CHAPTER 1

INTRODUCTION

Context

Zambia is a country in the Sub-Saharan region whose government is committed to educational provision for all school-aged children in the nation. However, due to the pervasiveness of poverty and HIV/AIDS throughout the country, in addition to insufficient teacher training and teacher deployment to schools, educational provision for both primary and basic school students is severely compromised. A potential solution to these problems might be the use of short-term, in-service programs focused on basic teacher training information. The purpose of this research study is to determine whether in-service, on-site teacher training has an impact on the teaching ability of basic school teachers in rural and urban Zambian schools.

Two recent events provided an international context that contributed to shaping educational provision in Zambia. The first event was the World Conference on Education for All held in Thailand in 1990. It was organized to alleviate widespread concern over the inadequacy and deterioration of education systems during the 1980s, and concern for the millions of children and adults in many third world countries who remain illiterate. The conference was convened by the United Nations Development Programme (UNDP), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Children's Fund (UNICEF), and the World Bank (Lungwangwa et al., 1999). A

total of 155 governments participated, which included government officials representing Zambia. Participants agreed to take the necessary steps to universalize primary education and reduce illiteracy before the end of the decade (Lungwangwa et al., 1999).

The second event, the United Nations Millennium Declaration, occurred in the year 2000. This declaration was a seminal occurrence and constituted an unprecedented promise by world leaders to address, as a set of simple but powerful objectives, peace, security, development, human rights and fundamental freedoms (United Nations, 2005). Zambia was among 190 countries that adopted the Millennium Development Goals and committed to meeting the following eight goals by the year 2015: 1) eradicate extreme poverty and hunger; 2) achieve universal primary education; 3) promote gender equality and empower women; 4) reduce child mortality; 5) improve maternal health; 6) combat HIV/AIDS, malaria and other diseases; 7) ensure environmental sustainability; and 8) develop a global partnership for development (United Nations, 2005). These two events provide an international backdrop for the exploration of teacher training in Zambia and its impact on primary school education.

Zambia is a democratic republic located in Sub-Saharan Africa, having gained its independence in 1964 from Great Britain following forty years of direct rule by the British (Küster, 1999). At the time of independence there were only 961 college graduates in the country, all of whom attended a university outside of Zambia since there were no universities or colleges in the country prior to 1966

(Kelly, 1999). Immediately after independence the state government acquired almost total control of the educational system and quickly expanded it (Carmody, 2004). In 1966 the University of Zambia was opened, and between the years 1966 and 1977 five new primary teacher-training colleges were opened, in addition to two new secondary teacher- training colleges. At independence, the country already had six teacher-training colleges, which brought the total number of teacher-training colleges in Zambia to thirteen (Manchishi, 2004).

The current teacher education course utilized by these teacher training schools, known as Zambia Teacher Education Course (ZATEC), was written in 1997 by the Ministry of Education. With financial assistance from the Danish International Development Agency (DANIDA), the program was established with the objective of developing a national and cost-effective strategy for teacher training which would increase the number and quality of trained teachers in Zambia (Ministry of Foreign Affairs of Japan, 1999). "The course seeks to develop competencies, which allow teachers to plan, implement and evaluate effectively pupil learning, taking full account of the need of the nation, the community, the school and the learner" (Manchishi 2004, p. 7). The goal of the Zambia Teacher Education Course was to graduate 4,000 teachers annually, since only 1,900 teachers had graduated annually from the teacher-training colleges prior to 1994 and the nation was in dire need of primary school teachers. (Carmody, 2004). It is a two year program with the first year comprising students enrolled in both theories of learning and theories of teaching courses in a college

setting. The second year the students teach in the school system under the supervision of mentors.

The curriculum stresses literacy and numeracy objectives and it attempts to integrate the courses into different subject areas to provide a relevant curriculum for the pre-service teachers (Manchishi, 2004). The curriculum includes six study areas: education studies (sociology and psychology of education), mathematics and science (math, general science, agriculture, geography), expressive arts (art, music, dance, physical education), literacy and language education (local languages, English), social, spiritual and moral education (history, geography, civics, religious education, moral education), and technology studies (design, home economics, industrial arts, technology) (Carmody, 2004). This curriculum is a radical change from previous methods of studying each of these subjects separately, and the hope is that teachers will be better prepared to teach following their limited study time of one year in a teacher training college. The mentoring program during the second year is designed to help the pre-service teachers gain experience under the supervision of a local school mentor and a college tutor.

Teacher education colleges have three levels of training. The first level is the certificate level, which prepares students to teach in Grades 1 – 7 in lower and middle primary schools. To enter these colleges, students must have a Grade 12 Certificate or a General Certificate of Education. The study time for this certificate is two years, with the first year in college and the second year teaching in a classroom. There are currently ten teacher training colleges that give certificates.

The second level is the diploma level, which is required to teach in upper basic education Grades 8 and 9. These students have an additional one year program (or one and a half years by distance learning) and also specialize in two teaching subjects. There are five colleges these students can attend to obtain a diploma, all of which include a distance learning program. The third level is the degree level for teachers of Grades 10-12 in secondary schools, and comprises two additional years of study beyond a certificate program. Students must attend a college affiliated with the University of Zambia to obtain their degree (Manchishi, 2004). Interestingly, teachers of commercial subjects such as agricultural science and industrial arts are trained in institutions which are not teacher training colleges and are under the auspices of government ministries other than the Ministry of Education (Manchishi, 2004).

While the Ministry of Education has established the requirements to qualify people to teach, some of the teachers actually teaching in the classrooms have not completed these requirements. In a 1998 survey sponsored by UNESCO and the Ministry of Education, the teaching qualifications of all sixth grade teachers throughout the nine provinces of Zambia were recorded. All primary teachers of Grades 1 to 7 in Zambia are expected to have completed a minimum of twelve grades of primary and secondary education, as well as two years of pre-service teacher training. The research showed that 81 % of all sixth grade teachers completed Grade 12 and 58 % completed the two pre-service years of training. However, results from the same survey revealed that 96 % of Grade 6 students

attended schools where their headmasters had completed the required two years of pre-service teacher training (Nkamba & Kanyika, 1998).

Fortunately, these statistics are now out of date; standards of teacher education have risen since the late 1990s. During recent research in Choma District, I found that 86 % of the 148 teacher participants in this study have completed the required two years of teacher training. In addition, many of these teachers, especially those teaching Grades 7 and 8, are taking classes towards their diplomas or have already completed them.

Teacher training in Zambia is burdened with the commitment to provide educational opportunity for all primary age children alongside the realities of life in the nation. A major obstacle to the attainment of the 1990 Education for All and the 2000 Millennium Development Goals objectives is the inordinately high percentage of Zambians with HIV/AIDS. According to the 2002 Zambia Demographic Health Survey, 16.5 % of the population aged 15 - 49 is HIV positive (Organisation for Economic Co-operation and Development, 2005). Approximately 21.5 % of the total population of Zambia is estimated to have HIV/AIDS, with higher numbers of professionals, including teachers, infected (Wood, Berry, Tambulukani, Sikwibele, & Kanyika, 2003). Due to the scourge of HIV/AIDS, life expectancy at birth is currently only 38 years (UNICEF, 2005). Additionally, by 2010, Zambia's population of primary school age children is expected to be about three-quarters of a million less than it would have been without HIV/AIDS (Kelly, 2000).

Education provision has been enormously impacted by HIV/AIDS, with 6 % of teachers lost each year to HIV/AIDS (Zambia National Submission, 2004). In 1999, more teachers died of HIV/AIDS than passed teacher training programs (BBC News, 2000, April 24). Kelly (2000) states that the prolonged illness of teachers with HIV/AIDS creates a very difficult situation for rural schools because, not only are they frequently absent from their classroom, but when they become very sick they ask for transfers to urban areas so they are closer to medical facilities. This leaves vacancies in the rural schools which, if filled, are usually given to inexperienced teachers. In addition, these HIV/AIDS infected teachers are kept on the payroll until they die, creating even more financial distress within the Ministry of Education budget (Kelly, 2000). The 1999 Zambian Ministry of Health Report notes there are decreasing numbers of trained teachers, increased teacher absenteeism, reduced public finance for schools, more orphans with less access to education, and fewer children able to afford, attend, or complete school (Malambo, 2000; Nakacinda, Libindo, & Msango, 2001).

In addition to the endemic HIV/AIDS problem, educational provision is also aggravated by the rampant poverty in Zambia. With a population of over 11 million, Zambia ranks 143 out of 162 on the 2001 United Nations Human Development Report (Verhagen, 2002). The majority of the population, 73 %, is classified as living below the poverty line. Income is unequally distributed, with the top 20 % of the population receiving 57 % of the per capita income, while the bottom 40 % receive 11 % (Verhagen, 2002). Furthermore, poverty is more

prevalent in rural areas, where it affects 83 % of the population, than urban areas, where 56 % are affected by poverty (Henriot, 2005, September 3). Poverty-related malnutrition is widespread and continues to jeopardize Education for All in Zambia (Malambo, 2000).

Poverty and HIV/AIDS have an enormous negative impact on education in Zambia. At the primary level, only 68 % of girls are enrolled in school, and only 69 % of boys attend primary school. The numbers greatly decrease at the secondary level; only 21 % of both males and females attend secondary school (United Nations, 2005). This sharp decline occurs because primary education (Grades 1 to 7) is now tuition-free for everyone, but school fees are a prerequisite to attending Grades 8 to 12. Because of the extremely high level of poverty in the country, many parents simply cannot afford the school tuition.

The picture indeed looks grim. A recent editorial in the Lusaka Post states that while Zambian political leaders are claiming that the economy has improved, in reality both unemployment and poverty are on the upswing (The Post [Online], 2006). The editor continues that it is a matter of urgency that the nation devises a workable strategy to create jobs in the rural areas. "We cannot continue to wait for more than 15 years in the hope that some private investors will be miraculously attracted to these areas. We have to find a solution to the job crisis in these areas and it is our collective duty to do so" (The Post [Online], 2006). Educational provision is greatly affected by the rising poverty and unemployment throughout Zambia. Since governmental leaders view the increase of educational provision as

the primary means of attaining economic stability in Zambia, increasing teacher effectiveness within the classroom is essential to achieve this objective.

Research Question

Improving educational provision for school-age children in Zambia seems overwhelming. Rampant poverty, HIV/AIDS infections, and limited finances available from the Ministry of Education for the education budget all impede the attainment of educational goals. In an effort to contribute to the education of Zambian children, this study addressed the question of whether short-term, in-service teacher training influences the teaching practice of rural and urban basic school teachers in Zambia. Do in-service, on-site teacher training interventions impact the behavior of rural and urban basic school teachers in Choma District, Zambia? Will in-service teacher training seminars facilitate the attainment of the Education for All objective and the Millennium Development Goals agenda? An ancillary question examined relationships between the questionnaire used in the study and demographic information obtained from the teachers: years of teaching experience; years of completed education; and gender. For example, how does teaching experience relate to teacher use of available resources? Are teacher/student interactions affected by gender? Does teacher training education influence methods and techniques used by teachers? These auxiliary questions were explored to determine if they contributed relevant information to the primary question.

Definition of Terms

Three explanations of commonly used terms in this research are essential to fully understand this study. The first clarification is the distinction made between primary schools and basic schools. The literature about educational provision in Zambia uses the terms primary education and secondary education, with few references to basic education. In the past, the name primary was used to refer to Grades 1 to 7, the terms upper primary or basic applied to Grades 8 and 9 and secondary was used to indicate Grades 10 to 12. Currently, the majority of primary schools are referred to as basic schools, which indicates Grades 1 to 9 are part of these schools. All six of the schools involved in this research are basic schools, meaning they have classes for students from Grade 1 to Grade 9. Most of the schools which are called primary schools in the literature are now identified as basic schools in Zambia. Some confusion exists because primary education, Grades 1 to 7, is tuition-free for students, whereas students in Grades 8 and 9, which are included in all basic schools, are charged a school fee. In addition, enrollment in Grades 8 and 9 is currently available at both basic schools and secondary schools. For example, a student in Grade 8 or 9 could attend school at Sikalongo Basic School or at Sikalongo Secondary School. According to teachers and administrators at these schools, the quality of education is superior at the secondary school and only the highest achievers from Grade 7 can enter Grade 8 at the secondary school. The lower achieving students either attend Grade 8 at the basic school or drop out of school, if tuition is a deterrent. The headmaster at

Sikalongo Basic School indicated by 2015 all Grades 8 and 9 will be part of basic schools throughout Zambia and all secondary schools will be high schools, meaning only Grades 10, 11, and 12 (A. Muchimba, personal communication, August 3, 2006). Therefore, the current literature regarding schools in Zambia should identify schools as either basic or secondary schools. This study concentrated on teacher training at six basic schools in Choma District.

A second clarification of the literature on educational provision is the distinction between rural and urban schools in Zambia. A working document from the National Education Statistics Information Systems states the definition of urban areas in Zambia as localities of 5,000 or more inhabitants, the majority of whom depend on non-agricultural activities (Wako, 2005). This report continues that the classification of schools in rural areas is a complicated matter because a school may be located in an urban area according to the definition, but a considerable number of students may come to school from outside the town to attend that school. Further explanation came from the Lusaka Central Statistical Office definition which states a rural area is one in which both an agrarian economy predominates and there is the existence of a pattern of villages and communities engaged in agrarian pursuits. An urban area is defined as one which has some social activities and services, such as piped water, and in which the majority of economic income is not derived from agricultural sources (Mutanekelwa & Mweemba, 2004). Among basic school teachers in Zambia, this distinction is an important one, because teachers in rural areas receive as much as 20% additional salary as "rural hardship"

compensation, since many of the rural schools do not have the availability of electricity or running water. For some rural teachers the extra pay is adequate compensation for the additional physical inconveniences they endure, but for others the hardship is too great and they would prefer to be in urban schools

The Central Statistical Office findings are that 62% of the population in 1998 was rural and 38% was urban (Mutanekelwa & Mweemba, 2004). Professor Longe, a UNESCO consultant, confirms the high rural population of Zambia, stating 60% live in rural areas (Longe, 2003). Since the population of Choma is listed as the 17th largest city in Zambia, with a population of 40,405 in the year 2000, and has piped water available to most areas of the town, the three schools in Choma - Nahumba Basic School, Shampande Basic School and St. Patrick's Basic School - are considered urban schools even though they are not located in a large urbanized area (Google Earth, 2006). In contrast, the population for a seven kilometer radius from the center of Sikalongo is 2880, and the population for a seven kilometer radius from the center of Batoka is 3337 (Falling Rain Genomics Inc., 2004). Not surprisingly, the population number for Mboole could not be located, due to its small size. Therefore, Sikalongo Basic School, Batoka Basic School and Mboole Basic School are designated as rural schools. These two clarifications of terms will provide for a more comprehensive understanding of in-service teacher training in Choma District.

A third definitional clarification relates to the use of the word "in-service". Western schools often have in-service days in which all the teachers attend

meetings located at the school site. School principals review policies, curriculum directors explain new book series, speakers give motivational talks and some time is often given for individual teachers to have meetings or work in their rooms. The term in-service in Zambia assumes a meeting that is held at one school, with only very few teacher representatives from other schools attending the meeting, in addition to the headmasters. The difference in meaning encompasses two distinctions: 1) the in-service meeting or training is only for teacher representatives and not the entire body of teachers at a particular school; and 2) the meeting or training is held at only one centrally-located school. Therefore, the majority of teachers do not participate in the in-service meeting or training. Because this distinction between the meanings of this term only became clear to me during field research, the usage of the term in-service throughout the duration of this research implies training that takes place on site at each school and is available for attendance by all teachers at each school.

Historical Perspective

An adequate comprehension of the overwhelming odds Zambians face in providing education for all children cannot be realized without some historical background of the country. While the following section is not meant to be exhaustive, it does provide more than a mere glimpse into Zambia's past. Because the complexity of its history, with its long period of control by Great Britain, is fundamental to an understanding of its current day status, a more detailed historical perspective is both helpful and warranted.

The British were the dominate influence in Zambia prior to the attainment of independence by Zambia in 1964. During the years 1890 to 1911, Zambia was divided into two parts, the east and the west, which were known as Eastern Rhodesia and North Western Rhodesia (Mukoboto, 1978). The first Europeans to enter these territories were Portuguese, but their activities were insignificant (Turok, 1989/1999). It was the reports written by David Livingstone, who originally came to South Africa as a doctor with the London Missionary Society, which encouraged European interest in Eastern and North Western Rhodesia. Livingstone was motivated by a strong desire to promote missionary work and, although he actually never founded a permanent mission station, he did have a great influence in directing mission societies to Central Africa. At his suggestion, both the London Missionary Society and the Church of Scotland Mission Society sent missionaries to these territories prior to 1890 (Henkel, 1989/1999). Before the turn of the century these two mission societies had started eight new stations of work, and four new mission societies had arrived in Eastern and North Western Rhodesia. Mission societies immediately began the arduous task of opening schools for children in the surrounding villages. Early mission schools were primarily regarded as a means to win converts and to increase the membership in their Christian congregations (Küster, 1999). Reading was taught so the African students could read the Bible, and education was considered a means to an end rather than an end in itself.

During this same time period, Cecil Rhodes was making a fortune in diamond mining in South Africa. He wanted to extend his hold over the regions to the north and in 1889 he founded the British South Africa Company in an effort to forestall the possible annexation of the territory by other European countries. He obtained a royal charter from the British government which bestowed the powers of government to the British South Africa Company, and the company took possession of North Western Rhodesia in 1897 and soon incorporated Eastern Rhodesia under its power (Turok, 1989/1999). In 1911, on behalf of the British government, the Company merged the two territories into Northern Rhodesia, and continued to rule the region until the territory was transferred to the Colonial Office in 1924. This period, from 1911 until 1924, brought significant changes for African society. A railway was completed in 1909 connecting South Africa to copper mines in Katanga, Zaire, north of Northern Rhodesia, and large "hut taxes" were imposed by the British South Africa Company to finance this project. These taxes, due in cash, made it necessary for African men to leave their villages and work as laborers in the diamond mines of South Africa (Küster, 1999). Although income to the British South Africa Company from African taxes rose from £6,000 in 1902 to £72,000 in 1914, this amount was insufficient to cover the cost of administration, and the Company encouraged the settlement of white immigrants to develop the territory and raise the tax base (Turok, 1989/1999). Thus, the European population grew from 1,497 in 1911 to 3,624 in 1921, with most of the immigrants settling near

the railway. The British South Africa Company's prime interest during these years was twofold: 1) to keep administrative costs to a minimum and use the territory's African population as a source of cheap labor for local farms, which were owned and managed by white settlers, and 2) to maintain control of the diamond mines of South Africa and Zimbabwe (Küster, 1999). The official policies of the Company did not provide any incentive for the establishment of a local social infrastructure, including schools, and the development of an educated African workforce was considered irrelevant to the British South Africa Company's leaders. The entire economy of Northern Rhodesia during these years was geared towards mining and the interests of the settlers (Kelly, 1999).

The educational development in Northern Rhodesia under the rule of the British South African Company was entirely established and maintained by the mission societies. Schools were seen as an integral part of mission work, since the missionaries placed their main hope for unwavering converts to Christianity on the young people of the villages (Kelly, 1999). As in the period prior to British South Africa Company rule, the mission schools were motivated to teach reading so people could read the Bible and spread the gospel message to others. Some of the mission schools also wanted to teach carpentry, blacksmithing and other skills that would help Africans raise their living standards. At first, local people showed little interest in school, but this slowly changed with the realization that an education increased the possibility of obtaining paid employment and thus augmented the ability to pay their hut taxes (Kelly, 1999).

Changes in the socio-economic climate of Northern Rhodesia, which were the effect of more education, became apparent within the culture. Education of young men enabled them to obtain salaried employment and subsequently pay the required bride wealth demanded by their brides' families, instead of working for their future in-laws' families as payment for their brides, which could take years to complete. School attendance therefore enabled young men to "circumvent certain long-standing social practices" (Küster, 1999, p. 258). Girls also benefited during this timeframe as education slowly became available for them. The London Missionary Society established a girls' boarding school in Mbereshi in 1915 and by the year 1925, five additional girls' schools were established by various mission societies, due to the success of the school in Mbereshi (Department of African Education, 1952/1999).

