to some extent." **S69** said, "I am able to comprehend many of the texts but some difficulties arise when the texts contain very many technical words in the subject which I study." Some students acknowledged that some subjects are concept-laden. **S1** said, "Chemistry has got some concepts which require a lot of thinking and the rate at which we are taught doesn't allow you even to think i.e., a lot of work within a short period of time."

Student responses are consistent with research (e.g., Barton et al, 2002) which indicates that the conceptual density of maths and science materials is one of the major reasons for students' difficulties. Indeed, the quality of the writing determines the readability of textbooks. Those texts which slow down comprehension are said to be inconsiderate texts (Armbruster & Anderson, 1984). Inconsiderate texts can bore and bewilder even sophisticated adult readers (Armbruster, 1984). Students attempting to read inconsiderate texts may not only encounter material that lacks coherence, they may also be forced to deal with texts that assume an unrealistic breadth and depth of background knowledge on a subject (Beck, et al., 1991).

Textual features and organizational structures can facilitate or impede comprehension. Students identified features in texts that influenced their choice of texts to read, for instance, brevity and precision**. S25** said, "I find it easy to learn things or texts which need brief explanations and a lot of calculations. I don't like reading a lot of long passages or texts which need a lot of cramming." Other responses showed preference for texts which have detailed explanations. **S47** said, "Clear and elaborated texts are better. They should be those that contain explanation of scientific themes, derivation of formulas, explanation on principles and scientific laws, explanations that move from the most basic concepts in a given subject". Whether or not the language used in texts is considerate was mentioned too. **S10** said, "I prefer short texts with simple and straight forward English without strong vocabulary that needs you to use a dictionary." Other students preferred texts that relate to students' immediate environment. **S52** said, "I prefer texts that relate to the immediate environment and are applicable in my day to day life" and **S12** said, "I like texts which are realistic and on current challenges facing the young people, the current epidemics e.g., AIDS and also on our social life. The layout and format of texts was mentioned too. **S67** said, "Texts that are arranged in a logical sequence without

skipping any stage/information are easy to comprehend. Also related texts/information, which follow one another are easy to comprehend. Sequencing matter a lot for comprehension." One student mentioned she preferred texts that require application of knowledge when she said, "I like passages that require application for this enhances cultivation of interest and memory." Other features mentioned included: (1) are easy to understand, (2) have captivating illustrations, (3) provide comprehensive examples, and (4) cover interesting topics.

Reader Factors

Responses included statements, which referred to self-evaluation of reading behavior and locus of control with regard to reading. For example, comprehending a text depends on one's concentration at the time of reading. Voluntary concentration leads to understanding of a given texts. The amount of time spent on texts was mentioned. **S77** said, "I am able to comprehend as long as I prepare in advance before the exam time. **S14** and **S56** pointed out that comprehension of a text depends on "one's attitude [towards a text] and determination. If positive, the text can be easily understood." **S11**'s response confirms this assertion. He said, "I have a positive attitude towards all texts which has made me enjoy every sort of material that comes in my way; and I do enjoy it a lot." **S10** pointed out that **s**he is able to understand "if taught well" and that she can remember very well if she reads through at her own time. Comprehension "depends on the mental preparation of the person e.g. a person who does not like politics cannot put effort in comprehending things dealing with politics" (**S1, S33,** and **S16**). **S33** said, "With subject such as education (which requires lengthy reading) I am average student - meaning I'm used to short notes and calculations." **S16** said, "There are some texts which are interesting than others; that is, I force myself to understand them." **S5** reported that concept-laden and challenging texts require "time and concentration" or what **S1** refers to as "a lot of thinking." In short, students

noted that interest, concentration, devotion, sacrifice, and determination directed their persistence at difficult reading tasks.

I asked pre-service teachers about their ability to comprehend content area texts. Almost three-fourths of the students perceived themselves as able to comprehend maths and science texts. This leaves one fourth who thought they are not as able as they want or need to be as shown in the table below (see Table 5).

I also asked pre-service teachers the strategies they use for improving reading to learn in the content areas. Analysis of data revealed also that some students employed fix-up strategies, other than devoting time and concentration, to facilitate comprehension when they realize it is faltering. Two students self-reported that they used re-reading for comprehension and recall of information. For instance, **S44** said, "I can comprehend the text with little ease. This is because the material mostly contains foreign terminologies which unless you read twice or thrice may not come out clearly and thus am able to comprehend the text (*after reading severally*)" while **S32** said, "I keep on forgetting what I have read. Also I don't catch up what I have been taught unless I re-read generally on the notes and textbooks." Two other students used different terminology, constant reviewing and going back to the text, to refer to re-reading. **S13** said,

> I can understand and comprehend text on my first reading, though for short term remembrance. Constant reviewing is required for me to comprehend for a longer time. Some texts are easy to understand especially those which deal with what I like most and where my talents are but some I have to put much effort to understand i.e., those I need to understand as they would determine my success in the profession.

S13's quotation introduces five other important concepts: short-term and long-term memory, preferences, and effort. Constant review helps him to commit what he reads to long-term memory.

Table 5

Pre-service Teachers' Ability to Comprehend Maths and Science Texts

How would you rate your ability to comprehend/understand texts in mathematics and science?		
Choices	Responses (out of 100)	Explanations of explanations given
Very Able	11	- I like maths and science and I do enjoy when I am reading them all the time **(S2)** - Since I chose my best field of sciences and therefore I have better attitude towards them than the subjects in other fields **(S11)**
Able	66	- The concepts I am taught in my subject combination I am able to understand it and reproduce it during examination times **(S66)** - Because my performance in maths and science subjects is above average **(60)** - It is easy for me to retain concept learned for a long time and easy to apply them when need arises **(54)**
Somewhat Able	15	- Some of the science concepts and theories are a bit hard to understand and prove. Some formulas in maths are hard to derive. Terminologies used some of them are unfamiliar **(S85)** - Because sometimes I may experience some difficulties in the subjects **(S79)**
Needs Improvement	6	- It needs improvement because if I compare my performance in secondary school with the way I perform now, it is too low **(S94)** - Since I don't get unless explained to **(S88)**

He also finds texts that appeal to his interests and talents easier to understand. For those texts he does not have a preference for he recognizes the need to "put much effort" to understand. **S15** acknowledges the importance of effort. She said, "I have the potential to understand texts of all kinds if I put effort." She referred to re-reading simply as going back to the text. She said, "After I have read a fact, I try to learn what I have read. If I find having forgotten some things that need me to go back to the text again, I do that."

Some students noted that doing lots of practice helped them comprehend their subject areas. For instance, **S90** said, "I try every arithmetic problem I come across and also read and try to answer several questions in sciences, especially biology and chemistry." **S95** said, "I understand some concepts easily but I have to keep on reading and practicing to fully understand the concepts and remember them for a longer time." **S3** reported about digging deeper for meaning from texts. She said, "I need to dig deep into different texts to enhance my understanding" while other students thought reading widely would facilitate understanding texts of all kinds including those in maths and science.

Preparedness to Teach Future Students Reading to Learn in the Content Areas

Pre-service teachers' perspectives on preparedness for content area literacy instruction were sought through three questions: (1) How important is it for you to teach your future secondary school students to comprehend texts in the texts in the subjects you will teach? (2) How might you help your future students to comprehend the texts they will use to read in the subjects you will be teaching? (3) What recommendations and suggestions do you have for Elimu College with regard to preparing pre-service teachers to comprehend mathematics and science teachers?

Importance of Teaching Reading to Learn in the Content Areas

"To teach students on how to comprehend and understand text is very vital. Without understanding the text there would be no learning even in science" (**S28).** "For that reason, "Teachers should be taught on how to comprehend all texts so that they can be able to help their students to also be able to interpret texts" (**S7).** Table 6 below provides responses on the importance of teaching future students to comprehend content area texts. Students' responses

were collapsed into four broad categories: (1) for understanding, (2) for learning, (3) answering questions and passing examinations, and (4) self-satisfaction.

All students acknowledged that it is important to teach their future students to comprehend the texts they will be using to teach their subjects. Students cited understanding as the optimum goal of any instruction. **S45** said, “Students need to grasp every information in those textbooks.” **S67**’s views concurred when he said, “Students must be taught well to comprehend texts. In all subjects understanding is required for transfer of knowledge to take place. The ability of a student to comprehend determines his achievement.” **S69** stated that it would be important for students to “acquire the skills and knowledge in the subjects more easily and efficiently.” Other responses reflected how future students would benefit from reading to learn. For instance, **S68** said, This is important for them to understand issues and develop interest” whereas **S78** said, “They will be able to look for information from other sources apart from what you have given them i.e., they will not solely depend on what you teach them in class. This will enhance good performance.” **S93**’s views concurred when she said, “To enable students to understand texts as they study on their own. These views indicate equipping students with skills for lifelong reading and learning “for education is for life not for passing exams.” Some students’ views indicated that they want their students to be interested in the subject matter and one way to do this was to make the texts they use more comprehensible. **S96** said, “By them understanding the texts, their mental stress/fatigue will be reduced; they will love the subject; they will be able to comment and draw conclusion from the same.”

Table 6

Pre-service Teachers' Perspectives on Importance of Teaching Future Students Comprehension of Content Area Texts

How important is it for you to teach your future secondary school students to comprehend/understand the texts in the subject area that you will teach?		
Response Choices	No. of Respondents	Example of comments
Very Important	86	- They should understand texts so that they may answer questions well and pass their exams (**S1)** - For them to pass exams and increase their knowledge they must understand texts well **(S3)** - The success of students will reflect my capability. Their understanding the content proves my ability **(S14)** - the students need to grasp every information in those textbooks **(S45)** - It will assist them to perform well in his/her exams. Knowledge is not knowledge if not retrievable later in life **(S55)** - For them to understand issues and develop interest (**S82**) - They will be able to look for information from other sources apart from what you have given them i.e., they will not solely depend on what you teach them in class. This will enhance good performance **(S29)**
Important	14	- the world is becoming more scientific and I would like them to know much science and be able to apply it **(S34)** - Students must be taught well to comprehend texts. In all subjects understanding is required for transfer of knowledge to take place. The ability of a student to comprehend determines his achievement **(S56)**

Helping Future Students Read to Learn in the Content Areas

Pre-service teachers provided many ideas, strategies, and skills they would employ to teach their future students to comprehend content area texts. **S16** stated lecturers should "advise their students on effective way of studying for maximum retention." **S1** suggested the need to invite "guests/qualified resource people who have experience in comprehension to give lectures on comprehending of texts."