There was an ever increasing demand for educational facilities by the African communities during the time period 1890 - 1925, and mission societies asked the British South Africa Company for financial assistance. Except for one school, the Barotse National School which was founded in 1907 in accordance with an agreement between the British South Africa Company and Chief Lewanika (which gave the Company exploration rights throughout North Western Rhodesia in exchange for an annual sum of £2,000 and the establishment of a school), no other schools in Northern Rhodesia received financial assistance from public funds before 1925 (Department of African Education, 1952/1999). The mission societies met in 1914 for the first General Missionary Conference held in

the territory and discussed the African population's growing desire for more schools. They passed a resolution urging the British South Africa Company to subsidize all approved primary schools in Northern Rhodesia (Küster, 1999). The Company's reaction to the resolution was to inform the mission societies that no action would be taken because administrative costs were already much higher than tax revenues and their shareholders were not in favor of losing even more money by subsidizing African education. Küster (1999) notes that the mission societies repeated their requests for financial assistance at successive conferences in 1919 and 1922, but no funds were forthcoming. In 1918 the British South Africa Company passed the Native Schools Proclamation, which stipulated that a school could be closed if the government found it to be detrimental to the existing ruling order of the village. The administration was given the right to require a certificate of efficiency and good conduct from the teachers, who had to prove that they were married and were living with their wives in the villages where they taught. Teachers could be removed by the administration if they were found guilty of subversion, misconduct, or interfering with a government official. Additionally, missionaries were ordered to inspect schools at least four times a year (Küster, 1999).

The British South Africa Company's attempt to control the schools, to which it contributed nothing, provoked very strong reactions from the missionaries. One Livingstonia missionary from Chitambo wrote that "the general impression one receives is that missionaries, instead of being looked upon

as fellow workers, are regarded as potential criminals" (Küster, 1999, p. 238). The mission societies continued their demands for government funding, arguing that the additional supervisory work could not be accomplished without some financial responsibility taken by the British South Africa Company. Although financial help never materialized, the strong missionary resistance led to the repeal of the Native Schools Proclamation (Kelly, 1999). The number of schools and students continued to rise rapidly during British South Africa rule. By 1924, the year their rule ended, an estimated 100,000 African children were attending 1,977 schools (Küster, 1999). This educational expansion was due to the active pursuit of formal schooling on the part of the African population, in spite of a lack of governmental support of an educational infrastructure. One example of African diligence is the Dutch Reformed Church schools in the eastern part of the territory, which were built and financed by African villagers, who also contributed to their teachers' salaries and provided housing and food for them (Küster, 1999).

Although the British South Africa Company enabled Europeans to settle in the territory, there was some friction between both parties. The European population had grown and the Company, being in debt, planned to impose a tax on their income (Turok, 1989/1999). The British South Africa Company also planned to merge the territory of Northern Rhodesia with Southern Rhodesia in order to cut administrative costs. However, the settlers in Northern Rhodesia preferred a transfer of power to the British government, and since the region had

failed to produce adequate revenue for the British South Africa Company, negotiations began for such a transfer. Turok (1989/1999) notes that true to its character, in the transfer agreement with the British government, the Company retained monopoly over mineral rights in the territory in perpetuity. In 1924, Northern Rhodesia became a British Protectorate and a Crown Colony.

The following year a Sub-Department of Native Education was created within the Department of Native Affairs of the London Colonial Office (Küster, 1999). This was the direct result of increased pressure from the mission societies for substantial educational grants for their schools, and the rising African demand for more schools. The change of administration and the visit of the Phelps-Stokes Commission to the territory gave new impetus to their efforts. The London Colonial Office set guidelines for African education in all British colonies in tropical Africa, resulting in the Advisory Committee on Native Education in British Tropical Africa requesting the Phelps-Stokes Foundation to send a commission to East Africa in 1924 (Kelly, 1999). The Phelps-Stokes Commission met with the General Missionary Conference in June, 1924, and recommended an adaptive educational program for Africans based on the Commission's perception of educational provision for Negroes in the United States. The commission's concern was that education should prepare students for life in the rural village community, and it recommended a simple, utilitarian form of education rooted in agriculture with little academic content (Kelly, 1999). Mukoboto (1978) discusses the various meanings of this adaptive educational

program: to the Phelps-Stokes Commission it implied education similar to Negroes in the southern part of the United States; to the white settlers in Northern Rhodesia it was a way to keep Africans in an inferior position; to the missionaries it was a way of saving Africans from their sins and ignorance; and to the British politicians it was a form of paternalism whereby white masters could guide the Africans. "Most of the anthropologists who were writing on Africa then had never bothered to find out about the systems they were studying from another point of view" (Mukoboto, 1978, p. 4). He continues "this approach to African education indicates that adaptation was to copy the western culture…African culture was condemned before it was understood. The education to be introduced was to be individualistic in nature, which was a foreign element in African culture" (Mukoboto, 1978, p. 10).

During the years 1925 to 1945, policy statements from Colonial Office were almost entirely devoted to primary education. There were no coherent, directive policies on the development of secondary education (Kelly, 1999). The over-arching philosophy guiding all educational policy during this time period was that "…nothing should be done that would threaten European dominance" (Kelly, 1999, p. 39). By only providing rudimentary education, the government ensured that the African population was prepared to work in the field or in unskilled jobs in the wage economy. Africans were not able to compete with Europeans for high level jobs, thus protecting the economic position of the settlers (Carmody, 2004). To guarantee this protection of the settlers' positions within the economic structure of

Northern Rhodesia, the British adopted a theory of indirect rule which was used in other parts of Africa during this time period (Mukoboto, 1978). The Africans were ruled through their chiefs, who were subordinated to and dependent upon the British government. By instituting policies through the chiefs, the Colonial Office intentionally tried to avoid the problems they had previously faced in India, where "…the British had trained too many intellectuals who gave them problems because they became politically minded. From this Indian experience, it was argued by the British that the inevitable results of intellectual education was the undermining of respect for authority" (Mukoboto, 1978, p. 21).

The mission schools continued to dominate the provision for education in Northern Rhodesia. By 1935 there were 1,990 mission schools and by 1945 there were 2,034 mission schools. In contrast, the Government and Local Education Authorities had 12 schools in 1935 and 51 schools in 1945 (Kelly, 1999). The concentration of provisional education was on primary schools and the teachers were poorly educated, poorly trained and poorly paid. In addition, minimal financial support was given to the establishment of new schools or the support of existing mission schools; the taxation of the Northern Rhodesians between 1930 and 1940 produced £24 million for the ruling authorities and only £136,000 of that amount was given to the schools through developmental grants (Turok, 1989/1999). Until 1939, more money per year was spent on educating 1,248 European children than was spent on over 92,000 African children (Kelly, 1999). Educational provision by the governing power was minimal and the prospects

were bleak for African students during these years, particularly for those students desiring secondary education. By 1945, there were only 65 African students attending secondary courses and the Mulani Training Center was the only school in the colony which provided four years of post-primary education (Küster, 1999).

The need for better trained upper primary teachers provided the impetus for the initial provision of secondary education for Africans. Not surprisingly, a British historian writes that the decision to institute secondary schools came from the Colonial Office rather than from the local administration. He noted African demand for secondary education was relatively small and of little effect in the determination of policy (Coombe, 1968/1999). In contrast, Küster (1999) states continuing African pressure for the provision of a more advanced level of schooling became more forceful and eventually the Advisory Committee on Education compelled the colonial government to abandon its excuse-and-delay tactics and agree to the extension of a capital grant towards the building of the Protectorate's first secondary schools for Africans, which opened in the 1940s.

> The determination displayed by African town dwellers to gain access to schooling is reflected in a statement made by the missionary J. Soulsby in 1936 who remarked: In Mufulira a school had been opened in our Mission Hall and two inexperienced teachers were struggling with 85 scholars in the morning, 76 in the afternoon and an adult class in the evening at which 135 men sat around three blackboards or struggled to spell out Bemba syllables from printed sheets. The school simply had to be opened because the children and men in their quest for knowledge would not be denied and began organizing themselves. (Küster, 1999, p. 243)

The development of secondary schools was not initiated by the Colonial Office in London until after World War II (Henkel, 1989/1999). Progress was slow and by 1960 there were sixteen mission secondary schools and only eight secondary schools run by the government and two schools operated by the mining companies. "As a whole, the system of secondary schools was only slowly and belatedly developed in Northern Rhodesia" (Henkel, 1989/1999, p.126). The establishment of secondary education for girls was very delayed for two main reasons: 1) mission schools gave priority to boys since they were expected to be pastors, catechists and teachers in the mission schools; and 2) African mothers valued their daughters being at home and helping with the traditional domestic chores (Mukoboto, 1978). In 1946, three girls, a mere 2% of the total student population, enrolled in Form 1 (Grade 8). However, the number of enrolled female secondary students increased rapidly to 387 by 1960 and 1,379 girls by 1963 (Sanyal, Caes, Dow, & Jackman, 1976/1999). Despite these efforts, the territory's overall educational provision was poor and the neglect of education was a continuing symptom of colonial determination to keep avenues of educational advancement closed to all but white settlers.

Between 1945 and the years immediately prior to independence in 1964, the colonial government's emphasis on rural primary education and the training of African students in lower levels of agricultural skills continued (Küster, 1999). The Education Department's Annual Report in 1948 stated it is extremely

important that the practical side of education be emphasized and any false notions that manual labor is incompatible with education be eradicated. Furthermore, the report states that "Africans have constantly to be reminded that there has been far too much contempt for manual labor, with a contrasting admiration for book-learning and pen-driving… The educational policy of this country is to provide education of a practical type" (Küster, 1999, p. 317). To implement this plan, a third year was added to the upper primary schools which was devoted to practical training in agriculture or industrial crafts, such as building or woodworking, and candidates for Standard Six examinations were graded by their teachers on their ability and eagerness to perform manual work. This policy remained in force until the late 1950s (Kuster, 1999). During this same time period, the Colonial Office passed a series of legislative policies that restricted African accessibility to market areas to sell their maize and produce. The creation of "Native Reserves" and the subsequent removal of 60,000 Africans from the most fertile land near the established markets and the railway system severely restricted even the most industrious farmers. One African asked "What is our good trying to improve or increase the produce of our gardens? Transport is so expensive that it does not pay to send anything to Livingstone for sale" (Küster, 1999, p. 319).

The African response to these continued restrictions was to help shape the nature of their schooling by forcefully articulating their educational preferences. African students viewed their English education as a ticket to jobs with higher salaries. Mission societies were often compelled to react to the pressure from

African students by adapting their curricula to include the teaching of more English and literary skills. The mission schools often capitulated to these requests because their desire was to attract large numbers of religious converts. However, many of the mission schools found themselves in a position where their primary goal of evangelism was being undermined by economic motives rather than religious interest from African students (Kuster, 1999). Africans would switch their mission affiliation in order to gain the kind of education they wanted and those mission schools which refused to teach English or advanced literary subjects witnessed their students transfer to other mission schools where the subjects taught were closer to their educational ambitions. Nevertheless, the lack of adequate educational opportunities created a growing unrest in the Northern Rhodesian African population which could not be abated.

The years from 1948 to 1953 saw more interaction between politics and education than in previous years. Despite strong opposition by the African population to a closer union with the Southern Rhodesian settler state and, consequently, white rule, the Federation of Rhodesia and Nyasaland was established in October, 1953, which united Northern Rhodesia, Southern Rhodesia, and Nyasaland (known as Malawi today). This was the beginning of serious discussion about independence for the territory previously known as Northern Rhodesia and the nationalist movement's fight against the creation of the Federation was replaced by the struggle for full political emancipation (Kuster, 1999). Soon after the imposition of Federation, a new political

organization called the Zambia African National Congress was formed, led by Simon Kapwepwe and Kenneth Kaunda, which quickly gained support in the rural areas. In 1959, the Federation declared the Congress illegal and arrested its leaders (Turok, 1989/1999). During the ensuing protests and violence, schools became the stages for political unrest and teachers all over the territory became involved in nationalist politics and encouraged student activities. A student, reflecting on his years at a school in Chikuni during the late 1950s, said:

> I remember during classes they proved what they proved all over the world teaching about revolution. Even when they were teaching us about the French Revolution, there was a tendency to bring it back to this country. We knew that they could not say openly: 'Do it.' They were planting seeds of revolution in us. It was dangerous for them to come out in the open. …They helped us to analyze the situation and look beyond what was in the book. (Küster, 1999, p. 282)

The issue of education ranked high on the list of priorities articulated by the nationalist movement, and the struggle for educational improvement constituted a significant step on the path towards independence.

The Zambia African National Congress emerged under the new name of United National Independence Party in 1960, and Kenneth Kaunda became its leader (Turok, 1989/1999). Opposition to Federation in Northern Rhodesia was widespread and following various attempts at compromise solutions, the Federal structure was finally dismantled in 1963. Within a matter of weeks the United National Independence Party swept the polls in the first ever "one-man one-vote" election in that territory. Independence negotiations occurred during April and

May, 1964, and the Republic of Zambia became independent on 24th October, 1964 (Turok, 1989/1999).

The educational situation in Zambia at independence was deplorable. In 1964, 75 % of men and 93 % of women in Zambia had not completed the first four years of schooling (Küster, 1999). Only 1,200 Zambians had a secondary school diploma, a number which had been reached in other British colonial countries much earlier - Ghana in 1943, Uganda in 1955, Kenya in 1957, and Tanganyika in 1960 (Henkel, 1989/1999). The white settler domination of both Northern Rhodesia, and later the Federation, took its toll on the educational provision for the Zambian population. Adequate financial and personnel resources were never allocated to Northern Rhodesia to expand secondary schools. Amazingly, the number of university graduates in Zambia at the time of independence was a mere 961 university graduates and all of them had obtained their degrees outside the country (Küster, 1999). There was no university in the country in 1964, and of the 7,200 teachers in all Zambian educational institutions only 600 had completed secondary school, with only 150 of the primary school teachers holding a secondary degree certificate (Kelly, 1999). There were 623,000 children in the age range of 7-14 years in Zambia, of whom only 350,000 were in primary schools, with 270,000 in the lowest four classes. There was enormous demand immediately following independence for more educational opportunities and tremendous pressure to expand the educational facilities of the country. "A crisis of expectations was imminent as people expected immediate

delivery of more education on the attainment of independence" (Kelly, 1999, p. 82).

At independence, Zambia's population was growing very rapidly; in 1962 the population of Zambia was 2.5 million and by 1980 it had doubled to 5.66 million (Achola, 1990). The dearth of educated nationals was one of the glaring problems facing Kenneth Kaunda as Zambia's first president in 1964. "Zambia embarked on her independence with crippling shortages of educated people capable of moving into positions of responsibility" (Snelson, 1993, p. 172). In an effort to improve provision of education, Kaunda and the new political leadership listed its educational priorities as: 1) the elimination of racial segregation; 2) increased enrollments for Zambians at secondary and higher education levels; 3) the introduction of mathematics and science-oriented curricula; and 4) the provision of resources for the University of Zambia to enroll over 1600 students by 1970 (Achola, 1990). However, the implementation of these priorities was severely hampered by the scarcity of skilled and educated manpower, extreme dependence on expatriates, prejudices against technical education, and a surplus of unskilled labor (Kelly, 1999). In an early speech as President, Kaunda set the tone for the new government's concern for educational provision. "Government spending on schools and teachers' houses was only a little over one and a half million pounds last year. In 1965 we intend to spend six million pounds" (Hatch, 1976, p. 207).

Given the neglect of educational opportunities for Zambians prior to independence, it is hardly surprising that the First National Development Plan of 1966/70 of the United National Independence Party stressed increased enrollments in both primary and secondary schools to create more indigenous manpower for the expansion of the economy. Enrollment of students continued to increase with 378,417 students enrolled in primary classes in 1964 and 1,260,564 students attending primary schools in 1984. In addition, secondary school records show 13,853 students enrolled in secondary education in 1964 with this number increasing to 125,811 secondary students attending school in 1984 (Achola, 1990).

It became necessary to recruit qualified teachers from outside Zambia, including many from overseas countries. The Ministry of Education relied on expatriates to teach in secondary schools, and 90 per cent of all secondary teachers were non-Zambian in 1969 (Stannard, 1970). Snelson (1993) observed that it would be many years before Zambia could produce enough of its own secondary teachers to staff all the schools.

Despite the increase of secondary students, considerable complaints were registered by government leaders regarding the insufficient number of secondary school graduates capable of entering professions requiring a mathematical or scientific background. Engineers, physicians, agronomists, and accountants were desperately needed in the economic structure and these professions all required certain knowledge of science or mathematics. The Office of the Vice-President

acknowledged the inadequacy of secondary students' preparation in mathematics and science as evidenced by the following numbers: out of 1,834 secondary school students entered for the Cambridge Overseas School Certificate in 1968, nearly 1,100 did not sit for the mathematics examination or failed it outright, and only about 400 received passing grades (Office of the Vice-President, 1969).

In 1972, The Second National Development Plan 1972/76 was released by the government. This plan continued previous emphasis on accelerated enrollments to furnish manpower required by the economy in the early stages of Zambia's independence. But by the end of 1975 the nation's leaders felt that attempts of the previous 10 years at educational expansion had merely exacerbated existing problems: declining quality of education in the face of massive enrollments; greater demand for new schools which were no longer affordable; high dropout rates at the end of primary school because of limited spaces at the secondary level; and lack of adequate teacher recruitment and training to meet national requirements (Achola, 1990). A new government endeavor, The Educational Reform: Proposals and Recommendations of 1977, provided for a full-scale assessment of the entire educational system. This Educational Reform used the term "universal basic education" to refer to attainment of nine years of school for everyone in the nation. This became the goal of the reform measures; however, it was soon realized that this ambition could only be accomplished over time. In the interim, emphasis was placed on the provision of sufficient places to enable every 7-year-old child to enroll in

Grade 1 and continue through Grade 7. This Reform Act stressed both quantitative expansion and qualitative improvement of Zambian education. High priority was given to the development of well-trained teachers, with reform proposals calling for the expansion of secondary teacher colleges and the construction of a new training college (Achola, 1990).

Because of the severe shortage of qualified teachers, as well as secondary school buildings, many primary students dropped out of school after several years. The term used to describe these students is "school leavers" (Mwanakatwe, 1968). The highest dropout occurred after Grade 7, with only one-third of Grade 7 students able to secure a place in Form I (Grade 8). In a statement in the Zambian National Assembly, the Minister of Education tried to clarify government policy for Form I selection and to allay the anxieties of parents whose children had not been successful. He noted that approximately 41,000 Grade 7 school leavers had applied for admission to secondary schools in 1968. There were only 14,000 available places in Form I classes, which was a 35 per cent progression rate. He continued his speech with the following statement:

> We are having to put into our secondary schools this year 35 per cent of primary school leavers. In Uganda, they can only afford 10 per cent, in Tanzania they have only got 13 per cent and I gather that in Kenya and Rhodesia the percentage is 20, so that in comparison with other countries, Zambia is now in a position to claim that we put more of our population of primary school leavers into secondary schools than any other country on the continent of Africa. (Mwanakatwe, 1968, p. 72)

This was small comfort for anxious parents wanting a better life for their children, which was perceived to be accomplished through more education. In fact, few school leavers could obtain jobs and these children swelled the ranks of unemployed people. Zambians were very concerned about this problem and pressured the government to take action; a new development plan was therefore instituted. The Third National Development Plan 1979/83 was intended to implement aspects of the Educational Reform recommendations made in 1977. The following issues were addressed: 1) improvement of quality of education and teacher education; 2) simple, durable new school buildings with low maintenance costs and use of local construction materials; 3) recurrent and capital expenditure on education avoiding waste; and 4) development of new curricula accommodating necessary educational reforms.

It soon became apparent, however, that the expansion of educational opportunities was more in quantitative than qualitative terms. Due to the rapid expansion, high pupil-teacher ratios existed, shortages of teaching materials were common, and inadequate teacher-training programs resulted in poor classroom performance (Ishumi, 1994). In response to these growing educational problems, yet another study was commissioned by the Ministry of General Education and Culture in 1984/85 to formulate concrete proposals for the implementation of the recommendations of the 1977 Educational Reforms. Because of increasing financial strain on the economy and continued population expansion, this study concluded that realization of Universal Basic Education, the term first used in the

1977 Reform Recommendations, would remain elusive for a long time, but that Universal Primary Education might be attained by 1995 (Achola, 1990).

The continual inability to attain unrealistic goals set by these commissions and study teams was very disheartening to the educational leaders of the nation. One of the main reasons for breakdown of the Reform Recommendations and The National Development Plans was that they were too ambitious. Time and again the plans exceeded financial, material, and human resources and insufficient attention was given to economic, demographic, and logistic factors. Additionally, the capacity of the education ministry to execute the plans and reformations was continually overstretched. Intentions of the education ministry were laudable, but engaging adequate resources was impossible (Kelly, 1999).

In tandem with increased enrollment of primary and secondary school students during the late 1960s and early 1970s, the University of Zambia was established. In 1965 Parliament passed The University of Zambia Act, formalizing the first national university in the country, which opened its doors to students in July of 1966 (Achola, 1990). Kaunda strongly believed if Zambia was to become independent in its conduct of social and economic affairs, it needed a program to train its own citizens. The University of Zambia was his vision for preparing Zambians to take responsible jobs in the most critical sectors of the nation. Conventional academics, however, soon gained control over the new institution and, instead of concentrating on agriculture, mining, and

administration as Kaunda had envisioned, the university was soon filled with aspiring politicians and diplomats (Hatch, 1976).