S34, S39, S70, and **S100** stated that they would encourage and motivate their students to read as many texts as possible. **S41** said, "For students to be able to comprehend well they have to read a lot of books and story books to be aware of good reading skills." Some students (e.g., **S11, S87)** indicated that they would guide their students on how to study effectively and manage their time. **S77** said, "I will teach them to make personal timetables that will allow breaks between several reading intervals to make them understand better the text involved (over-learning)." **S37** on her part recommended that

> Tutors should guide pre-service teachers on better ways of comprehending all texts in maths and science mainly through practicals; the tutors should specialize on teaching pre-service teachers on the best methodologies of teaching rather than too much specialization on the theory part of it

S12 said,

> Students to be given texts to read and later explain how they have understood it. If possible in front of other colleagues with the supervision of the English teacher. This should be done at least once in a fortnight. This should include all students first years and second years because its another way of preparing them well to be good speakers before they join the teaching practice schools

S3 and **S42** stated they would encourage strategies such as summarization to facilitate comprehension. **S63** stated he would ask students to scan texts, re-read (see also **S80, S84, and S97**), and identify main concepts as a means to enhancing comprehension. On re-reading **S92** said,

> They have to read at least three times: (i) read and analyze text (ii) the student has to identify the problems to solve from the text (iii) the last reading is for getting the solution for the problems identified

Other skills to be taught to future students included identification of main points (**S95**). **S90** (see also **S91**) said,

> I will teach them to use memory devices where possible to enable them to remember concepts; I will also teach them/advice them to be referring to whatever I have taught them at their own time/revising

S9 and **S23** stated that they would encourage students to "read between the line" implying reading the text and subtext or reading critically. **S71** said,

> Teaching them how to read and understand text; providing reading materials and sample texts on their understanding and comprehension; assisting the student where necessary in relation to understanding and comprehending text

S24 said she would focus on vocabulary by stating he would teach his students "scientific terms and words related to the subject area" while **S36, S42, S51,** and **S88** stated they would explain to students any difficult or key words and terms. **S10, S85,** and **S95** emphasized they would model strategies through teacher demonstrations. **S48** said,

> Teachers should avoid the use of unnecessary vocabulary which makes texts abstract; greater emphasis to be put on comprehension since comprehension is the basis of learning; students should be made to understand texts and complex words from the way they have been used

S5, S12, and **S15** said they would use guiding questions, including student-generated ones (**S13, S35**), past paper questions (**S15, S16**), and problem-solving sessions (**S25**), and questions at the end of each lesson (**S47**) to aid students' comprehension. **S25** said, "problem-solving attracts/captures attention in learners. Learners capture concepts and the chances of forgetting are reduced. **S29** said he would set questions and have students do them orally in class as well as let students interpret and answer questions on their own. **S20** said,

> I will encourage them to formulate question for given text they want to read; scan through text with the formulated questions in mind; take note of the key points; read the questions again; read through the text again as you synthesize actual answers to the questions

Some students (e.g., **S33, S40, S46**) though questions would promote scholarship and engagement in research. **S46** said,

> By giving them assignments, research work whereby they go and read texts in the school library. Alternatively books can be bought and given out to students to read so as to understand the subjects well even as they do research or project work

S54 said, **"**Research enables the student teachers to move to various texts of different authors and therefore learn to interpret information in the future to their students." To encourage research, **S39** stated that pre-service teachers should be given time to express what they understand concerning various topics during class lessons so that they can feel challenged to research much and understand texts. **S83** said, "Elimu College should encourage student to research for their own instead of spoon-teaching the students and thus discourage brain work and critical thinking of what is required." **S85** said,

> The teaching staff to be offering supplementary questions that requires an individual (student) do research. As the student do research, he/she will be able to understand the texts well. Also find there is no time for the research, so the teaching staff can adjust the time table to create time for research work

S6, S31, and **S78** indicated they would teach from simple to complex and from known to unknown (**S45, S49, S66,** and **S69**) and avoiding abstract texts (**S50**). **S37** said,

> By giving them content from the very basic that most teachers tend to ignore. These basic concepts when well known, a student can actually develop even a forgotten formula eventually

S43, S79, and **S83** stated they would draw on students' experiences and pre-requisite knowledge by actively involving them in the teaching/learning process." **S44** stated he would make his explanations clear using simple language.

Many students, (e.g., **S6, S15, S18, S30, S48**) indicated they would use teaching aids and examples from real life (**S41, S43, S44**) and students' immediate environment (e.g., **S32, S45, S49, S62**) to teach their subjects. **S15** stated that he would make his lessons more interesting and cultivate students' memories for the subject. **S52** said he would take students on excursions and fieldtrips to familiarize them with their immediate environments.

S18 and **S39** indicated they would encourage group work and formation of study groups for reading to learn. **S22, S35, S52,** and **S98** said they would use discussions to encourage student participation and learning from each other.

S6, S19, S72, and **S75** emphasized the need for good teacher-student interactions so that students do not fear but rather can ask any questions freely. **S25, S27, S53,** and **S72** claimed they would cater for individual differences in their classes.

Concluding Summary on Student Perspectives

In this chapter, I reported findings from pre-service teachers at Elimu College. Collectively students who responded to the questionnaire viewed comprehension as a means to an end – passing examinations. From their responses, what seemed to matter most were external indicators of comprehension. Many students also viewed comprehension as a received process and in essence did not seem to consider the implications of prior knowledge on comprehension. In other words, they placed the locus of control for comprehension outside of readers. Interestingly also, 75 percent of the surveyed student rated themselves as capable of reading texts of all kinds including those in maths and science.

Students expressed concern about conceptual density in maths and content area texts and indicated preference for texts with user-friendly textual features such those containing detailed explanations of technical terms and vocabulary and those that have captivating illustrations. In their responses, students noted, however, that "not all texts are easily understood" **(S59).** Students stated also that in the event texts are difficult to navigate, interest, concentration, and devotion helped them persist at reading tasks.

All student participants acknowledged the importance of preparing their future students reading to learn from content areas. Although each student's responses included between one to

three ways in which they would facilitate reading to learn. Collectively the responses included strategies such as: Use of writing by focusing on main ideas and summarization; equipping students with study and time management skills; use of re-reading and reading widely; adjusting reading speed depending on the purpose by, for instance, knowing when to scan or study a text. One student mentioned the use of memory devices and encouraging students to read critically. Several students mentioned use of appropriate teaching aids and real life examples to scaffold student understanding, pre-teaching vocabulary, technical terms or key words in texts to be read; modeling of relevant strategies and skills; use of guiding questions, and during instruction, starting from simple to complex and from known to unknown as well as drawing on students' prior knowledge and experiences. Finally, some students emphasized the importance of creating good rapport and interpersonal skills with their future students.

CHAPTER 7

DISCUSSION, RECOMMENDATIONS, IMPLICATIONS, AND CONLUSION

The purpose of this study was to find out how pre-service teachers are helped to comprehend required readings and prepared to teach future student reading to learn in the content areas. From what I learned about how reading is taught in the United States, from my own experiences and expertise as a Kenyan educator, and more importantly, from the data analysis, I distilled lines of inquiry with which I organized this chapter, knowing full well how they overlap and might be contested on a number of grounds. I invite readers to engage with them. In the discussion section, I showcase suggestions gleaned from the study as basis from which I make recommendations (in the recommendations section) for further development of students' comprehension and reading to learn. I request readers to view these as beginning points for further inquiry and as an invitation for scholarly involvement. Moore et al (1983) posit that identifying gaps supplies researchers and curriculum developers a point of departure into present-day concerns for which the past provides little guidance; thus, new knowledge can be constructed.

Discussion

One of the questions I asked participants during data collection was what lecturers at Elimu College could do to improve the following areas relevant to my research study: Teaching, general comprehension, reading to learn in the content areas, student readership, and preparedness to teach future students reading to learn in the content areas. Below, I present some of their suggestions and recommendations on how to improve in those five areas.

Improving Teaching

Findings from this research indicated that lecturers used the lecture method to dictate notes to their students as a way to circumvent the book shortage. Two participants provided divergent suggestions regarding use of lecturers note: revising them regularly and moving away from using them. **CAL2** proposed that lecturer notes should be changed and updated regularly to match students' diverse and unique needs - bearing in mind each cohort of students is different. He said,

> You make notes because notes are not supposed to be in a book. Notes are for that class. For me I believe notes are not for a day. Days don't look alike. So if you came to my class next time you will find I have made other notes.

On the other hand, **ELCS6** stated that although her department used lecture notes for instruction, there was a need to move away from issuance of lecture notes to involve students more in note-making in order to help them to be more responsible for their own learning. She said,

> Like in our department we normally give the students lecture notes, but we never tell them go do this research on this and that and that. So maybe what, I feel what we can do, in order also to make them know how to do some research work and also to be able to read for themselves because basically they depend too much on our notes.

ELCS6 noted that perhaps lecturers were limiting students' opportunities to become independent, intellectually speaking, by their instructional styles and the way they managed their classrooms. In this regard **ELCS6** said,

> I think it is the whole structure of things because I believe when we, you know, when these students come, right from the word go, they know we just stand there and we lecture our notes and we have all prepared our notes and we go to lecture to them. But I think we don't give them that opportunity. We don't give them that opportunity to go out there, because you see, if we give them they won't say no. I think we need like to pick a topic and say I expect you to go and find out more about this. Okay not in everything. But in some things, you know, they go and do research and even they come and present uhm to the other students.

Other findings from the lecturer and administrator questionnaire provided more general suggestions for lecturers to examine and revise their teaching practices and approaches to facilitate comprehension and reading to learn. These included: (1) Developing student-oriented lesson plans; (2) Weaving content area subjects into English and communication skills instruction; (3) Incorporating comprehension instruction in content area instruction; (4) Relating theoretical to practical aspects of science and mathematics subjects for more understanding; (5) Marketing subject matter in ways that draw in and sustain student interests and curiosity; (6) Improving hands-on activities for students; (7) Developing students' competence in their subjects by involving them more; (8)Tutoring weak students; (9) Developing curiosity by giving references and updating the students with cutting edge information and knowledge; (10) Giving relevant texts and when testing students to see whether they have grasped ideas in them; (11) Using information technology to enhance methods of teaching; and (12) Testing beyond lecturers' lesson note as a way of encouraging reading beyond class requirements.

Improving General Comprehension

From the lecturer and administrator questionnaire, all lecturers and students were encouraged to be competent in the language of instruction – English**.** Commenting on communication skills **CAL2** said,

> The needs assessment is our behavior, our activities in class are wanting. One of them is communication. Communication! The words we use create breakdown in communication. As much as we have the content, we are unable to pass it one. We can't disseminate it because we have, as one would call, unable to communicate the same.

L8 appeared to concur with **CAL2** by suggesting that all lecturers show interest in improving their communication skills – both oral and written. Suggestions advanced to improve pronunciation and public speaking included: (1) use of the language laboratory for pronunciation

remediation; (2) discouraging the use of code-mixing (such as the use of Sheng, a mixture of English, Kiswahili, and Kenyan Indigenous languages); (3) emphasizing English as the medium of communication in schools and encouraging "thinking in English" and not in mother tongue; (4) conducting regular debates on topical issues; (5) presenting well researched papers at departmental and/or interdepartmental seminars on various topics; and (6) organizing speech contests for the improvement of communication skill.

CAL2 noted the effect of the language of examinations on student' general comprehension and academic achievement by saying,

> If you read some of the instructions of questions - just take one of the science questions and read the instructions. The teacher has a certain answer he wants, but the statement to get that answer earns something else. And the student will give THAT something else but the teacher says, "The question wants this!" Now can I give you an example? State and define. The teacher tells the students, state Archimedes's Principle. Define Archimedes's Principle. Are they the same? When you state and define. So the teacher expects the student to say Archimedes's Principle is this, this, and this but the student just writes Archimedes's Principle. Uh-huh. Leaves it at that. That is why we are going back to communication!

CAL2 suggested that there should be a conscious effort to carefully choose words to use in tests and exams. He claimed that the choice of words is crucial to facilitate comprehension in the sciences and maths where there are many problem-solving questions, experiments and demonstrations that require clear and unambiguous instructions. Last but not least, **ELCS4** suggested that regular seminars be conducted to sensitize lecturers on the needs of Elimu College - such as communication skills as an important tool in learning.

Improving Reading to Learn in the Content Areas

CAL2 advised that a needs assessment be conducted at Elimu College in which lecturers ask themselves, "What are our problems and how do we tackle them as we go?" One of the areas

he noted as demanding immediate attention was content area texts. He said, “So the needs assessment is the text we use. How do we make it friendly?”

From interviews and lecturer/administrator questionnaires, involving all (lecturers and students) in efforts to improve reading to learn in content areas seemed crucial and mandatory. Partnerships, collaborations, and interactions were conceptualized as being feasible at two different levels: (1) Lecturer-to-lecturer; and (2) Lecturer-to-students. **CAL1** said, “All departments should have regular sessions for the purposes of exchanging ideas related to understanding and learning how to help their students in the area of comprehending their texts.” More specific suggestions to improve reading to learn included: (1) opportunities to participate in write-ups of course materials (compendia) to make them more user-friendly; and (2) convening interdepartmental meetings to strategize on making students competent readers of all texts. **L3** said, “All departments should work together in the promotion of students. The tutors have the sole responsibility of instilling this reading culture to bring about comprehension.” Lecturers were encouraged to have a positive attitude and good rapport with students. **ELCS4** said, “If a student likes the teacher they will like the subject and will be keen.”

CAL2 stated that English and Communication Skills department could help to make texts more accessible to the students. He said,

> Now, you have work, as English people, either to come to physics and I was telling them during the INSET (In-service training), there is a lot of work but people want to see that there is a lot. If they took this and just read it, and said we are going to paraphrase this book for physics. They are not changing anything. They are just making the meaning of this, what is being said here clear. You would make a lot of money if you paraphrased this.

One way **CAL2** thought English department could help is to simplify science texts for content area lecturers. He said,

> So English has a BIG task to de-mystify, that's the word, de-mystify the teaching, the communication, de-mystify communication in science. I have seen a situation where people from English have embarked on a physics book and made it clearer, and called us for in-service. Chapter one. They may not know any physics. But they can make it clear. If I gave you that statement of arbitrariness, you can make it clear by making, de-mystifying that word. You know what it means? You have de-mystified that word and you have made the book more appealing.

CAL2 noted further that maths and science teachers needed support to de-mystify content because,

> They are trained by people who have not gone through de-mystified communication, unless now English in-services them so that we have now the right attitude and the right skills to impart to the trainees. I am using that book. You don't expect me to speak any other word apart from (*points to book*). The science teachers don't explain them (*vocabulary*). They inherit them and pass them on. Because most of them, do not take their time, in the lesson planning, to explain concepts. So that when they make a statement, they move to the next.

In short, **CAL2** noted that maths and sciences lecturers need the "right attitude" and "right skills" to be able to adeptly handle content area texts. His suggestions that English and Communication Skills lecturers help de-mystify content area texts is thorny and might be a catalyst to debates about specialization (and questions of who is the authority figure in content areas). However, his assertions about the challenges content area lecturers face in dealing with expository texts reinforces the fact that prevalent teacher preparation practices need attention and possibly reform. **CAL2** indicated a willingness to learn when he said, "But if you took me to train me on what these words mean, then, when I reach that word arbitrariness, I will not say arbitrariness, I will say that word you told me is another alternative." That willingness to learn is a crucial step in the right direction although it is unclear how many lecturers would be embrace it in order to facilitate reading to learn.

CAL1, another content area lecturer, expressed concern about English and Communication Skills lecturers' use of maths texts in their classrooms, citing an example to illustrate his point. He said,

> The other day I was with Mrs. *(mentions name of one lecturer from the English department)*. She found something that was physics. She said, 'who has put this maths in my …' Someone had put something for Mr. *(mentions name of member of physics department)* in her pigeon-hole [*mailbox*] and it was Physics. She thought it was maths. She said, 'I have nothing to do with maths. Who has put maths in my place?' I looked at it and said, 'This is Physics, not maths'.

CAL1 concluded that such an attitude might negatively impact inclusion of maths texts in English. As if in answer to **CAL1**'s comment, **ELCS6** suggested the need to forge interdepartmental partnerships and collaborations to discuss content area texts and how to devise good questions from such texts. She said,

> So I believe by the same token we can liaise with the other departments like they give us a chemistry passage. It doesn't have to have formulas but, you know, notes on something chemistry. Not something very complex. I believe at this stage we can be able to understand some of the ideas in chemistry or even physics or biology… I think maybe we will have to liaise with the other departments. Okay we will have to of course discuss in our department and see how it can work cause to me that would be the right way to go. Then if we discuss with the other departments then we see how they can be able to assist us.

To further illustrate her point, **ELCS6** identified some of the limitations of questions her department sets for students. She said,

> But you see, if you look at the questions we set for them, they really don't have any component of science. And you see these are science teachers. So I believe that if we are really going to be of help to them so that when they go out, coz when they go out there they are not going to teach English. They are going to teach science.

ELCS6 thought that through such relationships, her department would be able to tap into, capture, and sustain students' interest and attention to their subjects through the texts they give them to read and through the questions they set for them from those texts. She said,

> We take a passage like that one, and then we come up with questions, you know. I think it will be of more interest to our students than the kind of the questions we normally ask them. I think they are not able to relate to them. Cause you see now, it's like now they have their focus now is on the sciences. So I think if we wanted to tap that skill in them then we have to do that. And I think it will be more exciting coz this is something I am familiar with (*referring to student*), this is something I can be able to explain in my own words. I think we will also be able to help the other departments indirectly.

ELCS6 said also that she had seen texts in the library that would be relevant, including maths and science content in reading comprehension instruction that the department offers. She said, "There was a time I was also in the library and I saw like there were some texts…textbooks there and …they actually had uhm…had passages on sciences… Maybe, we could try using those ones." She went on to add, "Cause if the passage is already there, all we need is to generate questions from them."

I asked **CAL1** to comment on this statement, "I keep forgetting what I read" – a statement drawn from student questionnaires. He said,

> For me I would say, they go over and over and over again. There are people who read over and over and over again to understand some of these things. Because if, here is something, you have given someone some notes. They know the exam is coming from those notes. If they don't understand, then there is a problem. So the only way is they go over their work, they use their friends to go over their work, and maybe they contact …the tutors. There is no shortcut in that. There are people who unless they repeat, unless they repeat over and over they cannot understand. There are others who just read once and they have understood… We encourage them to read all the time. Like me I always tell them, "Keep on reading your notes. Understand your notes. Understand what you are doing because as a teacher, you will be challenged. If you go to teach in some of these good schools, you will be challenged very badly by bright students and as a teacher you should be able to uhm to answer all those questions because you have read far, far above what the students might be asking. So we encourage them to read all the time.

CAL1 used a double-meaning phrase - "going over and over and over again" to refer to: (1) re-reading a text for understanding, and (2) practice - attempting to solve problem sets several times to the point of mastery or thorough understanding of subject matter.

Obviously he placed value on re-reading and suggested this strategy for any students who struggled to remember things they read. **ELCS4** discussed revising or "going back to look at what they have written" as an important study skill to help students comprehend and recall information. She reiterated, "Students must be reminded, now and then, that as they write their notes they should actually revise the notes and note down the main points." In short, there is need to help students develop skills and strategies to navigate texts of all kinds including those in their content areas.

Improving Student Readership

ELCS4 suggested that students should be sensitized to read widely when she said, "Awareness needs to be there." She thought a person who gains knowledge through reading widely would find it so "easy, you know, to mingle (interact intellectually) with the others." This means that one would be more comfortable to engage in academic discussions because they have a sound knowledge base to sustain an intellectual interchange. **CAL1** claimed he took it upon himself to encourage students to read all the time. He noted that if they did not read, they would be "challenged" by brighter students in future when they assumed teaching positions. Noting gender difference in maths achievement, **CAL1** said that female students should be challenged "to read and do well in maths." **CAL3**'s views concurred with **CAL1**'s and **ELCS4**'s. **ELCS4** suggested students should read for knowledge's sake. She said,

> So if that is the attitude, it means they are not after knowledge. So long as it is not an exam I don't care if I know photosynthesis or I don't know it. Yeah. Because and yet it is a process which I should learn so I will not go out of my way to say I missed this process. How does it work? No. So long as it is not in the exam. Fine… The other one is, some are not so keen to do practicals. They would rather work in groups and copy from each other, from other members who have carried out the experiment.

She opined that students should read to update and widen their knowledge base rather than just to do well in examinations. **CAL3** suggested that students should be equipped with skills to enable them thirst for information on their subject areas. She said,

> If somebody does not know a unit, how are they going to teach? So for a teacher, it is nice to kind of touch in every area. Not specializing so much especially a secondary school teacher. You can't specialize. Because there will be nobody else teaching. You will teach your class. So if you skipped a whole unit surely! You struggle to start learning it *(laughter)* before you go to teach.

CAL3 thus regards a teacher as someone who has a broad base of knowledge and "kind of touches in every area." She opined also that it was difficult to specialize in certain topics when one was expected to teach all class levels in teaching subject, something that reinforced the need to be knowledgeable in a broad-based way. The implication here is that if Elimu College develops the students' ability to read to learn then they can always prepare to teach something they missed or never got in teacher training. The call by lecturers that students read for knowledge's sake points to the difference between learning content versus learning processes that can be used to acquire knowledge on one's own. On the other end of the spectrum are student views on knowledge acquisition and learning. If the bottom line is the examination and the exam requires recall of information then students are responding to that…they don't necessarily see or believe that being a scholar seeking knowledge will lead to success on the exams. This may mean also that they are willing to do only that which will enable them to pass. In other words, lecturers may be interested in students' understanding across courses while students prefer to keep things compartmentalized by course particularly when it comes to examinations. This dualism poses a challenge which might need further inquiry.

I asked **ELCS5** how the culture of reading to pass examinations could be changed. She said,

> I don't know. Maybe it will involve a whole overhaul of our educational system so that we don't become so exam-oriented. Yeah. We'd need a definite overhaul. I can only think that a whole overhaul of our education, how we train our students, to study for exams. Maybe less emphasis on the exam systems and especially on the national exam systems would be a great help so that if they were not so threatened by any exams, then maybe, they will be having more time to read for leisure outside the given syllabuses.