Although the new university had a prestigious image in the country, it also had its troubles during these years. Between 1971 and 1984 there were four major episodes of militant student opposition at the University of Zambia. The issues ranged from opposition to the United National Independence Party's foreign policies to poor food in the cafeteria. The students were also concerned about rising corruption making government inefficient and depleting the nation's resources. The students enthusiastically voiced their criticisms of foreign, domestic, and university policies, and the student union refused to affiliate with the United National Independence Party, which angered the party. Although university administrators might have been able to negotiate amicable settlements, government officials were unwilling to tolerate criticism from the university students and often took harsh actions against the students (Burdette, 1988). These confrontations resulted in closures of the university, the blanket dismissal of the students, and sometimes the expulsion of foreign lecturers for "fomenting rebellion" (Burdette, 1988, p. 130). These major disturbances led to governmental closures of the university for a total of 400 days within a ten year period, which resulted in a loss of trust and international credibility (Kelly, 1999).

Finances have also been a problem with the University of Zambia. The proportion of funds used by the teaching school declined from year to year, from 39.2 % in 1974 to 29.9 % in 1984. At the same time, the proportion of funds used

for administration and support services grew from 29.4 % in 1974 to 38.6 % in 1984 (Kelly, 1991). There was also a large number of non-teaching and non-research staff, with the university averaging three staff for every two full-time students. The ancillary staff salaries absorbed a considerable proportion of the university's budget. From 1979 to 1984 the non-teaching staff grew at an annual rate of 3.7 per cent, the teaching staff at 3.4 %, and the number of full-time students increased by only 1.4 %. It is significant that the number of auxiliary staff was allowed to grow so rapidly when restraints were being experienced in the economy and when the university could not even supply the teaching schools with necessary materials (Kelly, 1991).

The copper production of the northern region sustained the economic needs of the country for years until the mid-1970s when copper prices began to fall. Planning for the future of the country could not be based on the assumption that the copper price would remain stable, but unfortunately most of the government leaders assumed this was possible (Hall, 1969). Hall predicted the price of copper would fall within the next decade "if all previous cycles in the metal markets have any meaning. When it does, Zambia will suddenly find itself short of money and unable to live in the manner to which it has grown accustomed" (Hall, 1969, p. 249). Unfortunately, most government leaders at the beginning of the 1970s did not heed these predictions.

The economic outlook of the mid 1970s began to decline significantly. Inflationary pressures from both domestic and international forces contributed to

Zambia's economic troubles. The colossal foreign debt of U.S. $7.2 million with its high interest rates exerted strain on the economy in the 1980s and the gross domestic product per capita average annual growth rate from 1960 to 1990 was -1.2 % (UNICEF, 2005). A significant result of this economic crisis was a conspicuous shift in national spending away from education to other governmental sectors. Much of the country's budget was spent on a growing bureaucracy and the military (Ishumi, 1994). Education accounted for 20 % of government expenditure, but capital costs of the school building program remained high, recurring costs of the expanded education system were massive and expenses greatly exceeded the budget. With increasing needs in other government agencies, education could not expect to maintain this generous budget item (Snelson, 1993). In fact, budgetary allocation for education dropped to 2.4 per cent of the gross domestic product in 1990 (United Nations Development Programme, 2003). This drastic budget cut resulted in an educational system unable to produce the necessary labor force with the knowledge and skills needed for effective economic development (Lungwangwa, 1999).

Another contributing factor to Zambia's economic downturn was the establishment of an upper class society. Prior to independence, the majority of wealthy people were Europeans. During the campaigns against colonial government, the people had been led to believe that self-rule would bring instant material improvements. With the example of European life-styles clearly visible,

Zambians desired and expected immediate benefits from their new independent status. Hatch (1976) states inefficient bureaucracy devoured much of government spending; from 1964 to 1968 government expenditure rose by 20 % a year with four-fifths of the 20 % spent on civil service salaries. Bureaucracy abounded and ministers and cabinet officers were needed to fill these bureaucratic roles, with their salaries comprising a disproportionate share of the nation's budget.

The Fourth National Development Plan 1989/93 stated the government attached great importance to education because it played a central role as a source of educated manpower needed in all areas. However, the educational picture in Zambia continued to be bleak and disheartening; it survived during the weak economy in the 1980s and 1990s due to reliance on the flow of aid in the form of loans, grants, and technical assistance. The World Bank and United Nations were the largest contributors of aid to education, with Belgium, Canada, Denmark, France, Ireland, Japan and the USSR being called "donors of importance" in the education field (Kelly, 1991). Most of the aid was spent on educational personnel, with 59.5 per cent of the 1985 staffing budget paid by foreign aid. During the Kaunda years foreign aid increased significantly and the debt situation became "a very powerful undertow" (Burdette, 1988, p.169).

Kaunda firmly believed that the one-party political system of Zambia ensured stability in the country and to permit other political parties would divide the people along tribal lines. However, this view was not shared by many Zambians. It was not until the late 1980s, when economic collapse seemed

inevitable and people could not see any hope of improvement as long as Kaunda and the United National Independence Party remained in power that a bold opposition emerged (Snelson, 1993). In response to mounting criticism, Kaunda agreed to end the one-party system and hold national elections at the end of 1991. He remained confident that he and his party would win when the people voted, and he was utterly shattered when Frederick Chiluba, a trade union official, was swept into power as the new president (Snelson, 1993). The new Movement for Multi-Party Democracy won an overwhelming victory in the contest for seats in the National Assembly and the United National Independence Party lost its power. "It is to Zambia's great credit that the change from a single-party government to a multi-party democracy took place in orderly fashion after an election judged by international observers to have been free and fair" (Snelson 1993, p. 324).

By the end of Kaunda's presidency, educational opportunities had declined significantly. Increased enrollments had a negative effect on teachers who dealt with very high student-teacher ratios. Teacher burn-out was high, particularly for those teachers doing double or triple class sessions per day. There were few textbooks and no teacher handbooks (Sikwibele, 1991). An analysis of government expenditure on educational materials revealed very large reductions; whereas in 1970, Kwacha 4.33 million was allocated for materials such as textbooks, paper, chalk, and teachers' guides, in 1986 the budget for these items was slashed to zero. At the secondary level, the budget decline for materials went

from Kwacha 5.4 million in 1970 to nothing in 1986 (Sikwibele, 1991). The government's solution to this problem was to increase the financial responsibility of the parents. They were now required to pay for textbooks, in addition to uniforms, transportation fees, school building fund, examination fees, and necessary boarding fees. Parental expenses per primary school pupil now surpassed allocations by the government (Sikwibele, 1991). For many children, particularly in the rural areas, primary school had become an impossible option due to increased fee expectations.

Chiluba's new government inherited the deplorable state of the prevailing educational system and needed to make significant changes. In an effort to improve educational provision, President Chiluba and his Ministry of Education organized a National Conference on Education for All in 1992, which included participants from a wide spectrum of Zambian society: politicians, academicians, teachers, church representatives, labor leaders, and donor-agency representatives. The reports from this conference prompted the government to write new proposals and strategies in a document called Focus on Learning: Strategies for the Development of School Education in Zambia (Ministry of Education, 1992).

Acknowledged as the official policy on education, Focus on Learning was committed to the provision of seven years of primary education for every child of primary school age in Zambia, with the hope that completion of these years of education would help alleviate poverty and ignorance, and would promote economic and social development (Manchishi, 2004). The principle method of

funding this objective was to increase the proportion of public funds devoted to the education sector. The Ministry of Education made it very clear that political commitment must be given to these priorities:

> But if resolute, generous and imaginative steps are not taken now to provide every child with good quality primary education, the problem will grow altogether too large to deal with in later years, given the rapid increase of the child population. Zambia's economic future will be determined in large part by the capacity of her people to acquire, adapt and advance knowledge, a capacity which depends very largely on the extent to which children attain the literacy, numeracy, communications and problem solving skills that should be promoted in primary schools. Investment in these schools provides the basis for subsequent healthy economic development. Neglect of the primary schools will condemn the country to continued developmental starvation and economic malnutrition. (Ministry of Education, 1992, p. 5)

M. J. Kelly, a prolific writer and prominent authority on education in Zambia, explained that in a situation where resources are insufficient to meet existing needs, the task must be to reduce the scale of the needs so they fit the resources. He implored educational leaders to work together to determine what could be accomplished with existing resources to bring basic education to all Zambian children (Kelly, 1991/1999). The wisdom of Kelly, an erudite professor associated with The University of Zambia for many years, was worthy of serious attention.

Four years later, in 1996, a new policy paper was issued by the Ministry of Education called Educating Our Future, which still remains the current educational policy of Zambia. This policy's objective is "…education in Zambia is intended to serve individual, social and economic well-being and to enhance

the quality of life for all. This aim will be guided by the principles of liberalization, decentralization, equality, equity, partnership, and accountability" (Ministry of Education, 1996, p. 3). This policy stresses the importance of these six principles of education to enhance the well-being of all Zambians.

The first principle is liberalization of educational provision, which entails fundamental changes in matters of power and control of schools. This new policy provides for the right of private organizations, individuals, religious bodies, and local communities to establish and control their own schools. The Ministry of Education characterizes liberalization as protecting the right of parents to send their children to educational institutions of their choice, whether they are public, private, religious or communal (Ministry of Education, 1996). It also allows for mission agencies to regain control of primary schools they had instituted and subsequently relinquished to the central government during the 1960s and 1970s (Kelly, 1999).

The second principle, decentralization, promotes "broad-based participation in the management of education with great emphasis placed on the creativity, innovation and imagination of local-level education managers" (Ministry of Education, 1996, p. 127). By involving local people in the decision making process, they would assume more responsibility for education in their area, develop a sense of local ownership and management and eliminate many bureaucratic procedures that impede efficiency. This process of decentralization is being accomplished by establishing Education Boards at local school levels,

with administrative responsibility for planning and implementing programs being transferred to these local boards, as well as legal and financial power (Manchishi, 2004).

Educating Our Future defines the related ideas of equality and equity, the third and fourth principles, as fairness and justice being available for everyone within the education system in order to enhance equity regardless of gender, physical, mental, social, or economic factors. Measures to promote equality and equity in education include allocating resources to those in greatest need, providing appropriate support systems, and the diversification of the curriculum to meet individual abilities, talents and interests of the students. Educational policies which promote a multifaceted development of people are encouraged by the government, so they can fully participate in the economic, cultural and social affairs of the society (Ministry of Education, 1996).

The current educational policy begins to encourage partnerships with various stake-holders in education, which is the fifth principle. This is viewed as a departure from the policy of the 1960s and 1970s when the government appeared to be hostile to partnerships; in this new policy, private and voluntary agencies, local communities and religious bodies are welcome to partner with the government in educational provision of both primary and secondary schools. The policy discusses grant-aided schools, which are schools outside the government system, in which the government pays salaries of teachers, gives a grant of 75 % of the capital costs of approved projects and an annual grant towards the cost of

running the schools. The grant-aided schools are almost completely autonomous, with power to establish management boards that have full responsibility for policies, staffing, admissions, and curriculum (Carmody, 2004). Several basic schools which are part of this study are grant-aided schools. Community partnership is also welcomed and encouraged; communities can participate in educational provision through construction of school buildings, management of schools, maintenance of classrooms and provision of school desks and chairs (Ministry of Education, 1996).

Accountability, the sixth principle, is briefly discussed in Educating Our Future with reference to the amount of money available for education being limited because there are many legitimate competing demands for resources in the country (Ministry of Education, 1996). The statement is made that to guarantee the best use of available resources and to allow for full public accountability, "the Government will ensure that effective systems are in place at national, provincial, district, and institutional levels for evaluating the effectiveness and efficiency with which resources are used" (Ministry of Education, 1996, p. 5).

Educating Our Future is the current educational policy of the Zambian government, and although it primarily focuses on the provision of education for children, it is also concerned about teacher training. It recognizes that the equality and effectiveness of an educational system depends on the quality of its teachers and that essential competencies required in every teacher are: 1) mastery of the material that is to be taught; and 2) skill in communicating that material to

pupils (Manchishi, 2004). The policy recommends an increase in the supply of teachers in order to provide seven years of education to all eligible children by the year 2005. Educating Our Future also proposed the establishment of a Teacher Accreditation Board but, according to Manchishi (2004), it is not yet operational.

Despite efforts to train teachers to become more effective in the classroom, drop-out rates among students remain high, especially in rural areas. In a 1999 study sponsored by the Institute of Development Studies, Sussex, England, and conducted by employees of the Ministry of Education, the main reason given for school leavers was lack of money to meet school costs. Due to the cost-sharing policy, parents must financially contribute to their children's education; however, this is impossible for many people because of unemployment and frequent drought. Distance from home to school, particularly in rural areas, was another significant reason for school leavers. Young children and girls were the most affected by long distances to schools and many dropped out soon after starting school (Kasonde-Ng'andu, Chilala, & Imutowana-Katukula, 1999). Another study using data from the Living Conditions Monitoring Survey, a nation-wide survey conducted by the Central Statistical Office, indicates 14 % of households listed their schools as 6-15 kilometers away. Each extra kilometer distance from a particular school decreased the attendance rate of children at that school by 1.5 % (Lungwangwa, 1999).

Girls are particularly vulnerable to dropping out of school. In rural Zambia, girls are expected to help with the family chores such as gathering fire

wood and carrying water several kilometers from the nearest well to their villages (Kasonde-Ng'andu et al., 1999). They are also at risk because many teenage girls become pregnant (Carmody, 2004). Interestingly, Mrs. Mwanawasa, as the current First Lady of Zambia, is becoming involved in the increasing problem of drop-out rates for girls. She founded The Maureen Mwanawasa Community Initiative, a non-governmental organization working closely with UNICEF, which emphasizes the need for the infrastructure to get water to all communities in Zambia (UNICEF, 2005, February 7). Because girls are traditionally responsible for collecting water for their villages from an area well, which is often many kilometers away, they miss the opportunity to attend school classes. In an interview in February, 2005, Mrs. Mwanawasa stressed the vital connection between water and education and asked for more donors to contribute to this worthy cause (UNICEF, 2005, February 7). This is particularly significant in light of traditional male dominance in Zambia; she is the first president's wife to become involved in social work in the country.

In addition to high drop-out rates, students in primary and secondary schools have limited materials to facilitate their learning. Conditions in schools are deplorable by Western standards. The Institute of Development Studies surveyed classroom furniture in Grade 6 classrooms throughout Zambia in 1997 (Kasonde-Ng'andu et al., 1999). The results show that only 88 % of Grade 6 children in Southern Province (where I am doing research) have sitting places and only 51 % have writing places within the classroom. Chalkboards exist in 74 %

of classrooms. Northern Province had the lowest percentages with only 67 % availability of sitting places and 32 % of writing spaces for students (Kasonde-Ng'andu et al., 1999). The Ministry of Education benchmarks for adequate student supplies in a classroom are for each student to have one notebook, one eraser and three pencils. However, another significant result from the same survey indicates that only 47% of all Zambian students have one notebook, 43% have an eraser, and 7% have three pencils (Kasonde-Ng'andu et al., 1999). The textbook-pupil ratio is well above the optimal ratio of one textbook for two pupils, with most schools experiencing a ratio of one textbook for five or six students (Seshamani, 2001). Fortunately, some of these statistics are outdated, since my recent field research revealed that all students had sitting places in the classrooms, although they were very crowded on benches connected to tables. However, textbooks are still being shared by many students, with as many as 15 students sharing one textbook in some of the classrooms.

In 2001, after he had already served two terms in office, President Chiluba requested the ruling party to change the republican constitution so he could serve a third term in office. Many Zambians protested this change and various sectors of society became concerned. The Catholic Church responded by issuing a public statement which was the first serious challenge to the proposed constitutional change and it had an enormous impact on the country (Zambia Episcopal Conference, 2001). The statement gave rise to a national mobilization against the third term and the Catholic Church was joined by the Law Association of Zambia

and the Non-Governmental Coordinating Committee to form the OASIS Forum (Komakoma, 2003). This forum mounted a nation-wide campaign that led to President Chiluba's decision to decline running for a third term. "This was a major victory to preserve Zambia's fledgling democracy" (Komakoma, 2003, p. 434).

The decision by President Chiluba to abandon the idea of a third term in office led to democratic elections and Levy Mwanawasa became the third president of Zambia. He took office in 2001 amid claims of much corruption in the previous Chiluba government. One Zambian journalist commented that Kaunda's men were pickpockets, but Chiluba's men were thieves (BBC News, 2001, December 19). Mwanawasa has also been maligned in the press for corruption and particularly for the teacher shortage crisis, which is purported to be a result of poor governmental fiscal management. In September, 2006, Mwanawasa was reelected as president of Zambia for a second term.

A key objective of the Mwanawasa government is attainment of the Millennium Development Goals in Zambia, which are part of the United Nations Millennium Declaration of 2000 (United Nations, 2005). Zambia was among many developing countries who committed to meeting the Millennium Development Goals by the year 2015. The Zambia National Submission to the Blair Commission for Africa commented that at present the achievement of reaching these goals remains a distant dream, with limited progress in some sectors and a reversal in other areas (Zambia National Submission, 2004).

Poverty and HIV/AIDS are two very significant issues with far-reaching ramifications for Zambia's ability to meet its commitment to the Millennium Development Goals.

Poverty is prevalent throughout Zambia, with 73 % of the country's estimated population of 11 million living below the poverty line (Bureau of Democracy, Human Rights, & Labor, 2004, February 25). Over the last four decades Zambia has experienced increasing poverty levels which have not declined despite the many forms of developmental assistance and the numerous financial loans the country has received. Zambia is still extremely poor and highly indebted. Between 1990 and 2000, Zambia spent almost 20 % of its Gross Domestic Product (GDP) on debt servicing, with only 2 % spent on health and 3 % on education. In 2003, Zambia spent US $113 million on external debt servicing, US $24 million on health costs and US $33 million on education (Zambia National Submission, 2004). In 2004, Zambia's debt was US $6.5 billion or $670 for each Zambian person, which was one of the highest indebted countries in the world on a per capita basis. The percentage of debt owed to the World Bank and the International Money Fund (IMF) was 57 % and an additional 25 % was owed to governments of industrialized nations like the United Kingdom, United States, Japan, and Russia (Zambia National Submission, 2004). Clearly, debt service payments diverted funds from much needed educational provision.

In 1996, the World Bank and the International Monetary Fund launched the Heavily Indebted Poor Countries Initiative to create a framework for all creditors to provide debt relief to the world's poorest and most heavily indebted countries. In December 2000, Zambia reached the "decision point", when debt relief began on an interim basis following commitment by the World Bank and IMF. There was a long list of requirements accompanying the benefits of debt reduction, which included macroeconomic and structural reforms, poverty reduction, progress in the education sector and health sector, and progress in combating HIV/AIDS (Ellyne, 2002). Although many of the requirements were difficult to attain, government leaders struggled to meet the completion point, when creditors commit irrevocably to debt relief (World Bank, 2005, April 8).

After attainment of the decision point in 2000, some progress was made in the economic area with real gross domestic product growth averaging 4.6 % a year, a turnaround from the decline in per capita income that had prevailed over the previous two decades (World Bank, 2005, April 8). In the area of education, the government abolished tuition fees in 2002 and, consequently, the number of out-of-school children was cut in half and completion numbers of Grade 7 students increased (Global Campaign for Education, 2004). However, although parents do not pay tuition fees, their financial burden was not reduced since almost all schools simply raised the Parent Teacher Association charges to cover the lost fees (Seshamani, 2001).

One of the unfortunate by-products of the debt reduction plan was a freeze on hiring teachers in Zambia's education sector. Because of the need to meet budgetary restrictions imposed by the Heavily Indebted Poor Country Initiative, a ceiling on the public sector wage bill was instituted and 9,000 badly needed teachers were not hired by the government (Global Campaign for Education, 2004). A ban on any new hiring of teachers or health workers ensued; in addition, salaries of teachers and health workers were frozen. Because of the wage cap, Zambia was unable to replace teachers lost to HIV/AIDS and some rural schools had more than 100 students per teacher (Global Campaign for Education, 2005).

Zambia's debt load, both external and internal, has many causes. The price of copper continued to fall after 1975 and eroded national income. At independence in 1964, the purchasing price of one pound of copper was $2.00, reaching a peak price of $3.20 in 1966. Prices began falling continuously in the 1980s until in 2002 it was worth only $.60 per pound (Ellyne, 2002). As the national income declined from the loss of copper sales, the government dramatically increased foreign borrowing from US $250 million in 1965 to almost US $7 billion in 2001. As foreign borrowing failed, the Zambian government created more domestic money to cover the declining national income, but this only increased prices and inflation (Ellyne, 2002). Additional events occurred which accelerated Zambia's debt load. During the 1960s through the 1990s, Zambia was home to the freedom movements of Southern Africa and was a

victim of many attacks from conflicts in Namibia, Angola, Mozambique and South Africa. Zambia also hosted refugees from Congo and Angola for many years. As a result of this role, a significant portion of the domestic budget was diverted to security and related infrastructure development, and access to vital economic transport routes and markets to the south was lost (Zambia National Submission, 2004).

In April, 2005, the World Bank and the International Monetary Fund agreed that Zambia had taken the necessary steps to reach the completion point under the Heavily Indebted Poor Countries Debt Initiative. Debt relief from all of Zambia's creditors was slated to surpass US $3.9 billion (World Bank, 2005, April 8). In September, 2005, the World Bank and the IMF made the debt reduction official (BBC News, 2005, September 26). However, some observers of the situation in Zambia think this debt reduction will not be adequate to make significant changes. "Even with full debt write off, projections show that Zambia would require additional annual resources of up to US $50 million to achieve its Millennium Development Goals" (Zambia National Submission, 2004, p. 10).

A major complication to the development of Zambia's economic, educational, and social services provision is the high percentage of Zambians with HIV/AIDS. It affects the demand for education in three ways: 1) fewer children to educate due to death from HIV/AIDS; 2) fewer children able to afford education due to increased care-taking responsibilities at home; and 3) fewer children able to complete their schooling due to lack of adequate teaching staff

(Kelly, 2000). The Ministry of Education, in discussing the attrition level of teachers, states that while 2,226 teachers are being trained each year in teacher-training colleges, 1,500 are being lost annually due to HIV/AIDS, other illnesses, and change of careers. This leaves a net number of 700 teachers, which is far lower than the required teacher supply. "Teacher attrition in Zambia's public schools is increasingly becoming a major source of concern" (Lungwangwa et al., 1999, p. 39). The Ministry report continues that those teachers who remain in the classroom are underpaid, poorly housed, demoralized, poorly deployed, provided with little support in the field and given little instructional time (Lungwangwa et al., 1999).

The most recent report by The Ministry of Education in 2000 lists problems and challenges facing the government in the area of education provision: 1) inadequate infrastructure and school places; 2) inadequate capacity with human, material and financial resources; 3) resistance to change and fear of the unknown; 4) over-cautious fear of spending financial resources; 5) lack of consensus over certain important issues resulting in delay to implement; and 6) donor dependency syndrome (Ministry of Education, 2000). These problems continue to haunt the Ministry of Education in 2006, in addition to the enormous issues of poverty and HIV/AIDS, which are widespread throughout the nation.

The above historical perspective, while somewhat complex, is vital for an adequate understanding of the current status of education in Zambia. It is impossible to understand the complexity of educational provision without the

historical background pertaining to the inadequate number of educated Zambians available to lead the country at independence in 1964, the depressed economic situation that led to increased donor dependency, and the increasing poverty and HIV/AIDS problems. Without this perspective, it is also impossible to comprehend the frustrations in the lives of Zambian basic school teachers; yet, in the midst of these overwhelming odds, they continue to teach.

Theoretical Perspective

The 1996 educational policy of the Ministry of Education devotes little space to underlying theoretical rationale for education provision. It briefly notes that since Zambia is a liberal democratic society, the state is obliged to promote educational policies which focus on nurturing the holistic development of individuals and "to promote the social and economic welfare of society through the provision and renewal of the skills, knowledge and competencies necessary for the development of society and the economy" (Ministry of Education, 1996, p. 1). Because Zambia changed from a one-party system of government to a multi-party structure and also elected a new president in 1991, underlying theories of primary education were inescapably linked to anticipated economic growth. The need to develop human resources as a base for sustained growth became paramount to government officials and educational policy was subsequently influenced by Human Capital Theory (Musonda, 1999). The Ministry of Education supports the concept of individuals investing in education as a means of increasing their earning

capacity and production in the workplace, and ultimately increasing the country's economic growth (Musonda, 1999).

Human Capital Theory is supportive of individuals who invest in education and therefore become more productive and earn higher incomes (Honig, 1993). However, some educators and economists perceive serious flaws in this theory. Honig (1993) states that the informal sector, which refers to the labor of small firms and individuals often with minimal resources, has the highest opportunities for employment, but these micro-entrepreneurs may not voluntarily invest their time in vocational training of people and may therefore need incentive programs. Furthermore, because people do not live in a perfectly competitive market, structural inequalities may exist which give unfair advantages to some and undue hardships to others within the marketplace (Baptiste, 2001). Both Honig (1993) and Baptiste (2001) discuss concerns about the linkage of Human Capital Theory to education, stating that when education is purported as the sole solution to poverty and underemployment, the reality of social injustices and unequal power structures within society are ignored. Additionally, educational practices have deep cultural roots and an understanding of those roots is essential to identifying effective educational provision.

A second underlying theory to educational provision in Zambia is Social Reconstructionism, espoused by Brameld, who believed that the goal of education is to employ schools as agents for social change (Musonda, 1999). Social Reconstructionism emphasizes addressing social questions and creating a better

society in which students learn through participation in the democratic process. Students are encouraged to discern how to make meaning of their own lives and what their lives mean in relationship to the lives of others (Martin & Van Gunten, 2002). This theory is built on the values of liberal democracy, and Musonda (1999) states the 1996 Ministry of Education's policy is largely based on this theory; education is to be guided by the principles of liberalization, decentralization, equality, equity, partnership and accountability. In 1991, when Zambia reconfigured its political system and ideology, it embraced liberal democracy and coupled social change with educational policy.

A sub-theory of Social Reconstructionism is the idea of decentralization, and some researchers believe decentralization reforms are crucial to Zambia's educational provision (Musonda, 1999; Naidoo, 2003; Sampa, 2005; Verhagen, 2002). Decentralization is viewed as a redistribution of political power, giving local communities a greater management role and voice (Naidoo, 2003). The government's plan was to create local education boards in each district which would have some control over the education in their locale; however, although it was stated that by 2001 60 % of districts would have education boards, by 2002 only two of nine provinces had been allocated education boards as part of a decentralization pilot project in existence since 1993 (Verhagen, 2002). The idea of education decentralization has not been adequately defined and implemented yet. Several researchers noted that decentralization increases the complexity of the dialog for planning between the Ministry of Education and the external agencies

and may take several years to refine (Wood et al., 2003). Naidoo (2003) points out that decentralization is likely to generate inequities and be responsible for greater disparities in the quality of services provided across different regions.

Globalization Theory is also linked to educational provision in Zambia, since many educational programs are supported by international donors. The Ministry of Education in Zambia has come face to face with the idea of increasing global connectedness as it deals with the demands of various international donor agencies. The government acknowledges that the increase in donors has brought a welcome boost to the resource flow for education and has resulted in significant improvements throughout the country (Musonda, 1999). However, the increased donor giving has its own problems: each donor has its own legitimate need for access to administrators for data requirements and assessment measures; donors often have their favorite projects and glaring needs may be overlooked; and it becomes difficult for the Ministry of Education to maintain control of the projects (Musonda, 1999). One of Stuart's interviewees remarked that the external donor consultants only said what Zambian educators had been saying all along, but people listen more to a foreigner (Stuart, 1999).

Several researchers have cautioned about linking globalization to education in developing countries without further study of various implications and possible repercussions (Evans, 1991; Tikly, 2001). In addition, there are concerns about the involvement of African nations in the ensuing globalization process and the resultant effects on their existing culture and thought patterns (Avoseh, 2001;

Oduaran, 2000). Tikly (2001) argues for the development of a conceptual framework of globalization and education in which marginalized countries in Africa are at the center rather than at the periphery of the debate. One example of the marginalization of African countries is the effect economic globalization has on education in countries like Zambia. The main response to developing countries has been to impose structural adjustment policies on the countries by the World Bank and the International Monetary Fund. These structural adjustments are intended to make countries more competitive through lowering production costs and through making African countries more attractive to foreign investors (Tikly, 2001). However, as evidenced in Zambia, structural adjustments can disrupt the growth of educational provision by necessitating a freeze on hiring teachers who are desperately needed in the schools. Thus, further study of the link between globalization and education is required to fully understand the ramifications of globalization in low income, postcolonial countries like Zambia.

Significance of the Study

What does the future hold for both rural and urban basic school teachers and students of Zambia? Many people and organizations have written about the provision of education; these sources are all in agreement that progress in education rests on two main points: 1) strong commitment to teacher training and educational provision by the Zambian government; and 2) donor help to ensure the Ministry of Education's goal of Education for All is met. With Zambia's recent attainment in 2005 of the completion point of the Heavily Indebted Poor Countries Initiative

proposed by the World Bank and International Monetary Fund, funds which previously went toward debt reduction are now available for use by the government for fighting poverty, decreasing the incidence of HIV/AIDS, and bolstering the provision of education for all children (BBC News, 2005, September 26). It is still too early to determine whether debt reduction by the World Bank and International Monetary Fund will make a substantial difference in the attainment of Education for All and the Millennium Development Goals. Zambia is already identified as one of the countries at risk of not reaching the Education for All goal (Wood et al., 2003). The dearth of educational funds has far-reaching ramifications for both teachers and students.

In addition to budgetary issues, the population of Zambia continues to grow and it is predicted that the number of school age children will be approximately 2.3 million in the year 2010, which will be an increase of 39 % over the previous ten years (Siaciwena, 2000). This increase in the number of students needing an education will exert tremendous pressure on the existing school system. Without an adequate supply of qualified and competent teachers, the Education for All agenda will be difficult to be realized (Lewin & Stuart, 2003).

With the reality of these enormous overwhelming odds in mind, this study was designed to determine whether in-service, on-site teacher training has value within rural and urban Zambian basic classrooms and whether it can increase teacher competence. As mentioned in the theoretical perspective section, teachers feel a strong need for more in-service training; they feel marginalized when such

opportunities are not available to them. Consequently, this study examined whether teachers who receive in-service, on-site training become more effective teachers and, hopefully, increase learning within the classroom.

Due to economic shortages and transportation difficulties, substantive in-service on-site seminars are practically non-existent and opportunities for educational advancement are expensive and fraught with seemingly insurmountable obstacles. The long term goal of this research is to provide a basis for grant-funded projects to work with several Zambian teachers who would routinely provide in-service training for basic school teachers on site. There is a high possibility for success of this endeavor due to two reasons: 1) teacher salaries in Zambia are low compared to Western salaries and grant-funded money could adequately compensate several teachers for a number of years; and 2) the major cost for in-service, on-site training is transportation to each school and this, too, could be sufficiently funded by a grant. With the recent increase of attention given to Sub-Saharan countries by both celebrities and educators, there is an increased likelihood of securing grant funding for in-service, on-site teacher training in Zambia.

CHAPTER 2

REVIEW OF THE LITERATURE

Zambian and Sub-Saharan Africa Literature

Research studies on in-service teacher training related to educational provision in Zambian rural and urban basic schools are very limited in number. Several research studies have been published by Zambian educators, but many of these focus on urban primary schools or secondary education in Zambia. In order to broaden knowledge about teacher training in the republic of Zambia, it was essential for me to review literature outside the scope of Zambia. Some studies read for this paper related to the larger Sub-Saharan region. They had significant relevance to teacher training in Zambia, particularly since the countries researched (Malawi, Lesotho, and Ghana) were all occupied by the British prior to their independence and are still suffering from the legacies of colonial occupation, tribal conflict, and political strife. Furthermore, they all gained their independence from the United Kingdom between 1957 and 1966 and are still in the throes of economic distress. Although their stories were not identical, there were many similarities in their educational provision and these studies shed important insights on Zambian education. For examples of similar educational experience, see Akyeampong (2001), Akyeampong, Ampian, Fletcher, Kutor, & Sokpe (2001), Kunje & Chirembo (2000), Kunje, Lewin, & Stuart (2002), and Lewin & Stuart (2003). These discussion papers were sponsored by the British Department for International Development and the research, conducted by the Centre for International Education

at the University of Sussex Institute of Education, was a collaborative effort between University of Sussex and indigenous educators.

The current literature reveals that teacher training in Zambia has suffered greatly; teacher training tutors were supposed to visit their trainees once a month, but usually no funds were available for travel or food (Kunje, Lewin, & Stuart, 2002; Lewin & Stuart, 2003). Meetings with tutors were scheduled but the schedule was never followed (Kunje & Chirembo, 2000). Often planned meetings were rescheduled at short notice or simply cancelled. Many training seminars were also cancelled due to unavailability of food and transportation funds (Kunje et al., 2002).

Shortage of teachers, especially to rural areas, remains problematic (Sampa, 2005; Wood et al., 2003). According to Verhagen (2002), the Zambian National Union of Teachers acknowledged a shortfall of 18,257 trained primary teachers in 2000. The majority of teachers in primary schools are trained; however, untrained teachers contribute 23 % of the total number of teachers with most of them concentrated in rural areas (UNESCO, 2000). Teachers are particularly needed in rural areas; rural hardship allowances are given to rural teachers, but payment is often delayed and teachers get discouraged (Subulwa, 2003; Tambulukani & Silwimba, 2004). Some teachers leave the profession altogether to find jobs with better pay (Sampa, 2005). Delays of up to a year in appointing newly qualified teachers to specific schools often force them to seek alternate employment (Verhagen, 2002; Wood et al., 2003). In addition, inadequate support from head

teachers, late payment of salaries and poor housing accommodations - which are a standard part of a teaching package in this region - discourage new teachers, especially primary teachers in rural areas (Akyeampong, 2001). Furthermore, teachers' salaries are often months in arrears (Jones, 2002). Low salaries are often below the poverty line (Sampa, 2005; Verhagen, 2002).

Lack of professional development is discouraging; teachers would like the opportunity to reflect upon and improve their performance as teachers, and to incorporate more interactive approaches to their classrooms as opposed to the lecture approach with which they feel more familiar (Verhagen, 2002). Opportunities for in-service training for teachers arise only as a means of orienting them to new syllabi or curricula, and many of these seminars are cancelled (Kunje & Chimombo, 1999). Numerous programs end at the pilot stage (Sampa, 2005). Many teachers perceive this lack of short in-service professional development opportunities as confirmation of the authorities' disregard for their needs. Not only do these circumstances demoralize teachers, but they also influence their teaching abilities. This lack of opportunity for professional development has led to a situation where teachers are reluctant to adjust their teaching methodologies to incorporate more interactive approaches and therefore rely on the "chalk and talk" approach with which they feel more comfortable (Verhagen, 2002). Several teachers interviewed by Verhagen (2002) stated they are still using methods and "schemes" they learned in college many years ago. Clearly, there is a need for in-

service training to instruct teachers in different approaches to teaching (Lewin & Stuart, 2003; Sampa, 2005).

Constraints to the completion of research in Zambia usually concern lack of monetary funds for travel and food. Donor agencies do not often experience these limitations, but national educators conducting research habitually face many obstacles. In studies reviewed by me, study trips were often cancelled because of unavailability of transportation. Public transportation was unreliable and dates of departure were often rescheduled, postponed or cancelled (Chali, 1983). In addition, research efforts in Zambia have been handicapped by the absence of information on actual pupil learning achievement resulting from lack of funds for computer technology and training (Nakacinda et al., 2001).

Students also suffer from low education budget allocation; many primary schools have insufficient desks and chairs, lack classrooms, and have few learning materials such as textbooks, teachers' guides and even blackboards (Kunje et al., 2002; (Kunje & Chirembo, 2000; Sampa, 2005). Lack of teaching resources is common and teachers need money to buy simple things like markers, paper and glue (Sampa, 2005; Tambulukani & Silwimba, 2004; Verhagen, 2002). Few textbooks are published locally and many are outdated (Stuart, 1999). In addition to textbooks always being in short supply, many of the books used in classrooms have examples drawn from "rich country" contexts and conflict with local cultural practices (Lewin & Stuart, 2003).

Western Literature Review

In addition to research on teacher training conducted by both Zambian and University of Sussex scholars, much research in this field has been conducted in the United States. Recent important reviews on teacher education from Review of Educational Research (2004), The 103rd Yearbook of the National Society for the Study of Education (2004), and Harvard Educational Review (2004) stress the importance of continued teacher training, particularly in situations where minimal formal schooling was attained. In a discussion about how teachers' knowledge matters, Darling-Hammond (2004) comments that what teachers understand about lesson content and students' learning patterns shapes how effectively they present material in class. In addition, their skill in assessing their students' progress depends on how deeply they understand learning.

> No other intervention can make the difference that a knowledgeable, skillful teacher can make in the learning process. At the same time, nothing can fully compensate for weak teaching that, despite good intentions, can result from a teacher's lack of opportunity to acquire the knowledge and skill needed to help students master the curriculum. (Darling-Hammond, 2004, p. 228)

A growing body of research confirms that teacher expertise is one of the most important factors influencing student achievement (Darling-Hammond, 2004). There is consistent support for the importance of teachers' subject matter knowledge on student performance (Palmer, Stough, Burdenski, & Gonzales, 2005). In essence, expert teaching is premised on teachers' possession of knowledge that is to be made available to students (Richardson & Roosevelt, 2004).

If teachers are not equipped with adequate knowledge and skills to teach, their students will ultimately be disadvantaged. Furthermore, researchers attest that only when teachers learn will their students learn (York-Barr & Duke, 2004). Teachers must understand how their actions and behavior affect what is going on in their students' minds; they need insight into how their teaching interacts with students' learning processes (Nuthall, 2004).

As teachers expand their knowledge base, they share their knowledge with their colleagues, both within and across schools. Circles of professionals are broadened as teachers share their knowledge with fellow teachers (Randi & Zeichner, 2004). However, research studies indicate that teaching skills will be developed only if teachers continue to learn with and from one another (Howey & Zimpher, 1999). Teacher expertise becomes more accessible when accomplished teachers encourage sharing of workable ideas and practices, mentor new teachers and collaborate with teaching colleagues (York-Barr & Duke, 2004). In other words, "teachers teach each other the practices of teaching" (Howey & Zimpher, 1999, p. 292). If beginning teachers do not experience support from colleagues through teacher collaboration and sharing of ideas, they may become discouraged and leave the teaching profession since experiences of the first years of teaching strongly determine the course of teachers' careers (van den Berg, 2002).

Methodology

Methodology used in the above studies was primarily a mixed method approach. In the study, Learning to Teach in Ghana, the researchers argued that the

socio-political views of rural African societies presented a different set of methodological challenges which required the combination of both qualitative and quantitative approaches (Akyeampong, Ampian, Fletcher, Kutor, & Sokpe, 2000). Survey instruments, interviews with primary teaching staff, observations of teacher training processes and focus group discussions with students were conducted and analyzed during the research process (Kunje et al., 2002). Due to the nature of the research questions being studied and the lack of similarity to both Western thought processes and technology, the development of relevant survey instruments became a major task of researchers (Akyeampong, 2001). After development, most of these questionnaires were pilot tested and refined prior to final administration of the surveys (Akyeampong, 2001).

Studies completed by Zambian educators also used a mixed methods approach of quantitative data analysis combined with qualitative data collection of direct observations, focus groups, diaries, group reports and interviews (Chali, 1983; Malambo, 2000; Mumba, 2000). Some of these studies were completed as requirements for graduate degrees, with several researchers attending universities abroad (Malambo, 2000).

UNESCO's approach to methodology is to concentrate on an initial group of selected countries during a four-year period and conduct a mapping of specific needs and resources in the context of each country's national education plan and poverty reduction plan. UNESCO identifies the most pressing needs and

subsequently develops intervention programs, involving country ministry officers, teacher training school heads, partner agencies, and other donors (UNESCO, 2004).

Most prior research regarding teacher behavior in classrooms in Sub-Saharan Africa revealed a lack of ability by governing educational officials to offer in-service teacher training to teachers in rural schools. As mentioned above, the primary reason for the existing dearth of professional development is financial; there simply is no available money for such endeavors. Consequently, no literature was found which documented the effectiveness of short-term in-service teacher training on-site among rural and urban basic school teachers in Zambia. Therefore, the approach of this research study was the utilization of the idea that "teachers teach each other the practices of teaching" (Howey & Zimpher, 1999, p. 292). Short-term, in-service training seminars were initiated for teachers who have very few ways of extending their knowledge and thereby increasing student learning.

CHAPTER 3

METHODS

Research Design

The research design for this study was a combination of both quantitative and qualitative research, known as a mixed methods approach. The quantitative method employed was quasi-experimental, with a pretest and posttest given to teachers at each of the six schools. The treatment was composed of seminars, lectures and discussions conducted for a period of six weeks with each teacher group. The qualitative method consisted of 36 interviews of basic school teachers, deputy heads and headmasters who were participants in this study, with six teachers per school interviewed.