ELCS6 mentioned also that some students rarely consulted lecturers if they had a problem in their subject areas. She said,

> But at least there are a few students who will come up and tell you I have a problem in this area, I have a problem in that area, please assist me. Of course that is when you have probed them and asked, 'Can you come?' But they won't just come voluntarily. You have to mention that if you seem to be having a problem here, come and see me. That is when they come.

ELCS6 stated that because students do not come voluntarily to seek advisement, lecturers should take the initiative to provide encouragement to students to seek guidance from them and knowledgeable others. She said, "Even as we teach we need to keep encouraging them. They should also be, apart from; they should not just depend on what we have for them. They should make an extra effort to go out of their way to go out there and look for more information."

Improving Interpersonal and Interdepartmental Relationships

Several participants suggested ways to improve interpersonal and interdepartmental relationships. For instance, **ELCS4** stated the need to work together across departments if students were to benefit. She said,

> So the problem here is that we need to work these things together – all the departments. And if all the departments can take it upon themselves that this is… as far as I am concerned, there should be no divisions. Here we are trying to build a teacher. We all want to build this teacher. That is why we are all here…If we can see how best we can help these students that will be very good. And I wish we could carry that gospel throughout the country…You see, and if we can know that all of us are working to the betterment of that student, the betterment of the institution, the betterment of Kenya as a whole, it will be much better.

ELCS4 reiterated the importance of lecturers not losing focus of why they were there: to "build" teachers. I assume building implies bringing together many experts and resources to construct something, in this case shape or mold students. It might also imply building onto what the students bring in terms of their background knowledge and experiences.

ELCS4 suggested and discussed ways to ensure all lecturers have a sense of belonging by saying,

> You see if this attitude is not there, if people feel they are at par and they are all here for the goodness (of students), most, a few of us feel that way. I am not accusing everybody. Yeah. If they feel we are at par and we are there for the betterment and we are working all towards the same goal, whether I have a problem in biology I should be able to go and consult. When they have, I do, you see, instead of feeling humiliated the way we are talking about. Then that will be very good. It will be a very good thing Hellen. Yeah, because then all these eh (*referring to challenges lecturers face*), would end. And we will be doing a very good job. [Elimu College] will even be much better.

CAL2 noted that success in any educational reform depends, in part, on attitude of those implementing it. He said, "It (*change*) can only be accepted if people are willing to change. One of the weaknesses as I have mentioned to you is resistance. You cannot internalize something if you resist it." **ELCS4** concurred with **CAL2** by stating that for any program to succeed, people have to feel they have a stake in it and that they stand to benefit from such involvement. She said,

> Yeah. What is it in it for me? That is the question. And that is what even brings our country to where it is. You want to do something, even you, you want to do this (*referring to my research work*) because you will get something (*referring to the end product of my work - PhD*). But as long as there is no profit, there is nothing you want to gain, why would you want to join in? Why would you, for example, would you want to go to church? What is there that you'd get in church? Can't you read or do nothing? But you see, what is it, what is in it for me is the question.

Recommendations

I Recommend Using Literacy as a Tool for Learning Content Matter

Content area lecturers purported not to offer content area reading instruction. However, they employed several strategies to facilitate comprehension of the content they teach. I would like to suggest that they consider incorporating content literacy in their instruction. Capitalizing on reading (and writing) facilitates learning content matter (Alvermann & Phelps, 2002; Lederer, 2000) and can be beneficial to: (1) make the discourse explicit within the content area, (2) use literacy as a tool for learning content matter, and (3) improve students' literacy skills through content area learning (Alvermann & Phelps, 2002; Lesley, 2004/2005). In other words, this focus will equip students with scientific literacy skills and enable them to locate, comprehend, remember, and retrieve information. Students will acquire new knowledge (Alvermann & Phelps, 2002) that is contained in various styles of writing across the curriculum and from informational texts. The focus will help also with procedural reading where students need to read to perform actions such as completing laboratory experiments (Yore et al, 1995). Two questions the lecturers might want to ask are: (1) what content-learning benefits might be realized by attending to literacy? (2) What does instruction look like that integrates literacy and content instruction in ways that remain true to both literacy and content goals and objectives? (3) How can literacy [literacies] function as an inquiry tool at Elimu College? The questions may not be novel but their answers have not been sought at Elimu College. Lastly, I propose a critical literacy approach appropriate for postcolonial Kenya (Prinsloo & Janks, 2002) to be considered. This will ensure that students are functional in local, national and international settings by constructing meaning within differing sociocultural contexts while also engaging in critical analysis.

I Recommend Further Development of Students' Scientific and Technological Literacy

Scientific literacy stresses the development of habits of mind to facilitate individual and group problem solving (American Association for the Advancement of Science, 1990). Science educators argue that scientific literacy is closely linked with technological literacy, thus, lecturers might want to develop "scientific and technological literacy for all" (UNESCO, 1993). On the other hand, mathematical literacy means developing students' abilities to explore, conjecture, and reason logically and to use a variety of mathematical methods effectively to solve real life problems. Miller (in Solomon & Aikenhead 1994) make a distinction between "educated" people who possess knowledge and "literate" people who can read about, comprehend, and express opinions on scientific matters. In a world that is increasingly shaped by science and technology, people need basic science knowledge and skills if they: (1) are not to be alienated in some degree from the society in which they live; (2) are not to be overwhelmed and demoralized by change; and (3) have to make those multifarious political, environmental, and ethical choices in scientific discovery and its consequences that are confronting us all. In other words, the ability of citizens to use science and technology concepts in solving daily life problems and to utilize skills to meet basic needs, prevent and avoid disasters, increase productivity, and alleviate poverty are manifestations of a scientifically and technologically literate person. At Elimu College, these goals might be met by capitalizing on reading and writing by all lecturers across the disciplines. Elimu College has made great strides by introducing computer education in addition to the courses it offers. These efforts are laudable but we should not lose the focus of empowering the student to be adept at harnessing and employing all strategies and skills required for reading expository texts whether as hypertext or in its traditional [paper] form.

The implications of these findings reflect the broader need to place greater emphasis on the relationship between students and their scientific literacy development. I argue that the role of scientific literacy and its influence on academic achievement represents a needed direction for continued research in maths and science education at Elimu College. One might inquire into: (1) what makes an individual scientifically and technologically literate; and (2) whether or not students are being adequately prepared to be scientifically and technologically literate.

I Recommend a Closer Match between Learner Content Literacy Needs and Teaching Methodology

From the student questionnaire, some students indicated that their reading is hampered by the difficulty levels of texts they encounter and expressed preference for more considerate texts (Anderson, 1984). There was some evidence that some students might be struggling with expository texts and some prefer 'easier' texts. Lecturers expressed concern about students' lack of readership. The challenge that still remains for lecturers, therefore, is to help students attain high-level abilities with expository text. There is need to tailor general curricular thrusts to fit the field of reading if students have to learn information meaningfully, think independently, and transform ideas contained in text rather than only reproduce their surface (Moore, et al., 1983; Temple et al., 2005; Vacca et al., 2003; Yore et al, 1995). From the study, there seemed to be a need to instruct students about text structure and other features of texts which aid comprehension and reading to learn. Text structure is a cueing system that refers to how ideas are interrelated and about the subordination of some ideas to others to convey meaning to readers (Meyer & Rice, 1984; Weaver & Kintsch, 1991). For example, expository text includes enumerative, sequential, compare-and-contrast, cause-and-effect, and problem-solution structures (Deshler, Ellis, & Lenz, 1996). As students move toward increasingly difficult work in content area

textbooks, they need to know how to use procedures and tools such as note-taking, underlining, skimming, scanning, and previewing (Wade & Moje, 2000). They also need to recognize the importance of attending to ancillary aids such as titles, headings, and so forth. The skills for reading graphs, charts, tables, and other documents that are found in expository text and using reference materials need to be taught. Allen (2000) and Meyer and Rice (1984) state that students can benefit immensely from explicit instruction on text structure and other surface features of texts. Text structure strategy is based on the premise that if students are taught different prototypical expository structures, they can use an understanding of these structures as an aid in comprehending texts that have similar structures (Tierney & Readence, 2005).

Although there are many factors that might account for poor readership among students, part of the problem appears to stem from a poor match between learner content literacy needs and teaching methodology. In some respects, lecturers' teaching styles and classrooms pre-dominantly mirrored transmission mode-type teaching. In looking for explanations for the apparent over-employment of teacher-directed methods, it could be that teachers are inherently conservative in their approach as change risks failure in the eyes of their students and significant others in the teaching profession, and this is not something most teachers take lightly (Ackers & Hardman, 2001). Alternatively, many Kenyans are mainly oral people and there is more emphasis on the listening skill as an important means of learning. It is true that our oral traditions were transmitted orally from generation to generation and so orality (a word I use to refer to listening and speaking) was valued over other forms of communication (see Commeyras, 2001). Teachers' conservatism in teaching styles may result, therefore, from the images of teaching which are culturally transmitted and deeply internalized (Sifuna, 1997). Teachers may find it difficult to imagine that knowledge, information, and skills could possibly be transmitted in any

other way than through teacher-led recitation (Ackers & Hardman, 2001). Lortie (1975), in exploring the socialization of teachers, highlighted "apprenticeship by observation," a process in which experiences of being taught for thousands of hours as a pupil internalizes a model of teaching. Sifuna (1997) argues that these socializing factors have a greater influence in the Kenyan school contexts. Given these powerful cultural influences, it is therefore not surprising that lecturers should draw upon such implicit knowledge. This is apparent especially when teachers are faced with the problem of managing large numbers of students in their classrooms (such as those in Mr. **CAL2**'s class of 89 students) and few instructional resources.

Another reason might be linked with colonialism and the advent of western type of education. Many schools in Kenya (including Elimu College) have limited instructional resources and more often than not the teacher is the only one who has access to the "knowledge" in the textbooks. There is the risk of assuming that students are not knowledgeable (or are tabula rasa) having not read those textbooks and hence the use of the lecturer method or what Freire (1970) calls deposit model of education. Exclusive access to this knowledge might have power implications; with the teacher being more privileged to have access and being the authority figure in relation to knowledge inherent in texts. This knowledge-power positioning can effect teacher-student interactions and could explain the claim by **ELCS4** that students are not comfortable consulting lecturers on their learning-related needs.

There appears to be a confluence of factors that might inform how an educator engages in educational practice – in this case the pre-dominant use of the lecture method. One way to move beyond transmission mode of instruction would be through a fundamental shift towards student-centered/constructivist teaching and learning. All the participants interviewed purported to use

student-centered approaches in addition to lecture method. Such efforts are laudable and should be encouraged.

If students are unable to independently sample, predict, confirm, self-correct, summarize, paraphrase, analyze, and apply information from their readings, it makes good sense to provide opportunities for them to experiment in these areas. Students should be taught the ability to (a) locate information, (b) select and evaluate material, (c) organize material, and (d) remember material (Yore et al, 1995). The methodology might also include modeling of appropriate teaching techniques for reading to learn from content areas or effective use of expository texts (Durkin, 1978/1979; Mehigan, 2005; National Reading Panel, 2000). **ELCS6** talked about lecturers being role models, demonstrating (thinking-aloud) how they search and draw from multiple sources when they are writing their lecturer/teaching notes. Student activities might focus more closely on the needs of the pre-service teachers by addressing, in an in-depth and relevant way, how they can effectively utilize expository texts in their subject area as well as in their future careers. They could have students engage in visual representation of information from expository texts (Clark et al., 1984) such as learner-generated drawings to represent to-be-learned content in order to improve learning from content area texts (Alesandrini, 1981) or semantic webs or graphic organizers (Robb, 2003). Drawing is a strategy in which readers construct a pictorial representation of concepts described in text (Van Meter, Aleksic, Schwartz, & Garner, 2006). Previous research (e.g., Hall, et al., 1997) indicate that learner-generated drawings improve higher- but not lower-order assessments. This empirical evidence is consistent with theoretical assumptions that drawing leads to the construction of a mental model. Participants in a study by Alesandrini (1981), for example, made drawings of science concepts using only paper and pencil and instructions to draw. Van Meter et al. (2006) identified a

common factor across studies they reviewed, a factor that defines the drawing strategy, as the learners' construction of an external visual representation, or picture, of to-be-learned content. The definition is further developed by both the requirement that learners maintain responsibility for the final appearance of drawings and the constraint that the final drawings are representational.

Lecturers might use equipment and curricula available to teachers in secondary schools. **CAL2**, for instance, used the secondary school science syllabus and three textbooks used in secondary schools in Kenya to teach physics subject methods. He demonstrated how to orchestrate multiple resources to meet students' educational needs. **CAL2** as well as other lecturers I observed in the classroom teaching offered students opportunities to demonstrate the application of the knowledge they were learning, via the activities the lecturers provided. I suggest that more opportunities focusing on inquiry-based, hands-on activities should be included. **CAL3** mentioned the hands-on, minds-on, and hearts-on strategy where subject matter appeals to all of the students' senses including emotions (hearts). For example, lecturers might encourage students to engage in text-based collaborative learning, which involves students interacting with one another around a variety of texts. This was evident in one of the biology classes I observed where students compared information across texts.

In short, teacher education offered at Elimu College must help pre-service teachers develop the necessary instructional skills, habits, and attitudes (Otiende, Wamahiu, & Karugu, 1992) to fulfill the responsibility of "producing" members of society who will have the skills required to be effective citizens of the 21st Century. To achieve this, lecturers might have to re-conceptualize notions of (under)achievement in mathematics and science and literacy development by asking this question: What theoretical and pedagogical perspectives are relevant

for reading to learn in Kenyan contexts? Without such recognition, educators run the risk of limiting opportunities for mathematics and science learning both for Elimu College students as well as those students in high schools.

I recommend Documentation of Context-specific "Best Practices" for Comprehension Instruction and Reading to Learn from Content Area Subjects

In this study, several interesting terms and strategies were used to discuss how students were being helped to comprehend required readings across the disciplines. For instance, a word such as *deliver* was used to refer to teaching. Although the term deliver might be viewed narrowly to imply transmission mode of teaching and where the students are viewed as blank slates, it carries a different meaning within Elimu College (and Kenya). It might imply effective teaching when one says simply, "S/he delivered [the content]." Other words such as *grasp, digest,* and *get,* were used to refer to comprehension and reading with understanding. Strategies such as *reading assignments, tutorials,* and *discussions (in problem solving sessions)* were used to facilitate comprehension in biology and mathematics, for instance. *Mini-talks* and *questioning techniques* were terms discussed by lecturers from the English Department. From a social constructivist framework, these are terms (such as reading assignments, grasp, deliver and so forth) that have been developed within Elimu College and an inventory might be useful for future researchers especially those from western countries.

At Elimu College, there is limited access to best practices/evidence-based research to inform content area reading instruction. Educators seemed to rely on their own experiences to inform their decisions regarding comprehension and comprehension instruction. In fact, suggestions and recommendations by all participants included strategies that could be documented for posterity purposes. I mentioned earlier on about the use of orality as an

important tool to dialogue and engage in inquiry about subject matter. Future research efforts might document context-specific strategies and skills that best facilitate comprehension at Elimu College. Such efforts might be guided by these questions: What reading to learn strategies and skills are culturally appropriate for Elimu College? How can these strategies be harnessed to enhance students' comprehension abilities and reading to learn?

I recommend Focused Attention on the Language of Mathematics and Science

Findings from this study suggest that all lecturers and students take a keen interest in language – both oral and written. Language is central to all learning, regardless of the discipline (Nourie, Lenski, & Davis, 1998). When thoughts are processed by way of thinking, reading, or writing, they are learned in deeper ways (McGinley, 1992). Unfortunately many pre-service secondary teachers do not recognize the extent to which content area subjects and language use are correlated (Nourie et al., 1998) and many resist the ideas that are presented in content area reading courses (Stewart & O'Brien 1989). Despite this being the case, lecturers at The College could help students improve in their scientific and mathematical language. In maths, for instance, they can have students write their own word problems drawn from their mathematical experiences and share them with other students. Considering students' acquisition of the language of maths, its symbols, as well understanding the discourse, represents a needed direction for research in reading (and bilingual) education. In addition, attention needs to be given to the social and cultural contexts underlying mathematical problems used in the classroom (Secada, 1992).

The discourse patterns of science are unique (Barton et al, 2002). Science classrooms introduce students to the discursive patterns and practices in science (e.g., measurements, graphing, and using microscopes). Although these discursive practices are valuable in promoting

student learning, these same discourse patterns present limits to access for science learners as they stand at odds with those consistent with students' normative discourses (Lemke, 1990). Furthermore, language is often invoked as a resource for signaling one's identity (Gee, 1990). Thus the science classroom has the potential to be seen as a politically charged space where classroom language and participation reflects membership into cultural domains.

A thorough understanding of these issues might require analysis of the social and political processes through which cultural disparities for learners in multilingual and multicultural setting such as Kenya are constructed. Such inquiry should inform teachers' instructional choices and help to ensure that students receive instruction based on evidence rather than on intuition alone. Other studies might consider how engaging in the scientific discourse represent a cultural conflict for students. Last but not least, Elimu College should be concerned about ways in which literacy and specialized uses of language pervade assessments in all subject areas, including English, maths, and science.

I Recommend Collaborative Discussions around Teacher-Notes

Findings indicate that lecturers, such as **CAL2** and **CAL3**, give out comprehensive notes to their students through dictation. This is a strategy used to circumvent the lack of (or inadequate) instructional and learning resources. **CAL2** took the 'teacher notes' issue a step further by criticizing a common practice where some lecturers use the same lecture notes year after year. He recommended revision of teacher notes depending on students' needs - which might vary from class to class and year to year.

In Western countries, unlike Elimu College, there is an overabundance of instructional texts and resources. The concern of many educators in those Western countries is often about how 'considerate' (Anderson, 1984) those texts are to their intended users. On the other hand in

Kenya, as well as in many developing countries, educators are often faced with severe shortages of instructional and learning materials and resources. It is not unusual to find one copy of a content area textbook, more often than not, owned by the teacher. It is also a fairly common practice to find educators reading and making notes from the few textbooks available and then dictating those notes to their students. What that teacher does is in fact a form of translation and transmission. This was the case at Elimu College where the lecturers observed in class teaching had ready-made notes that they asked their students to take down.

Wade and Moje (2000) noted that a variety of texts are used and produced in the classroom by teachers and students and by students outside the classroom setting. Yet, in-depth studies of content teachers' use of multiple texts (i.e., outside materials such as newspapers, magazines, and technology and in my case, lecture notes) are rare (Behrman, 2003). Whereas this research gap is applicable to Elimu College, there is an added component to the use of multiple texts - the actual creation of those texts i.e.., the lecture notes. Further research might consider the question: How do lecturers prepare and use teaching notes to communicate content? It would be interesting, for instance, to use lecturer notes as basis for collaborative discussion on how to make lecturer notes more user-friendly. Kenya Institute of Education (KIE), the national curriculum body, recommends texts that are used for instruction in institutions other than Elimu College. Lecturers at Elimu College, therefore, use their own discretion to choose texts to use for instruction. In engaging in collaborative discussions about lecturer notes, therefore, lecturers may want to be ware of, and factor in, individual differences in research and note-taking skills. In other words, they should highlight how a high quality of lecture notes can be reached and maintained regardless of content areas or disciplines. Consequently lecturers would inquire into whether or not they need practice writing higher-quality notes from multiple resources for their

students. If students can't have their own texts and the teacher makes a "text" for them, then that person may as well be adept at writing good notes.

In general also, the notion of "text" is expanding to include film, CD-ROM, Internet, music, television, magazines newspapers, and students' own cultural understandings" (O'Brien, 2003). Information flows from multiple discourses including written and conversational, oral language, visuals, and all forms of discourse are potential sites of learning in the content areas (Behrman, 2003). It is critical that future research explore these new avenues of text because students will be faced (if they aren't already) with complex challenges that include a "globalized economy, the emergence of new, hybrid forms of identities, and new technologies that are transforming traditional print" (Luke, 1998, p. 306).

I recommend English and Communication Skills Department to Incorporate Content Area Texts in their Instruction

There is need to strengthen and transform the English Department in ways that reflect current research and theory in the field of reading instruction in pre-service teacher education. The department predominantly teaches reading using texts situated within their discourse of general literacy instruction. The department could do more to bridge the gap between general literacy and content area literacy by weaving content area texts into their instruction. In addition, they need to provide direct and explicit comprehension instruction of expository texts Snow et al., 1998). This instruction should include teacher modeling and sufficient time for students to independently apply and refine their skills (Gee, 1990; Pearson & Gallagher, 1983). Strategy instruction takes time to teach (Ciborowski, 1995). It requires careful reflection on the teacher's part about how to teach and why, when, and in what problems or circumstances to use a strategy. It also involves frequent modeling and re-teaching of specific strategies when necessary (Ellis, et

al., 1991; Mehigan, 2005). The success of strategy instruction depends heavily on three criteria: (a) the commitment the teacher makes to acquire a repertoire of instructional strategies that have shown promise with students who are low readers; (b) how well teachers can model their own strategic thinking; and (c) how well students are convinced that strategies are useful in improving their grades (Ciborowski, 1995).

Interviews with **ELCS4**, **ELCS5** and **ELCS6** indicated that they do teach five sub-processing skills of comprehension (Irwin, 1991) that can be applied to content area texts. The missing link, as already indicated elsewhere, is a more deliberate approach to use texts that are in students' discourses and subject areas. Content-area literacy instruction must focus on assisting students in acquiring the knowledge and skills necessary to negotiate (e.g., read, listen, view), create (e.g., write, speak, symbolize) and critique the texts they encounter as part of content-area learning, knowing, and communicating (Ciborowski, 1995; Draper et al., 2005; Yore et al., 1995). These texts must include "nonlinear and non-story texts, including informational text, procedural text, hypertext, and a multitude of other types of text" (Pearson & Duke, 2002, p. 257) as well as non-print material. Draper et al contend that in order for students to gain facility with content-area texts (e.g., documents, conversations, manipulative, graphs, diagrams, charts), teachers must explicitly instruct their students about how the texts used within the discipline under study are created and used (see Ciborowski's (1995) article which summarizes the existing literature on effective textbook instruction). In fact, students have no access to the content under study unless they are able to successfully negotiate and create the texts used to convey meaning within the discipline. Consequently, content literacy is a legitimate and unavoidable part of meaningful content-area instruction. So one question the lecturers might want to ask is: What is the place of content literacy during English and communication skills lessons?