In each of the six schools, a pretest was given to teachers prior to the start of the training sessions. Six training sessions were then conducted with teachers from each of the six schools, with one session per week in most of the schools. Occasionally a session had to be rescheduled due to a pre-arranged school conflict, but the majority of the sessions were held on a consecutive weekly basis. During each training session, which was usually two hours, lectures were given, discussions were led, and questions were answered concerning topics relating to the four subscales represented in the questionnaire. Diagrams and charts were drawn on the chalkboard for further clarification of ideas. Additionally, printed handouts outlining important aspects of the day's concepts were always given to each teacher during each session. For example, one of the handouts outlined Piaget's stages of

child development, and another gave specific examples of open-ended questions. Following the completion of the training sessions, a posttest was administered to all participating teachers at each school.

The addition of a qualitative method, teacher interviews, greatly enhanced the study and the resultant data are included as part of the research results. Some interview questions corresponded to the questionnaire and the in-service training and enabled me to provide additional data on the effectiveness of the training. Several queries were not directly related to the training, but had the potential to provide depth and emotional intensity to facets of teachers' roles in Zambia – such as challenges teachers in Choma District face today, changes in educational practice in recent years, and why these teachers chose their profession. All questions were asked in a prescribed order and were open-ended; additional questions were occasionally included to illuminate a particular topic. The 36 interviews were conducted, audio taped and transcribed by me following the conclusion of all the training sessions.

The initial intent of this study was to conduct a variation of the quasi-experimental pretest, posttest design known as the institutional wave design or, sometimes called, the recurrent institutional cycles design. The six basic schools were divided into two groups with three schools in each group, based on the number of teachers at each school and whether they are designated rural or urban basic schools. However, when the headmasters of each of the six basic schools were contacted regarding schedules for the teacher training sessions,

insurmountable conflicts surfaced at several of the schools. One of the three schools slated to start the training sessions in the first group had a week of "games", which translated into about one-third of the teachers being gone to another school for a week of various sports competitions. Another school was then substituted for the school which had "games", but when the day came for the first session, the headmaster had forgotten about the commitment and many of the first session teachers had already left school for the day. One session at a rural school was cancelled due to a scheduled visit from an international donor group based in Lusaka, which actually never materialized that day. Unfortunately, because phone network is not available in many rural areas, cancellation calls could not be made and the headmaster and teachers waited all day for the "visitors" who were hopefully going to donate money for additional outdoor latrines. Furthermore, because of scheduling conflicts, most schools requested the sessions be at the beginning of the week, but due to significant distances between locations of some schools, this was not feasible. Several schools also had conflicts with weeks of testing and other sports events which made six weeks of consecutive training impossible. Consequently, after much frustration with trying to maintain a schedule which would have supported an institutional wave design, the design was abandoned in favor of completing six training sessions per school in as consecutive an order as possible.

Similar problems with scheduling were evident in literature reviewed for this research. As mentioned above, planned meetings were often rescheduled at short

notice or simply cancelled (Kunje et al., 2002). Additionally, many training seminars were cancelled due to unavailability of food and transportation funds (Kunje et al., 2002). For one researcher, the changing timetables of teachers' school schedules necessitated altering original plans and actually revising the research goals (Kunje et al., 2002). Sebante & Lefoka (2001) had similar problems with scheduled appointments with schools because other activities were planned (such as "games") which could not be disrupted. These examples from recent research conducted by the University of Sussex Institute of Education in three Sub-Saharan countries (Ghana, Malawi and Lesotho) are analogous to hindrances faced by me when attempting to maintain a timetable which would have allowed for an institutional wave research design. Since many of the University of Sussex Institute of Education research instruments were primarily structured interviews and discussion groups with small sample sizes (Akyeampong, 2001), I was gratified that the in-service training seminars were conducted on a fairly consistent schedule and substantial quantitative data were obtained with a respectable sampling size of 148 participants. The six headmasters were exceptionally cooperative and continually encouraged their teachers to attend the training sessions.

Because this study was based on a pretest and posttest, the ideal t-test analysis would have been the correlated t-test, with both a pretest and posttest correlated with the same teacher participant. While an attempt was made to correlate the tests, the effort failed due to the extreme importance to some of the teachers regarding the anonymity of the tests. Although correlating the tests

probably would have been possible with the headmasters' endorsement and presence in the room, unfortunately many headmasters were unable to attend parts of the training sessions due to meetings with various parents and community leaders or meetings in Choma at the district office. Several of the headmasters missed the first training session at their schools and thus the correlated test design was abandoned. The independent samples t-test generally infers two separate groups; however, the independent samples in this study were pretests and posttests administered to the same group of teachers. Nevertheless, the utilization of the independent samples t-test analysis was applicable to this research study.

Participants

The participants in this study were basic school teachers who are currently teaching in selected schools in Choma District: Batoka Basic School, Mboole Basic School, Nahumba Basic School, Shampande Basic School, Sikalongo Basic School and St. Patrick's Basic School. Choma District is primarily a rural area with schools in both towns, identified as urban schools, and remote villages, where rural schools are accessible only by jeep or truck on dirt roads dotted with numerous potholes. It is a district with a rapidly increasing population, with 170,687 people residing there in 1990 and 204,898 residents just ten years later in 2000 (Gwillim Law, 2006). In 2002 almost half, 47 %, of the total population was under 15 years of age (United Nations Development Programme, 2003).

The teachers in the study have been teaching for various numbers of years, with some being relatively new teachers and others teaching for 15 or more years.

Several of the participants were still affiliated with teacher training colleges, completing their second year of training while teaching fulltime in the classroom. They ranged in age from 20 to 60+ years, with very few over 55 years, since that is the mandatory retirement age for teachers in Zambia. Several teachers were over 60 years of age because they were "on contract", a designation indicating they were asked to teach a class for a few additional years until someone else is hired for the position. Teachers "on contract" teach for a reduced salary and are often widows who need income to support grandchildren living with them.

Because teaching is a respected profession in Zambia, there are more male teachers in basic schools than one would typically find in elementary schools in the United States. The ratio of male to female teachers participating in this study was 108 males to 188 females. Because gender is not an important component of this study, all teachers in each of the six schools were included, regardless of gender. The total number of subjects was 148 individuals.

The education level of these teachers was more similar than anticipated prior to completing field research. The Zambian government expectation is that all primary and basic school teachers attend a two-year teacher training college prior to commencing their careers. The most recent source located which identified the average academic education of teachers in Choma District was written in 1998, which was a study published by the Ministry of Education and UNECSO and stated the average academic education for the Southern Province, where Choma District is located, is only 11.8 years (Nkamba & Kanyika, 1998). More recent information

could not be located prior to doing field research. Surprisingly, the data collected during this study revealed the majority of teachers at six selected basic schools in Choma District have graduated from a two-year teacher training college program and many are pursuing a diploma course, which requires an additional year of study, through distance learning. A total of 86 % of the participants in this study completed two years at a teacher training college, excluding teachers still enrolled at a college, but who are teaching fulltime in a classroom during their second year of the teacher training curriculum.

Teaching in Zambia can be a difficult occupation, particularly for basic school teachers. Because there is an inadequate number of classrooms available in most rural areas for primary and basic students, and because the majority of Zambian students are primary school age (Grades 1 to 7), many participants in this study were overworked in their jobs. In an effort to maximize space constraints, many schools, particularly rural schools, operate with two sessions of classes every day: a morning group and an afternoon group. There are sessions of each grade level which begin at 7:30 a.m. and end at 12:00. There is a lunch break for the teachers and the second session students arrive at 1:00 p.m. and leave at 4:30 or 5:00 p.m. Many basic school teachers are in charge of both morning and afternoon sessions of students, which is an arduous schedule. To compound their heavy teaching commitments, recent conversations with basic school teachers indicated if they teach morning and afternoon classes of the same grade level, they do not receive additional compensation. If they teach different grade levels during the morning

and afternoon sessions, for example Grade 3 in the morning and Grade 2 in the afternoon, they are supposed to receive supplemental pay; however, this does not always occur due to insufficient available funds. Classes in basic schools meet for a full day Monday through Friday.

Because there are 72 tribes in Zambia and seven major tribal languages, English is the official language of Zambia; therefore, language was not a hindrance to the implementation of this research project. The Ministry of Education has maintained English as the official language of instruction throughout all basic and secondary schools; however, teachers are encouraged to use the local language for explanations of difficult concepts with students in early primary grades (Ministry of Education, 1996). Teachers in Choma District speak English to their students most of the time; occasionally they use their native language, Chitonga, to explain complicated ideas to their students, especially in the lower primary grades. The new curriculum in use throughout Zambia is the Primary Reading Program, which has three different sections: 1) New Breakthrough To Literacy (NBTL) is used in Grade 1 with all the subjects taught in the local language; 2) Stepping In To English (SITE) is taught in Grade 2 with the majority of the curriculum taught in English, with the exception of explanations of difficult concepts given in the local language; and 3) Read On Course (ROC) which is used in Grades 3 to 7 and is supposed to be taught only in English. Thus, the students begin to read and write English in the early primary grades.

Instrumentation

Questionnaire

Research studies cited in a previous section were examined as background to the creation of a psychometric instrument to measure the effectiveness of short-term in-service interventions for rural and urban Zambian teachers. Two separate areas of research studies were surveyed. The first area was research conducted in close proximity to Zambia, assuming these studies might shed applicable insight on this project. The majority of prior studies of teacher performance in Sub-Saharan classrooms was conducted by the University of Sussex Institute of Education. The Institute created a generic questionnaire for these research projects and adapted it to each specific context (Lefoka & Sebatane, 2002). While most of the research questionnaires were pilot-tested prior to final administration, one study used a pilot-tested questionnaire with other administered questionnaires modified in the field to improve face validity (Lefoka & Sebatane, 2002). Another study was initially too broad and as it progressed the researchers became increasingly aware of the complexities of cultural factors involved in their study and focused mainly on teacher interviews (Akyeampong, 2001). One researcher wrote that the fieldwork had to be adapted to the demands of changing timetables of teachers' school schedules which necessitated altering original plans and actually revising the research goals (Kunje et al., 2002). Another group of researchers faced unexpected obstacles in the field and could not proceed with a scheduled appointment because the school had programmed other activities and did not want to be disrupted

(Sebatane & Lefoka, 2001). These examples illustrate the difficulty of conducting research in Sub-Saharan countries. Whether planned or by default, many of the University of Sussex research instruments were primarily structured interviews and discussion groups. Although the interviews provided rich qualitative data, the samples obtained were small and the results of these studies were often used as the basis for a following project (Akyeampong, 2001).

Since weaknesses were observed in primary research of Sub-Saharan African educational provision, a second area, research studies conducted in the United States, was surveyed to gain information concerning my research study. It became apparent that financial poverty so prevalent in Sub-Saharan Africa, which consequently thwarts educational research, is much less prevalent in the United States, as evidenced by the wealth of articles and books on teacher performance in the classroom. This disparity is very striking when one looks at the shelves of Western college libraries; the contrast between the library at Temple University and the University of Zambia library is overwhelming. Whereas there is an abundance of books and journals on the shelves of the Temple University library, there are very few books listed online at the University of Zambia and the majority of these books are not on the library shelves.

With the focus of a suitable psychometric instrument for this study in mind, Western sources were examined to garner appropriate information. Several studies discussed the importance of measuring teacher behavior through documented measures of student performance on standardized tests (Palmer et al., 2005;

Whitehurst, 2002). While this approach to the measurement of teacher behavior might be desirable, obtaining consent forms from parents (some of whom are illiterate) of thousands of children would be an immense challenge. This realization necessitated the use of a self-report questionnaire for basic school teachers in the study, since all the teachers would be available to sign consent forms. With the utilization of a pretest and posttest, independent samples t-tests would disclose any change in teacher behavior following teaching interventions. Accordingly, the search began for a questionnaire appropriate to the third-world setting of this project.

Several Western sources on teacher behavior in the classroom provided a background for the creation of the teacher questionnaire used in this study. Much of the research identified teacher expertise and outlined characteristics of excellent teachers in the classroom (Danielson, 1996; Danielson & McGreal, 2000; Darling-Hammond, 2000; Ellett & Teddlie, 2003; Hogan, Rabinowitz, & Craven, 2003; Nuthall, 2004; Van Note Chism, 1999). Of particular interest was a chapter in the Cornell University Teaching Evaluation Handbook which gave an extensive list of qualities of excellent teachers (Center for Learning and Teaching, 1997). These books and journals were helpful because general areas could be discerned that were germane. However, the specific questions had to be constructed by individuals knowledgeable with the Sub-Saharan context of this study.

On the basis of an inductive content analysis of Western research literature (Danielson, 1996; Danielson & McGreal, 2000; Darling-Hammond, 2000; Ellett &

Teddlie, 2003; Hogan et al., 2003; Nuthall, 2004; Van Note Chism, 1999) and Zambian research literature (Akyeampong, 2001; Akyeampong et al., 2000; Kunje & Chirembo, 2000; Manchishi, 2004; Musonda, 1999; Nkamba & Kanyika, 1998) four general categories of teacher behavior in basic school classrooms were developed: 1) teacher understanding of selected learning concepts; 2) teacher use of available resources; 3) teacher/student interaction; and 4) teaching methods and techniques.

The area of "teacher understanding of selected learning concepts" was defined as a representative, but not exhaustive, list of important concepts for basic school teachers to understand. Seminars on selected areas of conceptual knowledge, including concepts of memory enhancement, motivation, learning theories, temperament, child development stages, moral reasoning, intelligence theories, and higher-order thinking were presented to the teachers. These concepts are standard components of most Western education and psychology classes and were included in this study because of their importance for educators (Bornstein & Lamb, 1999; Byrnes, 2001; Keogh, 2003; Ormrod, 2000; Papalia, Olds, & Feldman, 2004; Reigeluth, 1999). This broad range of learning ideas was included because the majority of rural and urban teachers do not have access to adequate in-service training on key teaching concepts and theory. Learning these concepts would help teachers become better equipped to teach, since more teacher knowledge helps to distinguish an expert teacher from a novice teacher (Byrnes, 2001).

"Teacher use of available resources" was defined as exploring the impact of inviting relatives, parents, musicians, artists and grandparents to become involved in the classroom by sharing their knowledge and stories about various subjects. In addition, this area was defined as student involvement in outside-of-class projects which require no financial assistance, but do require involvement of relatives. This practice of parental and community involvement, while quite common in Western classrooms, appears to be foreign to Zambian basic teachers, as substantiated by the pilot study mentioned below. In a series of questions in the pilot study relating to the use of available resources, the majority of teachers indicated they disagreed with this practice. Because of a total absence of resources such as audio-visual presentations as well as separate music, art or physical education classes, additional input from community members could enrich classroom learning. In rural settings, community involvement is very feasible because many retired teachers, health care workers and government accountants return to their rural villages to retire and would be available to share valuable information with students.

The area of "teacher/student interaction" was operationally defined as engaging students more fully in group activities, classroom planning, and classroom discussions of current events, as well as the inclusion of humor in everyday classroom procedures. This type of engagement of teachers with students should be encouraged as evidenced in the research of characteristics of excellent teachers by Danielson (1996), Danielson & McGreal (2000), Darling-Hammond (2000), Ellett & Teddlie (2003), Hogan et al. (2003), Nuthall (2004), and Van Note Chism

(1999). Not only are these teacher/student interactions conducive to a better classroom atmosphere, but they also readily involve students in the learning process. Due to the reality of a high student to teacher ratio in Zambian classrooms, more active involvement of students in activities, discussions and planning would give greater opportunities for learning experiences and more involvement of the students with the lesson material.

"Teaching methods and techniques" was defined as the inclusion of simple visual aids, open-ended questions, numerous examples, review of previous lessons, and attention to achievement levels of students within the classroom setting. These teaching methods and techniques were also an integral part of the literature on characteristics of excellent teachers mentioned in the area of teacher/student interactions. These methods and techniques are important aspects of excellent teaching and help to maintain student involvement in the learning process. Because many teachers in Sub-Saharan studies were observed who primarily used the "chalk and talk" teaching method (Verhagen, 2002), the inclusion of these teaching methods was designed to enhance student interest in classroom subjects.

Important to this study was the operational definition of what constitutes a meaningful outcome of the in-service training seminars. A meaningful outcome was defined as the difference between teachers' answers on the pretest questionnaire and the posttest questionnaire. If there was a statistically significant increase in the number of teacher responses of "usually" on the posttest questionnaire as compared to the pretest questionnaire, the teachers learned some

new concepts and skills to implement in their classrooms. Since all the questions on the questionnaire were constructed within a positive framework, increased usage of these behaviors in the classroom indicated teacher agreement with the importance of the concept or skill.

Prior to doing field research, it appeared from the most recent literature that the majority of rural and urban teachers had not completed the requirement of two additional years of teacher training following Grade 12 graduation (Kelly, 1991/1999). However, information collected from teachers at the six schools in Choma District included in this research revealed the majority of teachers already completed the two years of required teacher training. During the fifteen years between Kelly's documented data in 1991 and this field research conducted in 2006, the majority of teachers were either more recent graduates who completed their two years of training or were teachers who were able to complete their teacher training courses.

The new teacher training curriculum, Zambia Teacher Education Course (ZATEC), instituted in 2000, stipulates that students attend college for only one year of courses with the entire second year of training being completed in a classroom. In reality, these college students are actually teaching a large class of students with very little supervision. College lecturers are supposed to observe their students at least one time per term, or three times a year, but these observations usually last only one hour followed by an hour of dialog between the lecturer and the student teacher regarding the observation times. Prior to this new

curriculum, the course of study for teachers was Zambia Basic Education Course, in which students attended a teacher training college for two years, with the second year spent both in the college classroom and in a primary school setting.

Even though most teachers with more than five years of teaching experience completed two years of teacher training college, they desired to increase their knowledge of teaching concepts and skills. Those teachers who graduated since the inception of the Zambia Teacher Education Course had only attended one year of college classes, which is a short time frame for training competent teachers. What became very evident to me was the fact that teachers sought to actively participate in a learning environment where concepts are discussed and practical applications are made to their classroom situations. Each of the schools participates in zone meetings where representatives from surrounding schools included in the zone area meet to discuss new Ministry of Education policies or to be introduced to new curriculum books. These meetings are held on an average of once or twice a year and are mainly organized to disperse new books recently acquired from the district office and to instruct the representatives on how to use the new materials. However, many of the teachers interviewed for this research mentioned the current system of dispersing information was not satisfactory because, in many cases, the representatives chosen to attend the meeting did not adequately convey the information to the rest of the teachers. Thus, these zone meetings do not seem adequate for the dissemination of teaching methodology and theoretical concepts at the basic school level. In addition, in-service, on-site

training on a regular basis is not available for teachers at the basic school level. Although new information was acquired during the current field research which clarified the current status of in-service teacher training in Choma District, the principal research question remained the same. Do in-service, on-site teacher training interventions impact the behavior of rural and urban basic school teachers in Zambia?

Pilot Study

As part of a pilot test conducted in 2005, I developed a fifty item questionnaire based on the four subscales of teacher behavior defined above, which provide the basis for the in-service interventions. These fifty questions were randomly placed in the questionnaire so there would be no obvious sequencing of questions. In addition, a four-point Likert scale with four categories - strongly agree, agree, disagree, and strongly disagree – was used.

During the summer of June, 2005, arrangements were made with teachers at two rural basic schools in Choma District to participate in a pilot study of the questionnaire. The two schools were specifically chosen because they would not be participants in the subsequent study. Although it was indicated by the headmasters of the two schools that a total of 23 teachers would be participating in the pilot study, the actual number of teachers who answered the questionnaire was 16, a smaller number than anticipated. Reasons given by the headmasters for teachers' absences were sickness, funerals of relatives and the need to go to Choma to sign for their salary checks and shop for food. In fact, one of the headmasters

introduced the teachers and immediately left on a two hour trip to visit his ailing mother. The attrition rate of the pilot study was high, largely due to the minimal advance notice given to the school headmasters of the pilot study time frame.

The results of the pilot study were entered into the SPSS data analysis program and reliability studies were computed; internal consistency was high for the answers given by the 16 participants. Reliability statistics were also determined for each of the four categories of the pilot study questionnaire: $\alpha = .737$ for teacher understanding of learning concepts; $\alpha = .791$ for teaching methods and techniques; $\alpha = .777$ for teacher/student interaction; and $\alpha = .861$ for teacher use of available resources. Since all these reliability results were in the higher range, the questionnaire was assumed to have an acceptable level of internal consistency.