I doubt the possibility that separate literacy or reading courses are sufficient to allow students to develop literacies for the various content-area domains. English and Communication Skills lecturers are considering collaborating with content-area lecturers to create instruction that supports the acquisition of literacy processes and remains true to content learning simultaneously. Such consideration should be actualized to ensure that literacy instruction holds true to the discipline and does not compromise the integrity of content-area discourse.

I Recommend Interpersonal and Interdepartmental Collaborations and Partnerships

In this study, it appeared that lecturers are unclear about whose role it is to improve students' content literacy. Participant interviews and classroom observations, however, indicated that lecturers emphasized somewhat, and in varying degrees, skills that enhanced students' reading to learn from content areas. What I saw lacking was the harmonization of such efforts across disciplines.

In Western countries such as The United States, developing "literacy" is the focal point in problematizing science and mathematics education reforms (Tan, 2004). In other words, it is becoming imperative for science and mathematics educators and scholars to find more innovative ways of helping students understand and employ languages and ideas of science and mathematics in reasoning, communicating and solving problems. These reforms have come to include interdisciplinary collaborations and partnerships because it has become increasing apparent that no isolated college, department, or school district can provide the necessary depth of preparation that beginning teachers need (National Commission on Mathematics and Science Teaching for the 21st Century, 2000; National Science Foundation, 1996; Vacca et. al., 2003). These reports argue that partnerships among colleges of education, colleges of arts and sciences, and public schools are needed for excellence in teacher preparation.

Vacca et al (2003) recommend the need for teachers to continually study the knowledge base from multidisciplinary perspectives. Understanding literacy from multiple perspectives allows teachers to affirm, change, or let go of what they believe and value in light of new knowledge and research. Multidisciplinary perspectives on reading and reading to learn enrich and broaden the knowledge so that teachers are in the very best position to use their professional expertise and judgment to make instructional decisions. A single discipline cannot provide a teacher with the insights and understandings needed to guide and support literacy in the modern world.

From a social constructivist perspective, I wish lecturers would critically re-examine their teaching practices and professional interactions across disciplines if new ways of knowing and different strategies for sharing of knowledge are to be created. All lecturers jointly share the responsibility of educating future high school maths and science teachers. **ELCS4** offered that lecturers should not lose focus on their purpose at Elimu College: the welfare of students. The lecturers should, therefore, put students' content literacy needs at the forefront of their thinking and dialogue about how to better meet those needs. I reiterate also that literacy and content knowledge should no longer be conceptualized in a disconnected way. Adherence to binaries, with English on the one side and content area subjects on the other, is detrimental to students and the students they will teach. The truth is literacy instruction apart from content is insufficient to help students read and understand content-area texts. Similarly, separate literacy instruction--literacy instruction seemingly devoid of content--is problematic because it does not acknowledge that texts and text usage vary depending on the content area and the discipline-specific discourse (Gee, 1990) in which the text is situated. The types of texts that are used, as well as the "correct" way to read and write those texts, depend upon the discipline (Draper & Siebert, 2004). They

may not know it but lecturers are, not only obligated to provide content-area reading instruction but also uniquely qualified to engage in discipline-specific literacy instruction (Draper et al., 2005). They should thus see themselves as capable of accomplishing this goal. Indeed, the content instructor must acquire an appreciation for the developmental and connected nature of reading, thinking, and learning content (Ciborowski, 1995).

Opportunities for collaboration among lecturers might include, for instance, encouraging science literacy reform by redesigning the diploma in science education courses for pre-service teachers. Interdisciplinary teacher teams could be formed with the aim of meeting to discuss students and align instruction. A comprehensive and coordinated literacy program could be formed to coordinate with Elimu College as well as with other out-of school organizations and local community.

Innovation and change always cost time, anxiety, and uncertainty. It is essential therefore that Elimu College puts in place supportive systems that encourage and nurture interactions with peers through modeling and feedback in non-threatening environments if lecturers have to adopt "new repertoires of complex social behavior necessary from responsive teaching (Tharp & Gillimore, 1988" (p. 191) without wasting any resources (including time and money). Elimu College has to be willing to spend a considerable amount of time to understand why literacy is critical to all subject areas (Fisher & Ivey, 2005) by dialoging, reflecting about, and researching their instructional practices (Freire, 1970). It might be useful to refer to research such as Draper et al.'s (2005) study in which teacher educators collaborate across disciplines to inquire into their experiences and practices with regard to content literacy. Such professional development efforts should be long term and ongoing. Innovative teaching must be expected. Elimu College needs to find ways to allocate time in lecturers' workloads (or compensate lecturers) for professional

development, instructional improvement, new course development, and collaboration with other lecturers within and outside Elimu College, for, instance, with colleges such as Kagumo or public universities such as Jomo Kenyatta University of Technology and, most importantly, local schools.

In sum, Elimu College should aim at increasing the rigor in the teaching profession by developing programs that focus on what teachers should know and be able to do to facilitate reading to learn. Teachers must demonstrate a thorough understanding of the subject matter and uses of such knowledge to create effective learning experiences for students. In **ELCS4**'s words, Elimu College must "look for ways the arts and sciences can work together." Finally, lack of instructional programs that support teachers in their efforts to promote students' literacy and content skills simultaneously may challenge any meaningful effort to address the literacy-content dualism. I would encourage lecturers to keep trying even in the face of failure. It is with this notion in mind that educators must engage in academic research and pedagogical innovation that seeks to explicitly address the issue of reading to learn from content areas.

I recommend Ongoing Research and Reflection

The knowledge base related to how children learn to read and read to learn is changing every day, and it is teachers who will expand on that base with ongoing research and reflection (Allen, 2000; Villaume, 2000). It is time for each lecturer to acknowledge that they have, or know how to acquire, the expertise that will help them meet the challenges of the students who come to them each year. Such insight can be gained through systematic research and on-going reflection on theory and practice (Fecho, 2004) or praxis (Freire, 1970). Lecturers are on dangerous ground when they abdicate their responsibility to connect theory and practice in rich and new ways. Allen (2000) says, "If we don't take on both the rewards and responsibility of that

professional commitment, we risk teaching in environments and with resources that are counterproductive for the reading work we need to accomplish" (p. 230).

I recommend Promoting a Culture of Reading among Students

Analysis of lecturer and student responses indicated some agreement and some discrepancy between students' perceptions of themselves as readers, and the lecturers' perceptions of students as readers. Views from lecturers and students indicated that student readership is determined by nature of texts to be read. In other words, many students preferred shorter texts and those that "do not have many terminologies." **ELCS4** and **CAL3** indicated in their interviews how students do not take time to read outside the dictates of their curriculum. When students stated "I like short texts," or "the text has too many terminologies," they were, in fact, sending a message that such texts need scaffolding and/or that they need help with informational texts.

Findings about poor readership among students seem similar to what happens in other parts of the world. Several researchers in western countries have investigated the literacy habits of pre-service teachers and found that an alarming number of them did not consider themselves to be good readers and did not enjoy reading (see review in Draper, Barksdale-Ladd, & Radencich, 2000). Commeyras (2001) stated that many students she teaches "do not like to read, do not have the time to read what they choose, and may not even think they are good at reading" (p. 15). In looking for explanations why students do not engage in reading for leisure, a number of contravening factors were mentioned. For instance, Elimu College demands 100 percent of students' time – because of the full curriculum load.

Another factor might be linked to cultural views of spending time. Commeyras, in a speech given at Adeniran Ogusanya College of Education in Oto/Ijanikin Nigeria in 2001, noted

the need to approach a culture of reading anthropologically by examining the larger existing cultures in which educators intend to promote a culture of reading. Commeyras cites Nweke (1987) who wrote that "until missionaries brought education to Nigeria with books as its instrument, Nigerians derived more pleasure and communicated more easily through the oral and performing arts – talking, singing, dancing, music, and drama." Nweke offers that Nigerians "found systematic reading in the Western context as individualistic, solitary, and a private experience." Because communication with a book seemed a one-way process, people found reading idle and boring. They preferred to spend time in communal activities where one can give as much as one receives. Views such as these led Commeyras to wonder if silent individual leisure reading belongs in cultures where people want to retain a vibrant oral culture. I concur with Commeyras' observation and see her sentiments as applying to students as well. In view of all this, I encourage lecturers to inquire about what values in the larger culture(s) in Kenya, and Elimu College in particular, might interfere with the culture of reading that they may want to promote.

There is need also for a thorough examination of students' individual preferences, interests, and learning styles and how those are positioned within the value systems of the larger culture in Kenya. **CAL3**, for instance, noted how students prefer to sit outside on stonewalls (facing the entrance into Elimu College compound) and chat to reading. How can such social sites be tapped into as avenues for discussions around books, including content area texts, promotion of students' literacy development? Approaches which view reading comprehension as socially constructed are needed. This is with the understanding that such notions stand at conceptual opposition with traditional work in reading education, informed by cognitive

constructivist psychology, that attempt to explain text decoding and reading comprehension by way of models of mental operations (Hruby, 2001).

Lecturers might pay more attention to pre-service teachers' perceptions of their capability to read, in part because these perceptions work in concert with future experiences to help determine the academic choices and achievements of students (Hackett & Betz, 1989). Previous research has already suggested that teachers' beliefs tend not to change much from the time pre-service teachers enter until they leave pre-service training programs, and that their beliefs are generally not influenced easily (Pajares, 1992). Beliefs probably persist in part because they serve as "filters" through which new information is processed (Fecho, 2004; Kagan, 1992). Efforts must be made to expose students to diverse texts, which are texts with a variety of difficulty levels and on a variety of topics. As the National Council of Teachers of English (NCTE) explained, in their Position Statement on Adolescent Literacy, “Reading is not technical skill acquired once and for all in the primary grades, but rather a developmental process. A reader’s competence continues to grow through engagement with various types of texts and wide reading for various purposes over a lifetime” (NCTE, 2004, p. 1). Finally, the identification of salient patterns in the responses from both lecturers and students concerning student readership lead to recommendations for the design of classroom programs effective in helping students become independent synthesizers, organizers, interpreters, and appliers of information gained from content area readings (Lester, 1998; Pressley et al., 1995).

Three implications can be drawn from this study.