The pilot study results necessitated the modification of the research instrument in several ways. Most importantly, the pilot study exposed the difficulty of the language used in the questionnaire. Educational terms common to Western ears were too difficult and held little meaning for Zambian teachers. For example, the statement "I use concrete examples" was virtually meaningless because this usage of the word concrete can be puzzling to a non-native English speaker. In addition, the 4-point Likert scale, utilizing the terms strongly agree, agree, disagree and strongly disagree as the four categories from which teachers chose their answers, created some uncertainty. It was probable these choices generated confusion to teachers using English as a second language. For example, a "strongly agree" response to an original questionnaire item "encourages intellectual

curiosity" could mean the teacher agrees with the concept behind the statement, but he/she may not necessarily use this practice within the classroom. In light of this possible confusion, the questionnaire was revised in three ways: 1) much of the language was simplified to allow non-native English speakers greater understanding of the statements; 2) vague, Western educational terminology such as "encourages problem-solving skills" and "encourages intellectual curiosity" was eliminated; and 3) the choices for the Likert scale were changed to usually, often, occasionally and rarely, with brief explanations given next to each of the four words. Consequently, when the new statement "I invite parents to the classroom to share about their careers" is read and the teacher marks "occasionally" as her/his choice, the answer has a higher chance of more accurately describing the teaching within the classroom. These changes resulted in the condensation of the questionnaire from 50 items to 36 items, with 9 questions remaining in each of the four areas mentioned above. Questions with only slightly different shades of meaning and questions which were vague and confusing were eliminated. These modifications of the questionnaire resulted in the creation of a more culturally-sensitive instrument.

Related to the generation of the questionnaire were two inadvertent minor mistakes on the first page. The questionnaire mentioned participants should put a check in the appropriate box. The language used in Zambia for a check mark is the British word "tick", which confused the teachers at the first school where the pretest was administered. In subsequent sessions, an oral correction was given.

Another more glaring, and somewhat embarrassing, mistake was the omission of enough options under the section of number of years of education completed. Because there was no option below Grade 11, at least three teachers marked their education level as Grade 12, even though it was discovered later, during personal interviews, they had only completed Grade 9 or Grade 10. The questionnaire was not intended to humiliate them, but it could have easily done so.

Interviews

This research design also included qualitative methodology. Teacher interviews were conducted to provide concurrent validity to the research and thereby strengthen the study; see appendix B for interview protocol. Research supports the idea that properly conducted interviews provide a great deal of information about teacher thinking and understanding (Akyeampong, 2001; Dunkin, 1997). They allow for a more in-depth probe of ideas which may have emerged earlier in interactions (Dunkin, 1997). Interview questions for basic school teachers were created from information on several websites of universities with strong teacher education programs (Indiana University Northwest, 2005; Lesley University, 2005; Purdue University, 2005; University of Michigan Flint, 2004). Sample questions were reviewed and appropriate ones were chosen as a basis for the interview sessions. A broad range of questions was chosen to allow for greater understanding of teacher viewpoints and the questions were worded to eliminate as much response bias as possible.

The interview questions provided internal validity for the questionnaire, with specific ones providing an opportunity for teachers to comment on ideas discussed in the in-service training interventions. For example, if the interviewee thought that asking students to complete projects outside of class encourages learning opportunities, this belief might be expressed in his/her answer to one of the interview questions. Consequently, this answer might represent concurrence between the training sessions and the interview. On the other hand, some of the questions were not directly related to the training modules but provided rich insight to teachers' thoughts, such as the question about major challenges teachers currently face in Zambia.

Subsequent to the administration of posttests at all six schools, personal interviews were conducted by me. The headmaster and head teacher at each school were interviewed, as well as two additional male teachers and two female teachers. A total of 36 interviews were audio taped and transcribed by me using a standard list of nine questions for each interviewee. Some of the questions asked were why they chose to become a teacher, what they enjoyed most and least about teaching, what kinds of teaching methods they used with their students, how their education helped prepare them for their teaching careers, changes they have seen in the teaching profession, what major challenges teachers face in Zambia today and whether they plan to teach until retirement. The interviews were conducted at the various schools during school hours, with the headmasters' permission obtained beforehand. These interactions with the teachers were extremely informative and

were used not only as a method to strengthen the study, but also as a way to clarify confusing issues and to go beyond the scope of the research questionnaire. At times digressions were made from the set pattern of interview questions and intriguing associations between seemingly unconnected ideas were discovered. The interviews provided invaluable depth, and even emotion, to the complexity of the lives of school teachers in Choma District.

A coding procedure developed by Gorden (1992) was located and three individuals, including me, independently coded the protocols, exploring possible connections between the training sessions and answers to the interview questions. The coders looked for corresponding themes between the four subscales of the questionnaires, which were representative of the training sessions, and the transcribed interviews (Bereska, 2003; Gorden, 1992). The coders were all teachers who had spent at least three months in Choma District, so were familiar with Zambian phrases and peculiar meanings of certain terms.

One inter-rater reliability method suggested by Gorden (1992) was for coders to independently highlight themes mentioned in the interviews and subsequently look at the percentage of agreement of themes between the coders. Because the purpose of the interviews was to discover possible connections between the questionnaire and the in-service training, as well as to provide greater insight to the role of Zambian teachers, many of the interview questions related to existing educational programs within the classrooms and also to current challenges faced by teachers in Choma District. Recurring themes were coded and their relationship

to questions included on the questionnaire was evaluated. For example, answers to interview questions regarding kinds of teaching methods used in the classroom and involvement of students in the lessons offered insight on whether teacher behavior in the classroom corresponded to teacher responses on the questionnaire. Additionally, interview questions concerning recent changes within the teaching professions and major challenges teachers in Choma District face today provided valuable information that went beyond the information obtained from the questionnaire responses. Thus, the interview questions were intentionally created to triangulate the quantitative study results, as well as to provide additional important themes related to educational provision.

CHAPTER 4

RESULTS

Introduction

A questionnaire comprising 36 items was administered to 148 participating basic school teachers as a pretest. Training sessions with topics related to the four subscales of the questionnaire – teacher use of available resources, teacher/student interactions, teaching methods and techniques, and teacher understanding of learning concepts - were conducted at each of the six schools. Following the training seminars, the questionnaire was administered to the teachers again as a posttest. Each of the four subscales was subsequently analyzed to determine whether there were significant changes in teacher responses. Additionally, since the questionnaire employed in this study was newly generated, reliability and validity results were analyzed and a factor analysis was examined. These results will be discussed in this chapter.

Because this study was based on a pretest and posttest, the ideal t-test analysis would have been a correlated t-test with both pretest and posttest correlated with the same teacher participant. While an attempt was made to correlate the tests, the effort failed since several of the headmasters missed the first training session at their schools. Thus, the correlated test design was abandoned. The independent samples in this study were pretests and posttests administered to the same group of teachers.

The pretest and posttest questionnaire responses were analyzed based on the four subscales of the questionnaire. Data from each subscale were analyzed separately to determine if there were significant differences in the pretest and posttest responses to the questions within each subscale.

Interviews conducted subsequent to the posttests were also analyzed. Interview themes related to the questionnaire helped to corroborate teacher behavior in the classroom. In addition, supplementary themes that surfaced during the interviews were explored, with emphasis given to current issues related to teaching in Choma district.

Quantitative Data Analysis

Independent Samples t-test

Because the study utilized both a pretest and a posttest which were given to all participating teachers, the primary data analysis used was the independent samples t-test. The results of the pretests and the posttests were entered into a statistics computer program and the means of the two groups were compared. Data from pretests were compared with data from posttests, with the resultant comparison being an indication of the extent of learning which occurred during the teacher training in-service seminars. Pretest and posttest scores from questions related to each of the four subscales – teaching methods and techniques, teacher understanding of learning concepts, teacher use of available resources, and teacher/student interaction – were analyzed. A data codebook defining the scoring of data from the questionnaire is included in Appendix C.

Table 4.1. *Descriptive Data of Subscale: Teaching Methods and Techniques*

	Group		Mean	Standard deviation	t-test	Significance
Q 1	1.00	Pre	1.58	.84	2.26	.024*
	2.00	Post	1.37	.74		
Q 6	1.00	Pre	2.02	.98	1.97	.049*
	2.00	Post	1.81	.82		
Q 8	1.00	Pre	2.44	1.16	2.74	.006*
	2.00	Post	2.09	1.03		
Q 10	1.00	Pre	1.46	.78	1.21	.225
	2.00	Post	1.36	.64		
Q 15	1.00	Pre	2.40	1.12	3.76	.000*
	2.00	Post	1.95	.93		
Q 23	1.00	Pre	1.64	.89	3.13	.002*
	2.00	Post	1.36	.64		
Q 27	1.00	Pre	1.62	.79	1.18	.238
	2.00	Post	1.51	.77		
Q 30	1.00	Pre	1.31	.67	1.74	.082
	2.00	Post	1.19	.51		
Q 33	1.00	Pre	1.75	.80	1.34	.179
	2.00	Post	1.63	.74		

* $p < .05$, two-tailed.

N = 148.

Notes:

Q 1: use many examples when teaching

Q 6: spend time with students who need extra help

Q 8: give special assignments to high achievers

Q 10: use examples to relate lessons to students' daily activities

Q 15: ask many open-ended questions

Q 23: use visual aids

Q 27: ask many questions during lessons

Q 30: review previous lesson before beginning new lesson

Q 33: give different viewpoints when teaching a lesson

Table 4.1 reveals there are significant differences relating to questions 1, 6, 8, 15, and 23 of the subscale, Teaching Methods and Techniques. Results show that the teachers who participated in the in-service teacher training use more examples when teaching, spend more time with students who need extra help, give special assignments to high achieving students, ask more open-ended questions, and use more visual aids when teaching than they did prior to their participation in the in-service training.

Analysis of Table 4.2 shows there are significant differences relating to questions 5, 14, 17, 20, 24, 26, 31, and 35 of the subscale, teacher understanding of learning concepts. Results indicate the teachers who participated in the in-service teacher training sessions recognize the importance of mnemonic strategies in the classroom, know the difference between intrinsic and extrinsic motivation, are aware of different stages of moral reasoning in children, understand how to use Schema theory in the classroom, comprehend the idea of three kinds of intelligence, can describe at least four temperament categories, can name the six levels of Bloom's Taxonomy and can explain how Vygotsky's theory of scaffolding relates

to the classroom better than they did prior to their participation in the in-service training.

Table 4.2. *Descriptive Data of Subscale: Teacher Understanding of Learning Concepts*

	Group		Mean	Standard deviation	t-test	Significance
Q 5	1.00	Pre	3.08	1.18	7.29	.000*
	2.00	Post	2.12	1.07		
Q 9	1.00	Pre	2.17	1.21	1.19	.223
	2.00	Post	1.88	2.69		
Q 14	1.00	Pre	2.29	1.26	6.72	.000*
	2.00	Post	1.46	.79		
Q 17	1.00	Pre	2.04	1.06	4.39	.000*
	2.00	Post	1.56	.79		
Q 20	1.00	Pre	2.87	1.20	8.58	.000*
	2.00	Post	1.82	.86		
Q 24	1.00	Pre	2.38	1.07	6.08	.000*
	2.00	Post	1.70	.83		
Q 26	1.00	Pre	2.75	1.07	4.83	.000*
	2.00	Post	2.16	1.01		
Q 31	1.00	Pre	2.67	1.30	5.49	.000*
	2.00	Post	1.93	1.00		
Q 35	1.00	Pre	3.29	1.02	10.87	.000*
	2.00	Post	2.05	.93		

* $p < .05$, two-tailed.

N = 148.

Notes:

Q 5: understand importance of mnemonics strategies

Q 9: can describe Piaget's stages of child development

Q 14: understand difference between intrinsic and extrinsic motivation

Q 17: aware of different stages of moral development

Q 20: understand how to use Schema theory in the classroom

Q 24: understand the idea of three kinds of intelligence

Q 26: can describe at least four temperament categories

Q 31: can name the six levels of Bloom's Taxonomy

Q 35: can explain Vygotsky's theory of scaffolding

Table 4.3 indicates there are significant differences involving questions 3, 7, 12, 16, and 25 of the subscale, teacher use of available resources. Results show the teachers who participated in the in-service teacher training invite more guest speakers to talk with their students, invite more parents to the classroom to share about their careers, invite more artists and musicians to interact with their students, give more encouragement to parents to become involved in homework projects and invite more grandparents to share events from their lifetimes than they did prior to their participation in the in-service training.

Table 4.3. *Descriptive Data of Subscale: Teacher Use of Available Resources*

	Group		Mean	Standard deviation	t-test	Significance
Q 3	1.00	Pre	3.70	.68	4.86	.000*
	2.00	Post	3.25	.88		
Q 4	1.00	Pre	2.87	.99	.57	.564
	2.00	Post	2.77	1.72		
Q 7	1.00	Pre	3.59	.86	2.74	.006*
	2.00	Post	3.30	.95		
Q 12	1.00	Pre	3.84	.57	3.92	.000*
	2.00	Post	3.52	.82		
Q 16	1.00	Pre	2.18	1.17	2.49	.013*
	2.00	Post	1.86	1.00		
Q 19	1.00	Pre	1.62	.94	-.92	.358
	2.00	Post	1.72	.94		
Q 25	1.00	Pre	3.00	1.15	2.38	.018*
	2.00	Post	2.68	1.18		
Q 29	1.00	Pre	1.97	1.14	1.65	.100
	2.00	Post	1.77	.96		
Q 34	1.00	Pre	1.58	.82	.57	.564
	2.00	Post	1.52	.78		

* $p < .05$, two-tailed.

N = 148.

Notes:

Q 3: invite guest speakers to talk with students

Q 4: ask students to do simple projects outside of class

Q 7: invite parents to classroom to share about their careers

Q 12: invite artists and musicians to talk with students

Q 16: encourage parents to become involved in homework projects

Q 19: ask students to involve relatives in homework assignments

Q 25: ask grandparents to share events from their lifetimes

Q 29: give homework projects which require no money to complete

Q 34: include examples from town or community

Table 4.4 illustrates the significant differences relating to questions 18, 21, 22 and 32 of the subscale, teacher/student interaction. Results show that teachers who participated in the in-service teacher training ask more students to help plan classroom activities, relate more lesson topics to world events, surprise their students with more funny stories and ask more students to discuss events in their lives than they did prior to their participation in the in-service training.

Table 4.4. *Descriptive Data of Subscale: Teacher/Student Interaction*

	Group		Mean	Standard deviation	t-test	Significance
Q 2	1.00	Pre	2.22	1.03	1.68	.094
	2.00	Post	2.04	.89		
Q 11	1.00	Pre	1.92	1.10	1.16	.247
	2.00	Post	1.77	1.19		
Q 13	1.00	Pre	1.68	.87	1.14	.254
	2.00	Post	1.57	.74		
Q 18	1.00	Pre	2.59	1.11	3.65	.000*
	2.00	Post	2.14	.98		
Q 21	1.00	Pre	1.66	.88	2.15	.032*
	2.00	Post	1.45	.72		
Q 22	1.00	Pre	2.06	1.02	2.82	.005*
	2.00	Post	1.75	.91		
Q 28	1.00	Pre	1.83	.91	1.03	.303
	2.00	Post	1.72	.89		
Q 32	1.00	Pre	2.11	.91	2.34	.020*
	2.00	Post	1.87	.86		
Q 36	1.00	Pre	1.63	.88	1.88	.061
	2.00	Post	1.45	.77		

* $p < .05$, two-tailed.

N = 148.

Notes:

Q 2: ask students to work in small groups

Q 11: use humor when teaching

Q 13: ask students to share their ideas during lessons

Q 18: ask students to help plan classroom activities

Q 21: relate lesson topics to world events

Q 22: surprise students with funny stories

Q 28: give time for group discussion

Q 32: ask students to discuss events that happen in their lives

Q 36: ask students to do group activities together

Each of the four tables reveal there are significant differences between teacher responses on the pretest and posttest questionnaires in at least four questions included in each of the subscales – teaching methods and techniques, teacher understanding of learning concepts, teacher use of available resources and teacher/student interaction. Interestingly, the area of teacher understanding of learning concepts had significantly different responses between the pretests and the posttests in all but one question of the subscale.

The results of the independent samples t-test provide an answer to the principal question of whether short-term, in-service teacher training interventions impact the behavior of teachers in six urban and rural basic schools in Choma District, Zambia. Do in-service teacher training seminars, discussions and lectures help teachers become more knowledgeable and therefore become better teachers? The analysis of the pretest and posttest data unequivocally support the idea that

short-term, in-service teacher training interventions do, in fact, impact the behavior of teachers in urban and rural basic schools in Zambia. The analysis also lends support to the importance of in-service teacher training seminars in facilitating the attainment of the Education for All objective and the Millennium Development Goals agenda.

Pearson Correlations

An ancillary research question was whether correlations exist between the four subscales and demographic information obtained from the teachers on the questionnaire, including years of teaching experience, years of completed education and gender. For example, how does teaching experience relate to teacher use of available resources? Does teacher training education influence the methods and techniques used by teachers? These questions were expected to give increased definition to this study, and data analysis using Pearson correlation had the potential to disclose interesting relationships. The teacher responses were coded and used in conjunction with computations of the Pearson correlation. The following table includes the areas of significance revealed when all 36 items on the questionnaire were correlated with the three demographic entries on the questionnaire – years of basic school teaching experience, years of completed education and gender.

Table 4.5. *Significant Pearson Correlations of Questionnaire Items with Demographic Information*

Question		Years Teaching	Education	Gender
Q 2	Pearson Correlation			
	Sig. (two-tailed)			
Q 5	Pearson Correlation		-.154**	
	Sig. (two-tailed)		.008	
Q 7	Pearson Correlation	-.145*		
	Sig. (two-tailed)	.012		
Q 9	Pearson Correlation	.188**		
	Sig. (two-tailed)	.001		
Q 11	Pearson Correlation			.193**
	Sig. (two-tailed)			.001
Q 14	Pearson Correlation			.148*
	Sig. (two-tailed)			.011
Q 17	Pearson Correlation			-.151**
	Sig. (two-tailed)			.009
Q 18	Pearson Correlation	-.154**		
	Sig. (two-tailed)	.008		
Q 23	Pearson Correlation			-.118*
	Sig. (two-tailed)			.042
Q 27	Pearson Correlation		-.196**	
	Sig. (two-tailed)		.001	
Q 28	Pearson Correlation			-.151**
	Sig. (two-tailed)			.009
Q 31	Pearson Correlation	.234**		
	Sig. (two-tailed)	.000		
Q 32	Pearson Correlation		-.156**	
	Sig. (two-tailed)		.007	

* Correlation is significant at .05 level, two-tailed.

** Correlation is significant at .01 level, two-tailed.

N = 296.

Notes:

Q 2: ask students to work in small groups

Q 5: understand importance of mnemonics strategies

Q 7: invite parents to classroom to share about their careers

Q 9: can describe Piaget's stages of child development

Q 11: use humor when teaching

Q 14: understand difference between intrinsic and extrinsic motivation

Q 17: aware of different stages of moral development

Q 18: ask students to help plan classroom activities

Q 23: use visual aids

Q 27: ask many questions during lessons

Q 28: give time for group discussion

Q 31: can name the six levels of Bloom's Taxonomy

Q 32: ask students to discuss events that happen in their lives

Table 4.5 reveals several significant differences exist among teachers depending on their teaching experience, education level or gender. The following differences emerged: 1) Teachers with more years of teaching experience ask students to work on assignments in small groups more often, are better able to describe Piaget's stages of child development, can more frequently name the six levels of Bloom's Taxonomy, do *not* regularly invite parents to share about their careers and do *not* normally ask students to help plan classroom activities as often as teachers with fewer years of teaching experience; 2) teachers with fewer years of formal education better understand why mnemonic strategies are important,

frequently ask more questions during a lesson and more often ask students to discuss events in their lives than teachers with more years of formal schooling; and 3) female teachers use more humor when teaching and better understand the difference between intrinsic and extrinsic motivation than male teachers, while males are more aware of different stages of moral reasoning in children, frequently surprise their students with funny stories and give more time during lessons for group discussion than female teachers. These results were the only significant correlations between demographic information obtained from the teachers and the teaching concepts woven throughout the questionnaire.

Factor Analysis

A factor analysis was conducted on the questionnaire with the results partially substantiating the four subscales. The first factor, comprising seven questions, included seven questions of the same subscale called teacher understanding of learning concepts. The second factor, consisting of six questions, represented four questions of the subscale teacher/student interactions. The third and fourth factors, made up of eight questions, together comprised six questions which are part of the subscale teacher use of available resources. The fifth factor, composed of five questions, included four questions related to teacher methods and techniques. The balance of the questions was part of a sixth and seventh component. While the results of the factor analysis were not strongly supportive of the four components of the questionnaire, they were reasonable considering the difficulty of establishing

subscales with definitive meanings of terms used within the four subscales and, in addition, accounting for diverse cross-cultural interpretations.

Validity and Reliability

Internal validity was an important facet of this research design. Perhaps the greatest threat to the internal validity of this study was the attrition rate of teachers; the likelihood of the same teachers attending each session over a period of six weeks could have been problematic, particularly since attrition was a factor during the pilot study. However, the attrition rate was very low with only three teachers in all six schools combined not completing the training program. Fortunately, this anticipated threat to the internal validity of the study did not materialize.

Reliability analyses, using Cronbach's alpha, were conducted on each of the four subscales of the questionnaire. Because of some common characteristics of several of the teaching methods and techniques items and the teacher/student interaction items on the questionnaire, Cronbach's alpha for these two subscales was not as high as desired, with the results being .662 and .666 respectively. Furthermore, results of the teacher use of available resources subscale, at .593, were not as high as anticipated. Although these statistics are indicative of some overlap of common characteristics of the subscales, they are also indicative of differing cultural perceptions held by Zambian and Western teachers. Interestingly, Cronbach's alpha for the teacher understanding of learning concepts subscale was .769, considerably higher since the nine questions included in this

subscale were more defined and had a recognizable meaning to Zambian teachers. These cultural implications will be discussed in Chapter 5.

Qualitative Data Analysis

A total of 36 interviews of basic school teachers were recorded, transcribed and coded. Upon completion of the coding, it was apparent there was strong agreement among all three coders regarding documentation of themes evident in the questionnaire. From a total of 139 instances of interview statements corresponding to questionnaire themes, 125 were marked by all three coders, which translate to a 90 % agreement rate between the coders.

The results of the interview coding indicated predominant themes mentioned by teachers in the interviews were the inclusion of group work, discussion with students, and interaction with children. Secondary themes were using examples during teaching, asking questions, and using visual aids in the classroom. Several teachers also mentioned the importance of acquiring new knowledge to enhance their teaching. Themes not directly related to the questionnaire but prominent in the interviews were lack of material and financial resources, problems with obtaining additional schooling, frustration with frequent curriculum changes, and extended time frames for postings (the term used when a teacher gets assigned to a teaching position by the Ministry of Education). Examples and analyses of these themes are included in Chapter 5. The inclusion of this qualitative method to the research study definitely created a more meaningful study, in terms of both substantiating the information shared in the training sessions and also in

disclosing additional themes which were not represented in the questionnaire responses. Additionally, the interviews incorporated intense feelings of emotion and passion to the study which were not readily attainable from the questionnaire.

CHAPTER 5

DISCUSSION

Summary and Discussion of Findings

Quantitative Data

This study was designed to explore the effects of in-service on-site training sessions on teachers at rural and urban basic schools in Choma District, Zambia. Results of the training seminars are conclusive; they did make a difference in teachers' knowledge of selected learning concepts, in their ability to interact with students, in their consideration of creative uses of available resources and in their willingness to explore various teacher methods and techniques. The 148 teachers who participated in the lectures and discussions have more knowledge and skills available for use with their students. The results of this study also have the potential to help mitigate the difficulty of attaining the Millennium Development Goals in Zambia by 2015.

Analyses of the quantitative data show there were significant differences between pretest and posttest teacher responses in each of the four subscales of the questionnaire administered to the teachers. These results will be discussed within each subscale and relevant cultural contexts will be explored. Themes found in the questionnaire are often supported by similar themes evident in the interviews. Comments and quotations from the interviews are used to reinforce key ideas presented in each of the four subscales.

Teaching Methods and Techniques

In the first subscale, teaching methods and techniques, there were significant differences in five of the nine questions as shown on Table 4.1. The most noteworthy difference was the response to the following statement: I use visual aids in my teaching. The importance of using visual aids within the classroom was both discussed and demonstrated during the training sessions. During group discussions of visual aids, many comments were made by teachers stating they understood the value of using visual aids, but did not use them due to financial constraints. Even seemingly simple aids such as handmade charts can be daunting due to the cost of poster paper, markers and crayons. Personal interviews with teachers provided deeper understanding of teachers' concerns. In discussing resources, one headmaster stated:

> Our classrooms need to be talking classrooms. As one enters our classrooms, our classrooms are to be filled up with papers, meaning that teachers need to draw, teachers need to look for a lot of relevant charts to put in their classrooms. Now the challenge is that you find that because there is a stress to make our classrooms talk, some teachers get just any chart and put it. But then you find the chart is not relevant to the level of the pupils. (Headmaster B, personal communication, August 2, 2006)

Another teacher commented that using the new reading curriculum in Grades 3 to 7 known as ROC, Read On Course, requires teachers to create their own visual aids.

> Now this course…Read on Course…is a very good course, but there's something that the government has missed. Like in NBTL we have conversation posters, you know, where you illicit a sentence for the learners for that day and sometimes even teach the phonemes for that day, but now with Grades 3 up to 7 the

> literacy which has just started, the ROC, we have no apparatus for that…conversation posters…there are no conversation posters, so it's up to the teacher to check for those. Now at this time in our schools we don't have such pictures. They were all discarded some time back. Now teaching, it becomes difficult in that way and that's the major thing with ROC…from Grade 3 to 7…that's the problem that we have in this time. (Teacher F2, personal communication, August 4, 2006)

Several lively discussions ensued in which suggestions of useful visual aids requiring no financial commitment from the teachers were offered. Evidently, since results showed a change in thought patterns in this area, some teachers benefited from this discourse and committed to using more visual aids within their classrooms.

The remaining important teacher responses in this subscale relate to the new curriculum, Zambia Teacher Education Course, written in 1997 and instituted after several years of involvement in a pilot study. This was a formal attempt by the Ministry of Education to reform both the existing basic school curriculum at the teacher training colleges as well as the classroom curriculum used by basic school teachers (Longe, 2003). This new course incorporated radical departures from the former teacher education course in several areas: 1) the learner is seen as an active learner, as opposed to a passive one; 2) the teacher is a facilitator and uses group work and team work within the class, as opposed to a "chalk and talk" lecture method; 3) learners work at their own ability, called paced learning, as opposed to content placed in rigid time frames; and 4) stakeholders (Parent

Teacher Associations and various donor agencies) have more input into the curriculum, as opposed to a closed process (Ministry of Education, 1997).

These curriculum changes were recently instituted nation-wide and some teachers are continuing to integrate these concepts into their teaching. The results of the data analysis of the first subscale, teaching methods and techniques, are representative of the variation in teaching methods employed by teachers at the present time. Results showed that using examples while teaching, giving extra help to students (called paced learning above), and asking open-ended questions were all significantly different between the pretest and posttest responses. Since teachers had some training concerning the new curriculum when it was first instituted at their schools, they were, hopefully, already incorporating these changes into their teaching prior to the in-service training sessions. Several teachers confirmed these thoughts in personal interviews. A second grade teacher who taught with both curricula commented:

> So at first the teachers used to teach. Then after teaching, the children will write whatever. Now these days, they have the children…the learners…will have to work on their own and they help each other. In those times we did not help each other. We were told to hide…not to see what your friends is happening. No groups at that time. Because of helping each other, the weak ones…the slow ones…they learn from their friends. After learning from the teacher, later they learn from their friends. (Teacher B1, personal communication, August 2, 2006)

A fifth grade teacher also mentioned the use of these techniques in the classroom:

> The system we were using somehow was not favoring the child because it was teacher centered…even the preparation was just teacher centered. You'll find that you would prepare for the whole term…this week want to do this…this week want to do this…this week want to do this…but with this new curriculum that we are using now you are driven by the bent of the learners. Faster learners, you give them what they are able to do…slower learners, you also attend to them with what they can manage to do. The other advantage is it gives the weaker learners an opportunity at least to benefit…unlike the other curriculum we were using…once you've taught, that's it… but with this one, you handle the material until you are satisfied that at least now my pupils are on board. And it also gives enough room for remedial work. (Deputy Head B, personal communication, August 2, 2006)

Some teachers mentioned using examples in their teaching, including this civics teacher who said:

> I use a variety of methods. I give lots and lots of examples. Sometimes pupils understand better themselves…the pupil who is better off in class, I can use them to explain to their friend. I use a lot of interesting ways of teaching and when I'm in class, pupils know that today's going to be a good day for us. (Deputy Head F, personal communication, August 3, 2006)

The question was explored why five pretest and posttest responses were significantly different in the area of teacher techniques and methods when basic school teachers had been using these methods in their teaching for several years and had training workshops sponsored by the Ministry of Education that explained the new curriculum. The interview comments overlapped with the questions in this subscale and provided an answer to this question. Several teachers commented about the frustration of curricula workshop training; one teacher spoke candidly about the problem:

> And you find that the people who are implementing the things that they are introducing are not the people who attend the workshops, or maybe they would send one or two people who have to come and relate to you. But if it were in a way that it were a school-based program whereby a resource person comes, you are all taught at the same time and then you are able to understand. Rather than I go, I attend the workshop. When I come back, the way I understood it, that's the way I put it across to my friends and my friends will pick it from there. (Teacher C2, personal communication, August 4, 2006)

Another teacher articulated the problem well:

> Then the other challenge we are facing is lack of adequate in-service support in new programs because you'll find that government will only train a few of which those will be expected to train others. Now in some cases you'll find that those that are trained they are unable to deliver the stuff. Once that happens then it means the system has been spoiled. (Deputy Head B, personal communication, August 2, 2006)

These quotations shed light on the question of why in-service training conducted by me made such a difference when teachers were using these methods for the past several years. Because the curriculum is still new and government training was limited to very few teachers per school, many of the teachers did not have a comprehensive understanding of these teaching techniques prior to the training seminars. Obviously, teachers benefited from the discussions and the "school-based" in-service training sessions proved to be enlightening.

Teacher Understanding of Learning Concepts

The second subscale, teacher understanding of learning concepts, showed significant differences in eight of the nine questions. The results of this subscale concur with the initial goal of this study, to allow teachers the opportunity to learn

more about selected learning concepts. The impetus for this research study was a request several years ago from a Zambian friend who asked if it would be possible to teach some educational concepts to her and her friends at the local basic school. She did not have specific requests for particular subject topics, but only wished to gain more knowledge to use in her classroom. Many of the recorded interviews lend support to the idea that Zambians teachers desire more knowledge about learning theories and concepts. Of the teachers who were interviewed, 75 % are either currently enrolled or plan to enroll in a diploma or degree program and the 25 % who are not enrolled in a program are close to retirement age.

Teachers are motivated to pursue higher educational degrees for several reasons. One reason, of course, is the hope of increased income, with the salary scale for all teachers supposedly based on additional education, or "upgrades". However, the pay increase does not always materialize after further education is completed. When asked if there are differences in teachers' salaries depending on years of teaching experience, one deputy head replied:

> There is supposed to be. But it's not always there. And this is one of the issues that our unions have discussing with the government. There's a system which they call the notch system. At your entry you're paid so much. And every year you're supposed to have an increase. And automatically it should increase…you don't have to negotiate that. It's supposed to be an automatic increment. So that the one who starts today will not have exactly the same salary as the one who started five/ten years ago, even if you have the same qualification. So you get something for the experience. But it hasn't been effective. Most teachers notice that from their paychecks they are not getting their yearly notches. And so you find a teacher who has been teaching for fifteen years sometimes will have even a lower

> salary than the one who started this year. We have had such situations. (Deputy Head A, personal communication, August 1, 2006)

Further clarification came from another teacher:

> The truth is the one who is starting now and the one who has taught for 33 years…we have the same salary. So there's nothing like saying this one has started this year so the salary should be higher. We are all at the same rate, provided you are a teacher… and the problem is they are not looking at the qualifications of somebody, even if one has gone for a degree…for a diploma… the salary will be the same with the one who has just started. That is a big problem. I don't know why the government cannot revise on that one. (Teacher F2, personal interview, August 4, 2006)

Concurrence regarding widespread discrepancies within the salary scale was supported in comments by a third teacher:

> When you are posted (receive a teaching assignment from the Ministry of Education) you'll be teaching and you are considered to be on probation. Then you are put on a certain scale. After probation period, when you are confirmed, then you'll be put on another scale. Now that is where…not matter how long you'll be teaching, if you are not promoted, then you will be on the same salary. It (probation) is supposed to be six months…yes…but the problem is that we have teachers who have been teaching maybe for 12 years and they are still on probation. They have not been promoted…just because it has not happened…just because maybe there are maybe mistakes in the offices somewhere. It takes time for someone to be put on another scale after he or she has upgraded. (Teacher E4, personal communication, July 31, 2006)

Despite these inherent discrepancies, teachers continue to apply for entrance to diploma and degree programs. Whereas in the United States some teachers obtain master's degrees solely for a pay raise, Zambians have no

assurance of an increase in pay after they complete their schooling, and yet they pursue advanced degrees.

A second reason teachers pursue more schooling is because by the year 2015 the Ministry of Education is requiring all teachers to have completed a diploma program. Currently, primary teachers can teach with only a primary certificate, which is a two year association with a teacher training college; students are in the college classroom for the first year and are teaching in a regular classroom during the second year. "The government is trying to do away with primary certificates so all the teachers now are required to be diploma holders. So by 2015 it is said that all teachers must be diploma holders…no primary certificate" (Headmaster E, personal communication, July 31, 2006). Although teachers are not convinced this regulation will be enforced, they are attempting to complete their diploma programs prior to 2015 so they can retain their jobs.

Teachers also pursue more education because they are respected in Zambia and to be an excellent teacher implies being competent. When asked if she will continue to teach until retirement, one teacher replied, "Ah, I will because I've seen that it's a noble job" (Teacher D4, personal communication, August 3, 2006). The majority of participants in this study plans to continue teaching until retirement, and therefore expressed interest in new learning concepts which would enhance their classroom environments. The results of the subscale, teacher understanding of learning concepts, reiterate the aspirations of teachers to become more knowledgeable of learning concepts; it was the subscale with the highest

number of significant differences between teachers at the pretest and posttest stages. Both the t-test results of this subscale and the interviews demonstrate that teachers benefit from in-service training sessions.

Teacher Use of Available Resources

The third subscale, teacher use of available resources, was included in the questionnaire because of the high student to teacher ratio in the classrooms. The intent was to foster discussions of how teachers could use outside resources to alleviate strain from the extremely high student/teacher ratio in most classrooms. The majority of class sizes exceed 40 students and many have 55 students to one teacher. One teacher has 40 students in Grade 1 (Teacher D3, personal communication, August 3, 2006) and a Grade 6 teacher has 63 students (Teacher D1, personal communication, August 3, 2006). Another teacher taught Grade 2 for the previous five years and had 100 pupils in two sessions, a morning and an afternoon session (Deputy Head B, personal communication, August 2, 2006) and a Grade 8 geography class has 54 students (Teacher E4, personal communication, July 31, 2006). As evidenced in interviews with teachers, the high student to teacher ratio in Choma District is a common occurrence.

To ease the strain on teachers, suggestions were made during the in-service training sessions regarding capitalizing on the wisdom of retired people, including teachers, accountants, musicians, electricians, carpenters and health workers, who usually return to their birthplace at retirement. I proposed that inviting guests, including parents and grandparents, to speak to students would broaden the

students' knowledge in these areas and would provide diversity in the classroom. Initially, discussion participants were neutral because teachers saw both sides of the issue; benefits to the students were evident, as were explanations why this idea would not be feasible in Zambia. Two key reasons were given: 1) Rural farmers and townspeople feel that teachers are paid well enough and should do their jobs by themselves without outside help from others; and 2) if an outside person does agree to share in a classroom, he/she would expect to be financially compensated and that would not be possible for the teacher or the school to accommodate. Again, lively discussions ensued about the probability of finding retired people who would be agreeable to share their knowledge with children and not be concerned about financial compensation. The discussion ended with a consensus among many of the teachers that the merits of using available resources within the local community outweighed the difficulties of implementation.

Interestingly, following initial uncertainty resulting from cultural expectations of teachers having sole responsibility within the classroom and obligations to financially reimburse visitors, the data analysis of several questions in this subscale which relate to inviting outside people to share with students revealed that teachers were very thoughtful regarding this concept and had already made changes in their teaching behavior. One teacher commented in the interview with her that she "…would call someone who has got an experience in that topic" (Teacher A3, personal communication, August 1, 2006). This concept also related to an interview with a headmaster, who noted one of the qualities of

an excellent teacher is "one who is willing to consult with others" (Headmaster C, personal communication, August 4, 2006). The idea was further underscored in the answer to an interview question regarding how new things are learned by teachers and the reply was "…sometimes when I have a difficult topic, you ask your other teacher to help you. Maybe he comes in class, he explains to pupils…as he's explaining, I also learn" (Teacher D1, personal communication, August 3, 2006).

One aspect of the subscale, teacher use of available resources, was not assimilated into teachers' thought patterns. Three questions in this section involved the assignment of homework projects to students. None of these questions demonstrated significant differences between the pretest and posttest answers. In discussions with teachers during the training sessions, it became apparent that few teachers assign homework projects due to limited classroom space to display them, limited resources of the students and the difficulty of students walking through fields carrying a project to school, since over 27 % of students in Southern Province walk at least 45 minutes to the nearest basic school (Ministry of Education Central Statistical Office, 2003). One rural school teacher tried to incorporate a project involving newspaper articles for an English class and found it too difficult because newspapers were not accessible in their homes:

> …it was in English (class). I told them to go and collect articles…article newspapers. Now, looking at the environment, only those who come from the high school…they are children of teachers…maybe few…two or three brought them. The other ones from the villages, they can't bring it, so some subjects

> are…they let me down because of the environment and sometimes you may not even want to teach them…just when you look at the environment, the things you are supposed to teach them may be too advanced for them to understand unless they see them with their own eyes. They will not understand even if you try to teach them, so they may be let down and you just become sad because you cannot teach them. (Teacher E3, personal communication, July 31, 2006)

Even a homework project involving a simple thing like a newspaper was not possible to accomplish. I was actually pleased that the teachers were sensitive to the students' feelings and did not want to highlight the diverse socio-economic levels of the children. Homework projects might be better-suited for urban school students.

Teacher/Student Interactions

Teacher/student interactions, the fourth subscale of the questionnaire, showed significant differences in four responses. Perhaps it is more interesting to examine the responses that were not significant, because they are embedded within a cultural context. Four of the five insignificant responses relate to students working in groups and students sharing ideas with others during lessons. Zambia Teacher Education Course emphasizes group activities and teamwork (Ministry of Education, 2000) and most of the teachers mentioned these concepts both during discussions in the training seminars and in the personal interviews. These ideas were not new and therefore their pretest and posttest responses were more similar. An example of the meaning of working in groups to teachers in this setting is:

> It's the learner-centered type of approach…that is whereby the learners…the class is divided into four groups…yes…and each group is given its own task according to…in fact those groups they are pace groupings. Each group is given the work which is suitable for it. (Teacher B2, personal communication, August 2, 2006)

One teacher expresses his/her opinion of working in groups:

> We use group method…child-centered…whereby they are given a task then they work in their various groups. Then as a teacher you maybe make final explanations on what they do by themselves. Generally the pupils must do more work and the teacher just control and guide. (Teacher F4, personal communication, August 3, 2006)

A Grade 4 teacher enjoys using group work in his/her class and thinks it is very effective:

> Most of the time I like using child-centeredness. I enjoy that one because if I teach throughout as a teacher they'll not get anything, so if I put them in groups and instruct them what to do they'll be able to interact on their own, because sometimes we take these little ones for granted to think that they don't know anything, but at the end of the day give them work in their groups…on their own they'll do wonders. Sometimes you even want to say I thought they'll not do anything but try them and see what they do. They enjoy it very much…so I like the child-centeredness … though sometimes I explain to them as a teacher but most of the time I like to do them in groups…yes. I enjoy that one. (Teacher F2, personal communication, August 4, 2006)

There were many similar examples which illustrate that group work to a Zambian teacher in Choma District implies smaller group work, and not a discussion with the entire class involved. This approach seems appropriate, considering the high student to teacher ratio. It would be very difficult for even an expert teacher to keep 63 students engaged in a lively group discussion.

Two questions in this subscale are both related and have significant responses; they are questions which encourage teachers and students to place events within a broader context. In the training sessions there was a brief dialog about how contexts shape our thinking and evidently this discussion caused some teachers to further contemplate the idea. It is difficult, however, to put events within a world context when one does not own a radio or television and does not have enough money to buy a newspaper in town.

The one item which is puzzling is the statement regarding using humor when teaching a lesson. This question did not demonstrate a difference, in contrast to a related question about surprising students with funny stories. Perhaps there is a subtle cultural distinction between the words "funny" and "humor" which is not apparent to me.