Implications

Implication 1: Incorporation of comprehension instruction can be facilitated through professional development of lecturers. Many lecturers may not have been trained to offer

comprehension instruction of content area texts. Professional development opportunities are needed as a catalyst for comprehension instruction to be incorporated in the teaching of content areas. My findings suggest that lecturers need "awareness, exposure" (**ELCS4**), or opportunities that address pedagogy and assessment of students in ways different from traditional lecturer-based models. Such professional development courses might prompt lecturers to evaluate their instructional practices. **ELCS4** said she needed someone to make her aware of her current instructional practices, her strengths and weaknesses so that she could learn and change - hence her use of the terms awareness and exposure. From social constructivist perspective, professional interactions are imperative for learning and making meaning concerning content literacy and instruction.

I am happy to report that an attempt at professional development by the SMASSE project, though resisted in its initial stages, appears to be yielding positive results as reported by **ELCS4**, **CAL2,** and in Inyega's (2005) study. It is unfortunate that such opportunities did not come sooner. I think that professional development opportunities should be tailored to specific areas of concern. **CAL2** recommended conducting a needs assessment to determine and prioritize issues needing attention at Elimu College. I suggest that such opportunities include courses informed by evidence-based research on teaching and learning in general and on reading learn from content areas in particular. I would caution lecturers that change take time. People need time to develop and reflect upon the pedagogical knowledge and skills gained through professional development experience. Inyega (2005) found that it took a year or more for high school teachers in-serviced in SMASSE to begin making modifications in their own courses. Time would enable lecturers to move through the appropriate stages of change: gaining awareness of best practices for reading to learn from content areas, developing beliefs as to why

they are superior to their current practices, piloting those ideas in piecemeal fashion, and finally orchestrating best practices into a restructured curriculum and pedagogical repertoire. Efforts by projects such as SMASSE are beginning to have impact, but certainly more needs to be done, hence my recommendation to include comprehension instruction in professional development programs. An even better and more promising alternative would be to convene courses focusing specifically on comprehension instruction and the content areas. This would be on a subject-to-subject basis, assuming each subject has unique features, or convened at interdisciplinary level if the ultimate goal is to forge interdepartmental partnerships and collaborations.

Implication 2: Extensive research will unearth more information on reading to learn in the content areas at Elimu College. This study provided some direction in relation to content literacy at Elimu College. The purpose of my study was to document how pre-service teachers are helped to comprehend required readings at one particular college. I did not consider the possibility of wider implications. However, from my literature search and conversations with instructors at other colleges, I found that the reading difficulties experienced by students are common among college students in general. I also found consensus in the concerns expressed by instructors about their abilities to help their students, which could have implications for other teacher preparation and professional development institutions in Kenya. Other stakeholders interested in content literacy in multilingual and multicultural settings might find this study informative.

More extensive research is needed to create and evaluate: (1) instructional strategies that support students' facility with the usage of various texts, and (2) ways ideas about content-area texts, text use, and content-area literacy instruction can be taught to pre-service teachers. Further research can expand on my study findings by identifying: (1) texts used by lecturers to reason,

learn, and communicate content, (2) ways in which those texts are used within particular subject areas.

Implication 3: Qualitative research methodologies are needed to facilitate teacher research and further inquiry about educational practice. From my research experiences at Elimu College, I surmise that one of the factors coming in the way of data collection may have been the nature of questionnaires I supplied to lecturers. One comment that stands out for me was why I used open-ended type instead of forced-choice questionnaires. In other words, some of the lecturers might not have been familiar with qualitative research methodologies I employed during data collection. This dissertation thus has important implications from a qualitative research point of view. In this regard, future work with Elimu College might involve offering professional development courses in qualitative research as a way to familiarize lecturers about qualitative research methodologies and as an encouragement for them to use in examining their own educational practices

Conclusion

I intended this research to be descriptive and interpretivist even as I addressed the urgent need for instructional changes in reading to learn from content areas at a unique content specialty institution. I wanted my work to serve as constructive commentary instead of providing "skills-in-a-box solution" (Shoenbach et al, 1999, p. 7). I hope I have achieved that. As evidenced throughout this study, I argue that more focused attention and concerted efforts geared at improving pre-service teachers' comprehension abilities and reading to learn from content areas is indispensable in steering teacher education programs at Elimu College to greater heights. I have challenged the old ways of doing things (Wood, 2004) as well as provided direction on the way forward. I pose the question: How can understandings from this research work be translated

into mathematics and science teacher preparation? In other words, what connections can be made across departments in order to integrate knowledge acquired from my research study findings into teaching and learning? Whether or not ideas in this study are embraced by Elimu College is another issue all together and beyond my control, but I do hope they find them worthwhile. With this dissertation, therefore, I add my voice to the collective call for renewal and rejuvenation in our teaching practices at Elimu College. Urging all of us to open our minds and hearts so that we can know beyond the boundaries of what is acceptable, so that we can think and rethink, so that we can create new visions of creating better students to meet the scientific and technological challenges of the 21st century. To teach in ways that go against and beyond discipline-specific boundaries. From a constructivist vantage point, I hold great hope in the potential of dialogic conversations and professional interactions that allow teacher educators from various perspectives and disciplines to investigate content area literacy. It is that move which makes education the practice of freedom (Freire, 1970; hooks, 1994) and restore to education and the classroom excitement about ideas and the will to learn. Finally, research into issues related to content-area literacy instruction will allow teacher educators to improve teacher preparation and professional development programs and, hopefully, augment changes at policy level in response to current and future changes in reading education.

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APPENDICES

Appendix A

CONSENT FORM FOR ELIMU COLLEGE LECTURERS

I, _____, agree to participate in a research study titled "*Reading Across the Disciplines: A Case Study of Elimu College"* conducted by Hellen Inyega from the Language and Literacy Department, Reading Education Program at the University of Georgia (542-7865) under the direction of Dr. Michelle Commeyras, the Language and Literacy Department, Reading Education Program, University of Georgia (542-2718). I understand that my participation is voluntary. I can stop taking part without giving any reason, and without penalty. I can ask to have all of the information about me returned to me, removed from the research records, or destroyed.

The reason for this study is to inquire into the reading comprehension instruction program offered by the English and Communication Skills Department.

If I volunteer to take part in this study, I will be asked to do the following things:

- Fill out a pre-interview qualitative research survey questionnaire on reading comprehension instruction of different texts. This questionnaire will take about thirty minutes to fill out.
- Be observed at least two times in the classrooms teaching or incorporating reading comprehension.
- Be interviewed twice, once before I am observed teaching and another interview any time after classroom observations.
- Participate in one focus group interview towards the end of the research period. (Classroom observations and each individual and focus group interview will be about one hour long and each will be audiotaped).
- Write a reflective journal at the end of each English comprehension lesson for the entire research period (between May and July, 2005). Each journal entry will take approximately thirty minutes to fill out.
- Provide lesson plans, lesson notes, student records, and any other teaching materials I will be using for teaching in my classroom.

I understand that the researcher may call me to clarify my information. My information will be kept for about eight years before being destroyed.

I understand that participation is entirely voluntary and that no risk is expected. I also understand that no information about me, or provided by me during the research, will be shared with others without my written permission, except if it is necessary to protect my welfare (for example, if I were injured and need physician care) or if required by law. I will be assigned an identifying number and this number will be used on all of the questionnaires I fill out and other tests I take.

The investigator will answer any further questions about the research, now or during the course of the project (542-7865).

I understand that I am agreeing by my signature on this form to take part in this research project and understand that I will receive a signed copy of this consent form for my records.

Hellen Nasimiyuh Inyega
Name of Researcher **Signature** **Date**
Telephone: 706 542 7865
Email: hinyega@uga.edu

Name of Participant **Signature** **Date**

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu

Appendix B

CONSENT FORM FOR ELIMU COLLEGE PRE-SERVICE TEACHERS

I, _____, agree to participate in a research study titled "*Reading Across the Disciplines: A Case Study of Elimu College"* conducted by Hellen Inyega from the Language and Literacy Department, Reading Education Program at the University of Georgia (542-7865) under the direction of Dr. Michelle Commeyras, the Language and Literacy Department, Reading Education Program, University of Georgia (542-2718). I understand that my participation is voluntary. I can stop taking part without giving any reason, and without penalty. I can ask to have all of the information about me returned to me, removed from the research records, or destroyed.

The reason for this study is to inquire into the reading comprehension instruction program offered by the English and Communication Skills Department.

If I volunteer to take part in this study, I will be asked to do the following things:

- Fill out a qualitative research survey questionnaire on reading comprehension instruction. The questionnaire will take about thirty minutes to fill out.
- Rate ten passages you have read during the course of this term. Rating will take about ten minutes to complete.

I understand that the researcher may call me to clarify my information. My information will be kept for about eight years.

I understand that participation is entirely voluntary and that no risk is expected. I also understand that no information about me, or provided by me during the research, will be shared with others without my written permission, except if it is necessary to protect my welfare (for example, if I were injured and need physician care) or if required by law. I will be assigned an identifying number and this number will be used on all of the questionnaires I fill out and other tests I take.

The investigator will answer any further questions about the research, now or during the course of the project (542-7865).

I understand that I am agreeing by my signature on this form to take part in this research project and understand that I will receive a signed copy of this consent form for my records.

Hellen Nasimiyuh Inyega	_____	_____
Name of Researcher	**Signature**	**Date**
Telephone: 706 542 7865		
Email: hinyega@uga.edu		
_____	_____	_____
Name of Participant	**Signature**	**Date**

Please sign both copies, keep one and return one to the researcher.

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu

Appendix C

EXAMPLE OF LETTER TO ELIMU COLLEGE ADMINISTRATORS

Kenya Science Teachers College,
P.O. Box 30596, 00100,
NAIROBI.

13th June 2005.

The Chief Principal

Dear Sir,
RE: INVITATION TO PARTICIPATE IN RESEARCH

I would like to invite you to participate in my research study titled *"Reading Across the Disciplines: Case Study of Elimu College"* which will culminate into a PhD dissertation.

The reason for this study is to inquire into second-year students' comprehension of different texts including those in their subject areas and the challenges, if any, they face in doing so. As the Chief Principal, I believe you are in the best position to provide your perspectives on your knowledge, experiences, and practices having dealt with the students as they handled different texts in your subject area.

Please take a moment to fill this qualitative research survey questionnaire on comprehension. The questionnaire will take about thirty minutes to complete.

No risk is expected and information about you or provided by you in the questionnaire will be treated with confidentiality. For this reason, you will be assigned an identifying number known only to you and the researcher to be used on the questionnaire you fill out.

Please also note that participation is voluntary although I am looking forward to your support and cooperation.

I will answer any further questions about the research anytime in person or on phone number 561406.

Yours faithfully,

Hellen Inyega.

N/B: N/B: Please place the completed survey in mailbox number 42.
******Changes were made depending on each administrator's designation.**

Appendix D

EXAMPLE OF LETTER TO ELIMU COLLEGE LECTURERS

Kenya Science Teachers College,
P.O. Box 30596, 00100,
NAIROBI.

13th June 2005.

Dear _____,

RE: INVITATION TO PARTICIPATE IN RESEARCH

I would like to invite you to participate in my research study titled *"Reading Across the Disciplines: Case Study of [Elimu College]"* which will culminate into a PhD dissertation.

The reason for this study is to inquire into second-year students' comprehension of different texts including those in their subject areas and the challenges, if any, they face in doing so. As one of the members of staff at Elimu College, I believe you are in the best position to provide your perspectives on your knowledge, experiences, and practices having dealt with the students as they handled different texts in your subject area.

Please take a moment to fill this qualitative research survey questionnaire on comprehension. The questionnaire will take about thirty minutes to complete.

No risk is expected and information about you or provided by you in the questionnaire will be treated with confidentiality. For this reason, you will be assigned an identifying number known only to you and the researcher to be used on the questionnaire you fill out.

Please also note that participation is voluntary although I am looking forward to your support and cooperation.

I will answer any further questions about the research anytime in person or on phone number 561406.

Yours faithfully,

Hellen Inyega.

N/B: Please place the completed survey in mailbox number 42.

Appendix E

QUESTIONNAIRE FOR ELIMU COLLEGE ADMINISTRATORS

1. **How would you define comprehension?**

2. **Before you became an administrator and when you were handling students, what texts did you use to help them comprehend your subject?**

3. **How did you help your students to comprehend the texts you used for instruction in your subject area?**

4. **What comprehension monitoring strategies did you emphasize?**

5. **How might students use comprehension in their subjects (e.g., Mathematics, Physics, Chemistry, or Biology)?**

6. **How prepared do you think students are to help their future students to comprehend the texts they will use to teach their subjects once they graduate?**

Very Prepared Prepared Somewhat Prepared Not Prepared

Explain your choice

7. **What other issues do you think need to e addressed in teaching students to be competent readers of all texts including those in mathematics and science?**

8. **How might the department of English and Communication Skills address those issues to make students competent readers of all texts?**

9. **How might the other departments address those issues to make students competent readers of all texts?**

10. **Any other comments?**

Supplementary Questionnaire for Authors of Science and Mathematics Texts

As an established author and/or one who has been actively involved in science and math textbook writing/reviewing, in what ways do authors of such texts make them accessible, comprehensible, and user-friendly to their prospective readers and users?

Appendix F

QUESTIONNAIRE FOR ELIMU COLLEGE LECTURERS

1. **How would you define comprehension?**

2. **What texts do you/might you use to help them comprehend your subject?**

3. **How do you help your students to comprehend the texts you use for instruction in your subject area?**

4. **What comprehension monitoring strategies do you emphasize?**

5. **How might students use comprehension in their subjects (e.g., Mathematics, Physics, Chemistry, or Biology)?**

6. **How prepared do you think students are to help their future students to comprehend the texts they will use to teach their subjects once they graduate?**

Very Prepared Prepared Somewhat Prepared Not Prepared

Explain your choice

7. **What other issues do you think need to e addressed in teaching students to be competent readers of all texts including those in mathematics and science?**

8. **How might the department of English and Communication Skills address those issues to make students competent readers of all texts?**

9. **How might the other departments address those issues to make students competent readers of all texts?**

10. **Any other comments?**

Appendix G

INTERVIEW GUIDE FOR ELIMU COLLEGE ENGLISH AND COMMUNCIATION SKILLS LECTURERS

1. What is your educational background (probes – schooling, where, when)?
2. How were you educated to become an English teacher? Describe that education (probe)
3. Describe for me your professional background (number of years worked, where taught, when came to Elimu College)
4. Please describe for me the English and Communication Skills program here at Elimu College (which topics, when covered)
5. What aspects of reading are covered in the program?
6. How do you incorporate reading comprehension in your teaching (what strategies do you emphasize, why, how applied, how monitored, any challenges, adjustments)?
7. Describe for me a typical reading comprehension lesson
8. What is your role in a reading comprehension lesson?
9. What is the student's role?
10. What texts do you use for reading comprehension instruction?
11. What is the place of reading comprehension instruction in a content-specialty institution like Elimu College?
12. How, in your opinion, can reading comprehension instruction be strengthened?
13. What should Elimu College know and do for future English and Communication Skills pre-service teacher programs?

Appendix H

INTERVIEW GUIDE FOR ELIMU COLLEGE CONTENT AREA LECTURERS

1. What is your educational background (probes – schooling, where, when)?
2. How were you educated to become an English teacher? Describe that education (probe)
3. Describe for me your professional background (number of years worked, where taught, when came to Elimu College)
4. Describe for me your understanding of comprehension.
5. What is the place of comprehension instruction in a content-specialty institution as such this one?
6. What do you do to help your students comprehend the texts they read and/or the ones you use for instruction in your subject area?
7. What strategies do you emphasize (probe why, how applied, how monitored, any challenges, adjustments)?
8. What texts do you use for comprehension instruction?
9. How, in your opinion, can comprehension in the content areas be strengthened?
10. What should the English department know and do for future pre-service teacher programs to enhance comprehension of different texts?

Appendix I

ELIMU COLLEGE LECTURER PARTICIPANT OBSERVATION SCHEDULE

Objectives Aspect(s) of reading comprehension taught	
What done before, during, and after reading Text	
Texts used (Narrative or Expository) and text supports emphasized	
Strategies emphasized: Selection, application, monitoring, adjustments (think-alouds; hierarchical order of information; re-reading; summarization)	
Teacher Educator's Role (How instruction orchestrated)	
Pre-service Teacher's Role	
Connection (personal, subject areas)	
General Remarks/Comment	

Appendix J

QUESTIONNAIRE FOR ELIMU COLLEGE PRE-SERVICE TEACHERS

Answer **ALL QUESTIONS** by filling in the blank spaces below.

Part One

1.What is your gender? ----------

2. What was the last secondary school you attended? ----------

3.What [factors] influenced your decision to come to Elimu College?

4.What is your subject combination?

Part Two

1. **How would you rate your ability to comprehend/understand texts of all kinds?**

Very able Able Somewhat Able Needs Improvement

Explain your choice

2. **How would you rate your ability to comprehend/understand texts in mathematics and science?**

Very able Able Somewhat Able Needs Improvement

Explain your choice

---

3. **How does reading comprehension instruction help you in your subject areas (Chemistry, Physics, Mathematics, Biology, Physical Education)?**
4. **What kinds of texts/passages do you find most useful/significant in your learning and easy to understand?**

Part Three

5. **How important is it for you to teach your future secondary school students to comprehend/understand texts in the subjects you will teach?**
6. **How might you help your future students to comprehend/understand the texts they will use to read in the subjects you will be teaching?**
7. **What recommendations and suggestions do you have for Elimu College with regard to preparing pre-service teachers to comprehend mathematics and science teachers?**
8. **Other comments?**

Appendix K

Summary of Research Activities and Dates

Month/Year	Proposed Research Activities	What Actually Transpired
May 2005	Arrive in Kenya and seek permission from Kenyan authorities to conduct educational research at Elimu College. Pay for the research permit to the Kenyan authorities.	Arrived on June 1, 2005. Research delay by one week
June 2005 Week 1: 1st –3rd	Gain entry into research site • Seek permission to conduct research in Elimu College • Identify and contact participants, gain consent • Gather syllabus and other instructional materials • Finalize preparation of surveys/interview materials	• Informally sought to conduct research at Elimu College • Talked to partisans • Finalized and pilot tested the research instruments

June 2005 Week 2: 6th – 10th	Administer: • Lecturers' pre-interview qualitative survey questionnaire Conduct: • Lecturer pre-observation interviews Meet with lecturer participants, discuss and request: • Lecturer reflective journaling for each lesson taught • Permission to conduct classroom observation Write: • Field notes on pre-observation interviews • Reflective Journal Begin: • Transcribing interviews with analytic memos • Preliminary inductive data analysis	<u>June 6</u> Applied for Research Permit from MOEST <u>June 7</u> Verbal consent from CP Contacted other participants Informally discussed Research and got informal Ideas – and jotted down as Preliminary findings <u>June 8</u> Send out letters inviting HODs And English Department to Participate <u>June 9</u> Pilot test instruments and make changes <u>June 10</u> Student questionnaires Administered
June 2005 Week 3: 13th – 17th	Start: • Observations of lecturers Write:	<u>June 13</u> Research Permit Start data analysis from talks, participant observation

	• Field notes on classroom observations • Reflective journal Continue: • Interviewing lecturers • Transcribing interviews with analytic memos • Preliminary inductive data analysis	note questions emerging No formal interviews yet. <u>June 14</u> Receive student qnnaires Talked in staffroom with 20 lecturers <u>June 15</u> Intensive data entry <u>June 17</u> C/R Observation Data analysis
June 2005 Week 4: 20th – 24th	Continue: • Observations of Lecturers • Preliminary inductive data analysis • Writing field notes on classroom observations • Reflective journaling	<u>June 23</u> Plan for 1 interview & 2 C/R obser. fail illness; other engagements –busy More questionnaires

June July 2005 Week 5: 27th – 1st	Conduct: • Lecturer interviews Continue: • Observations and writing of	Data analysis

	fieldnotes • Data analysis • Reflective journaling	
July 2005 Week 6: 4th – 8th	Conduct: • Lecturer interviews Continue: • Observations • Transcribing interviews with analytic memos • Data analysis • Writing field notes • Reflective journaling	July 4, 2005 Classroom observation 9 -10 A.M. July 5, 2005 Classroom observations on at 10:30 -11:30 A.M & 3:30 -4:30 P.M. Post observation interview at 11:30 to 12:30 P.M. July 6, 2005 Pre-observation interview at 9:00 – 10:00 A.M. C/R observation 10:30 -11:30 A.M. July 7, 2005 Interview 10:30 – 11:30 A.M.
July 2005 Week 7: 11th – 15th	Conduct: • Lecturer interviews Continue: • Observations • Transcribing interviews with analytic	July 11, 2005 Classroom observation 12- 1 P.M. July 12, 2005 C/R observation 11:30 – 12:30 A.M. Post-Obser. Interview 12:30 – 1:30

	memos • Data Analysis • Writing field notes • Reflective journaling	P.M. <u>July 14, 2005</u> C/R obser. 5 – 7 P.M.
July 2005 Week 8: 18th – 22nd	Administer: • Pre-service Teacher Qualitative Survey to all second-year pre-service teachers • Passage rating exercise Conduct: • Post observation interviews Continue: • Transcribing interviews • Data analysis • Reflective journaling • Writing fieldnotes	Data analysis
July 2005 Week 9: 25th – 29th	Conduct: • Focus group interviews Write: • Fieldnotes on focus group interviews • Reflective journal	<u>July 28, 2005</u> Informal interview in staffroom <u>July 29, 2005</u> Interview 9 – 10 A.M. CACAL3 Interview 4 – 5 P.M. CAL3
<u>August 2005</u>	Complete transcription of focus group	

	interviews
	Continue data analysis
September 2005 -	In-depth examination, description, analysis
January 2006	and interpretation of data
February – April	Dissertation Writing
2006	Dissertation defense and submission
August 5, 2006	Graduation
	Go to Kenya
	Send copy of dissertation to the Kenyan
	authorities (A requirement for research
	studies done in the country)