Pearson Correlation Results

Pearson correlation results were not as strong as expected. The correlations appeared to be somewhat random and only one pattern was observed. Teachers who have more years of teaching experience are better able to describe Piaget's stages of child development and can more frequently name the six levels of Bloom's Taxonomy. These two learning concepts have been a standard part of teacher training curricula for years; therefore the older teachers are more familiar with them. The balance of the learning concepts included in the questionnaire was less familiar to these older teachers. Responses to questions about concepts of intrinsic and extrinsic motivation, moral reasoning, scaffolding, temperament

categories, Schema theory and mnemonic strategies did not show any pretest-posttest differences. Several additional correlations were indicated, but there were no recognizable patterns between the questions and demographic factors obtained from the questionnaire.

Qualitative Data

Results of interviews with headmasters, deputy heads and teachers, offered a wealth of knowledge and a level of depth which strengthened and reinforced the quantitative data. The analysis of the interviews showed many teachers related thoughts and information previously discussed within the in-service training context. However, what the interview coding did not disclose was the wealth of supplemental information vital to this study which was not reflective of the training sessions. Additional questions were asked in the interviews for the sole purpose of providing clarification to and expansion of educational provision in Zambia. The information gleaned from these interviews is discussed below.

Excessive Delay in Teacher Postings

One recurring theme in the interviews was the extended length of time for graduates of teacher training colleges to get posted, which means to be assigned to a school by the Ministry of Education. It is a well-documented fact that classes are crowded and student/teacher ratios are very high. In spite of these glaring needs, teachers usually wait two or three years until they are posted because there are insufficient funds in the education budget to hire the necessary number of teachers each year. One deputy head commented on this situation:

> When I was completing my training I got employed before my results were out. So by the time my results were out…by the time I got my diploma…I was already employed and teaching. But of late, the system has changed…two years, three years. Some have waited for three years. (Deputy Head A, personal communication, August 1, 2006)

Despite the fact Zambia reached the completion point and its debt was forgiven by the IMF and the World Bank in 2005, which facilitated the removal of the hiring freeze on teachers, one headmaster has still not seen a change in posting time:

> It's getting worse and definitely impacting negatively on the teacher that comes because by the time he has come out to actually start work he has been off the line of teaching for three or four years… all the methods are forgotten. He's just as good as somebody that would have come from the street. That's how I look at it myself. When they're in college, they have a chance to maybe plan lessons for a short time, then they go away for a period of four years without ever writing a lesson plan. When they come back even the books that they were learning to use are no longer the ones that they use…these new books…so this teacher just comes as a new person. That's why they are finding it difficult to teach and they *are* finding it difficult to teach. (Headmaster D, personal communication, August 3, 2006)

One Grade 6 teacher commented, "I completed in 2002 and I started in 2005." (Teacher D1, personal communication, August 3, 2006). In spite of the desperate need for teachers to reduce student to teacher ratios in both rural and urban schools, a solution seems unattainable without the unwavering commitment of the Ministry of Education.

Frequency of Curriculum Changes

A second frequently mentioned theme in the interviews was anxiety regarding the number of curriculum changes in the country within a short time frame. Several teachers stated that changes happened too quickly without a suitable evaluation process. This has discouraged teachers, who feel governmental education leaders are not receptive to sound educational policies. Although most teachers agreed the current Zambia Teacher Education Course curriculum is adequate, many were dismayed at the rapid rate of changes during the past several years:

> …generally the ministry is always, every few years, it brings a pilot project, so those pilot programs are, to me, they are too much. Maybe if one could be done and then you see what kind of results can be produced for the country, maybe after ten years, that's when you can bring something else. I would really appreciate that, but the way they have been coming, every five years we see another program coming and to me that is not so good. Even if you are trying to get the best… but it is better you see what the results will come from maybe the initial program introduced and thereafter that's when you can think of improving it or maybe discarding it if it's not performing to expectation. (Teacher D2, personal communication, August 3, 2006)

One deputy head observed, "You'll find that there are times when we get a bit disturbed. Which is the best? Why did we move from here to there and so on" (Deputy Head D, personal communication, August 3, 2006). The following remark was made by an intelligent, and frustrated, teacher in response to a query about government's initiation of evaluation processes: "If they (the government) are making the evaluation, they can, but the evaluation has to be made in

consultation with the teachers…how they are finding it. By themselves to evaluate, they don't know about the classroom" (Teacher E2, personal communication, July 31, 2006).

One teacher feels these frequent changes have diminished teachers' commitment to their jobs:

> Teachers are not as committed as before. Teacher commitment has gone down and basically even in the government…you know this time they are introducing this kind of teaching method, the next minute they tell you don't do this. They introduce something new. Next time again they introduce something new, you know, and you never get to really learn those things. (Teacher C2, personal communication, August 4, 2006)

The theme of excessive changes is a recurring one in the interviews, with teachers implying they are losing confidence in the government's ability to provide adequate educational provision for the country.

Lack of Material and Infrastructure Resources

One of the concluding questions in the interviews was about challenges teachers face in Choma District today. Responses to this question were overwhelmingly similar; all but one teacher mentioned that low salaries and lack of resources, e.g., student textbooks, teacher textbooks, desks, laboratory chemicals, furniture, overhead projectors, classrooms and computers, are colossal challenges with no solutions in sight. One of the most poignant statements was made by a veteran teacher with over 15 years experience:

> The major challenges, as I said, we are a developing country. You'll find that one is unlike the stories we hear in other countries where the population is controlled maybe family by family. Here,

> if you happen to go in the classroom, you'll find 50, 60. How does one teacher control all these? The methodology of seeing one to one…it can't work, there are so many. You give five questions, the period is 40 minutes, you are here maybe 1, 2, 3, 4 the period ends. Okay, okay, let's go to another period. You have not attended to others, so in short, you'll find the challenges is the population of an age of a child to be in school is becoming more than the infrastructure itself. Desks are a problem. Accommodations itself, rooms and so on, there are very few. Meanwhile, we need these pupils and teachers because by 2015 each child should have a basic education, but from which angle? We cannot push them away… we need these to be in school. So the next thing is over-enrolling. So the challenges will put a lot of pupils against very few teachers. Why very few teachers? The government is not able to employ everyone, because there are some where you find maybe they are two years after completing they are not yet in employment. (Deputy Head D, personal communication, August 3, 2006)

The need for resources of all kinds – human resources, financial resources, material resources – is overwhelming. When asked about a solution to these extreme problems, teachers' answers always focused on the urgent need for the involvement of the government. One headmaster with many years of teaching and administrative experience made this emotionally-charged statement, "I feel if they (the government) are putting effort, it's not enough…it's not enough, honestly, it's not enough. They could do better, they could do better" (Headmaster D, personal communication, August 3, 2006).

Difficulties of Distance Learning for Diploma and Degree Programs

An extremely critical theme for teacher training which kept reappearing throughout the interviews was the problem of financing continuing education through distance learning. Many teachers are enrolled in distance learning

programs to obtain their diplomas or degrees; the number of teachers enrolled in a distance learning program during 2003 was 4500 throughout Zambia. The National In-Service Teachers' College, one of the largest distance learning colleges in Zambia, can only accommodate 500 teachers per year (Longe, 2003). The University of Zambia accepted only 360 students out of 2580 distance learner applications in 2003 (Chishimba, 2002). Although it is difficult to gain admission in one of the distance learning colleges, several of the teachers interviewed were already admitted, but were frustrated with the prospect of not being able to afford the payments. If a teacher is accepted into a degree program, he/she can take two years of distance learning courses while they continue to teach, but must follow them with two years of residential learning at the college or university site. If they resign their current teaching posts to attend school, they will not be reinstated upon completion of the course and will be required to wait several years for a new posting. One teacher discussed the problem of going for further studies:

> Some conditions are not favorable for teachers. You see if you want to go for further studies you are told you resign first…or you have to sponsor yourself. Now where do you get that money? You resign and again you sponsor yourself to that school. Those are some of the challenges we are facing as teachers. (Teacher B2, personal communication, August 2, 2006)

A deputy head who desires to attend a university stated:

> I would like to maybe go to university. Except that maybe now again, you see, that's another challenge because things are not very easy now. Why? It's because the policy now is that in our districts the district can only sponsor four teachers per year in all the Choma district. And we are 1000 plus teachers! Now if I wait until my turn comes, who knows? By that time I will be too old…I will

> approach retirement. And then if I tell the government…okay, fine, I want to sponsor myself so that I can do it quickly in my own time… the government will say….now therein we are going to move you out of the payroll. Now if I don't get my salary how do I support myself? And yet it was going to be easier for me if I supported myself because then the government would spend little or nothing on me. But again if I am told they withdraw the salary from me, how do I make ends meet? How do I pay for my school? So much as I would want to go for further studies as quickly as possible, that becomes a bottleneck. (Deputy Head C, personal communication, August 4, 2006)

The following interview quotation was stated by a teacher who is already enrolled in a degree program at The University of Zambia, which will eventually require him to become a fulltime student for two years. He commented:

> It's supposed to take five years. Otherwise the first three years I'm suppose to do it on distance and then for the last two years I'm supposed to go for full time. Yeah, now that's where the confrontation is in the Ministry of Education. They're saying, you know you should go for full time, you should be having to go for full time. Then we are scrapped off the pay list, the pay roll. It's like you go on unpaid leave. When you are off the pay sheet you sponsor yourself. When you come back you have to re-apply to be a teacher under the Ministry of Education. So it's quite confusing. So we are trying to maybe talk to the management, saying, why can't we finish on distance? Because if I have to stop work today, where do I get the money to sponsor myself? Otherwise I'm willing to sacrifice the little that I have on distance. Like this year we are supposed to pay 1.6 million towards the tutorial…1,600,000 kwacha ($ 440.) just for tutorials! And maybe the examination. The rest…I have to cook for myself when I'm there, to buy my own food and materials, study books and stuff. So it's quite expensive. They are saying for the last two years I ought to go there so that I complete my course. But that is much more expensive to go on full time because it's seven million, eight million, somewhere there, per semester, which is quite expensive. (Teacher A1, personal communication, August 1, 2006)

This level of frustration is pervasive among teachers industrious enough to desire a higher educational degree. This same teacher continued, "They are saying we need to improve the quality of teachers. That's what we are trying to do. I'm striving on my own but the government doesn't want to come in and help me out. So I don't know."

Another teacher who already completed his diploma and is hoping to begin a degree program commented, "But the way it is in Zambia here, when you want to get training, you have to, maybe…you are asked to go on an unpaid study leave, so that is a discouragement. You'll find it greatly demoralizes the teachers" (Teacher D2, personal communication, August 3, 2006). The problem is exacerbated because there are no government educational loans available for teachers and the prospect of waiting for a new posting after completing a degree program is extremely disheartening.

The obstacles teachers face in their careers are monumental. Common themes throughout the interviews revealed their frustrations with their jobs, but yet they are committed to teaching the children in their classrooms. All but two of the 36 teachers interviewed said they plan to be teachers or administrators until retirement.

Contributions to the Literature by this Study

During the last decade, the University of Sussex Institute of Education has sponsored considerable research concerning educational provision in Sub-Saharan Africa. The Institute of Education subsidized numerous research projects in the

countries of Ghana, Malawi and Lesotho. Studies conducted by Akyeampong (2001) regarding teacher training in Ghana, Kunje and Chimombo (2002) relating to education in Malawi, and Lefoka and Sebatane (2002) concerning teacher education in Lesotho were all sponsored by this institute. Knowing that children learn more if they are taught by competent teachers, these studies provide enlightening observations and applications concerning teacher training in Sub-Saharan Africa. Interestingly, the country of Zambia has not been prominent in any study sponsored by the University of Sussex Institute of Education, even though the three countries mentioned above are in close proximity to Zambia. In reading the studies conducted by these researchers, it is obvious there are major differences in the educational policies among the countries of Malawi, Ghana and Lesotho, as well as important similarities. In most Sub-Saharan countries, poverty and HIV/AIDS are major crises which compromise educational provision for school-age children. As the literature review demonstrates, these problems encumber Zambia, as well. Although similarities among all Sub-Saharan countries exist, Zambia has its own distinctive educational policies and the assumption cannot be made that study results from Ghana, Malawi and Lesotho are compatible with educational concerns in Zambia.

Several African scholars have published journal articles relating to educational provision in Zambia. Lungwangwa (1999), Malambo (2000), Manchishi (2004), Musonda (1999), and Tambulukani & Silwimba (2004) have

all written about some aspect of Zambian education, with several of the articles relating specifically to some aspect of teacher education in Zambia.

Organizations such as United Nations Educational Scientific and Cultural Organization (UNESCO), Association for the Development of Education in Africa (ADEA), Blair Commission for Africa (CfA) and Southern African Regional Poverty Network (SARPN) commissioned reports concerning education in Zambia. Because these organizations usually include many, if not all, countries in Sub-Saharan Africa, they are not country-specific, but deal with general themes which emcompass the area. These reports include topics about dealing with the HIV/AIDS pandemic, implementing educational decentralization, poverty, taking action for a prosperous Africa and teacher education in Sub-Saharan Africa.

While reviewing the literature related to teacher training among basic school teachers in Zambia, it became apparent that no research has been published that addresses a potential solution to some aspects of teacher training. Many publications are available recounting the history of educational provision in this country, and names such as Michael Kelly and Brandon Carmody are linked to this commentary. Both these men have been associated with the University of Zambia for many years and bring a remarkable breadth of knowledge to the area of education in Zambia. Both Kelly (1999) and Carmody (2004) are authors of books narrating the development of education in Zambia, which were vital for both historic and present-day perspectives of this research study. In addition, journal articles by Manchishi (2004), Musonda (1999) and Lungwangwa (1999)

provide insight to the issues of educational provision from Zambian educators' perspectives. However, books or articles concerning the use of in-service, on-site teacher training sessions were not accessible.

This research contributes to the literature in three ways. First, it utilizes quantitative data to document the effectiveness of short-term teacher training seminars in basic schools in Zambia. Questionnaires were administered to all teachers in the study and pretest and posttest results were analyzed to establish the usefulness of the training sessions. Second, it supports the provision of these training sessions on-site at the schools' locations. There are many documented studies of specific areas of Zambian education examined by scholars, for example gender (Kasonde-Ng'andu et al., 1999), school attendance (Lungwangwa, 1999), HIV/AIDS awareness in basic schools(Malambo, 2000), multi-grade experience in the classroom (Tambulukani & Silwimba, 2004), teacher deployment and placement (Subulwa, 2003) and information management systems within the schools (Makwati, Malyenkuku, & Wako, 2004). There is no research on teacher training sessions conducted on school sites which, like the results of this study, appear to be a successful approach. Third, it is unique in utilizing both quantitative (teacher-response questionnaires) and qualitative (teacher interviews) methodology to investigate the provision of a readily replicated teacher-training methodology in basic schools in Zambia. Thus, this research clearly provides a contribution to the literature concerning teacher training in Zambia. It is my hope that this research will help educators examine the merits of in-service, on-site

training for teachers. It is anticipated that the provision of such training will enhance teachers' knowledge of applicable learning theories and teaching methods within the classroom.

Delimitations and Limitations of the Study

External validity of this research was intentionally restricted since the sample population was limited by design. Because rural and urban basic school teachers in Choma District, Zambia, were the subjects in of this study, generalizability can be extended to teachers in basic schools in most other rural and urban areas in Zambia, and possibly to other Sub-Saharan countries with similar educational policies. However, generalizability may be limited to those countries with similar educational policies and economic status as is currently experienced in Zambia. In addition, generalizability of the study may be limited by measurement restrictions, since self-report questionnaires often reflect reporting bias and do not always give an accurate picture of the true outcome of the treatment.

Several limitations of this research were immediately obvious, and more appeared as the study progressed. The most apparent limitation was the inability to guarantee the administration of a culturally-sensitive questionnaire to the participants. Although much effort was taken to construct the questionnaire with as much sensitivity and relevance to Zambian culture and thought process as possible, there was still the possibility that some questions could be misinterpreted by the participants. It appears that two issues were working together to produce a degree of unreliability: 1) the subscales contained several questions which could be

perceived as part of two different subscales; and 2) certain concepts on the questionnaire had differing linguistic meaning between Zambian and Western teachers. For example, the use of the word "group" has a specific connotation among Zambian teachers. The new curriculum, Zambia Teacher Education Course, requires each teacher in Grades 1 to 7 to divide his/her class into four groups of students, which are called "pace groups". The groups function quite differently than the type of group discussion implied by the questionnaire statement "I give time during a lesson for group discussion". In a typical primary school classroom in Zambia, group discussion often involves students talking about a learning concept within their "pace group" with little teacher input and direction given to the discussion topic, whereas the image of a lively discussion with students and teacher actively engaged in the subject matter is a Western concept. Another example of differing thought patterns is the questionnaire statement relating lesson topics to events that are happening in the world. Western educational process regarding world events involves information gained from television, radio, internet and newspapers. These information sources have an extremely limited audience in Zambia, particularly in the rural areas; therefore, the Zambian understanding of world events might be quite different from that of Western teachers' perceptions of events happening in the world.

A potential limitation of this research was the issue of social desirability; surprisingly, this did not appear to be a major concern, since it was stressed that the questionnaires were anonymous and the teachers were relieved when they

understood it was impossible for their answers to be traced to them. From the results, it does appear that honest answers were given. For example, even though the merits of inviting outside speakers to the classroom were recognized by teachers in the training sessions, they were not convinced it would be possible for them to accomplish this goal. In spite of initial agreement with the idea, some culturally-valid hindrances to the implementation of this idea were posited by the teachers and the posttest indicated they probably would not try it in their classrooms. This example is one indication that their social desirability was not as strong as expected.

The amount of time available for conducting the in-service training was a limiting factor in this study. Although the headmasters at each of the schools desired to extend the time for the training sessions, this was not possible because there were no teachers available to referee the children on the playground. At two of the schools, the headmasters and the deputy head teachers took turns sitting on the porch outside the classrooms, monitoring the actions of the children. At most of the other schools, all the teachers were in the training sessions and the supervision was done by some ninth grade students. Occasionally a student would politely knock on the classroom door and ask to speak to the headmaster, who would quietly exit the room and proceed to discipline some students. Since there were no funds available for hiring people to supervise the play areas, extending the training time from one-and-a-half or two hours to a longer period of time was not possible. This was a continual predicament; just when the discussions became lively with

input from many teachers, it was time to end the sessions. There were many training sessions where additional time would have been helpful both for the extension of ideas being considered and for more involvement of the teachers in discussions of relevant applications of these concepts to their classroom situations. The scheduled times for teacher training were clearly inadequate to allow for the completion of the teaching and discussion of a given subject matter. In addition, teachers often wished to stay after the sessions and ask additional questions, but they needed to hurry back to their classrooms. On the other hand, these training modules consisted of more concentrated teaching time than they are usually exposed to, and they were very appreciative of time spent together.

Recommendations

During the last several years there has been renewed interest from Western educators and social service workers in the Sub-Saharan region. With the increase of deaths associated with HIV/AIDS and the seemingly endless cycle of poverty in these countries, people are becoming more and more concerned about orphaned, uneducated children living in squalor. Even celebrities like Oprah Winfrey and Bill and Melinda Gates are spotlighting this region and sending millions of dollars to provide help, particularly for educational provision for rural children. There are more magazine articles about the scourge of HIV/AIDS and poverty in this region than existed ten years ago and these issues have been broadcast over television with accompanying vivid videotapes of children in distress.

Recommendations for the future direction of educational practice comprise three proposals. The first recommendation, stemming directly from the results of the current study, addresses the specific needs of teachers for on-site, classroom-relevant, affordable training. Due to the high cost of "distance learning" and the current lack of cost-efficient on-site teacher training sessions, teachers are stymied in their attempts to gain more knowledge. In-service training sessions have the potential to reduce the problems involved with distance learning. If links were established to distance learning colleges and course credit was instituted for in-service training sessions, teachers could continue their educational pursuits on site at local schools. These training sessions/educational courses could be available to teachers at a reasonable fee and they could benefit from the proximity and reduced cost of the courses to become more knowledgeable about teaching theories and methods. This proposal entails a new paradigm of "distance learning" and would require much patience and persistence to institute. However, the potential for teachers to become more informed is considerable and, ultimately, this would impact their students' acquisition of knowledge in valuable ways.

Second, while teacher training is an essential part of improving the educational outcomes for Zambian children, researchers and educators must become more innovative in their quest to ameliorate the educational crisis in Zambia. An example of a creative, successful new program is the Interactive Radio Instruction (IRI), initiated in 2000 and sponsored by USAID. Radio

Chikuni is a community-based radio station which provides educational access to children who have no other resources in their villages (USAID, 2003). The station broadcasts three hours of primary school education daily, with an estimated potential audience of 700,000 people. The children in the villages are unable to walk the long distances to the nearest school but are able to meet at the parish station chapel or outside under a shade tree (Jesuit and Friends, 2005). The Chikuni Parish requests each village to select two people to be mentors who help students with lessons heard over the radio. Mentors are required to have completed Grade 9 and come to the parish once a month for training. They use wind-up radios with no batteries and help the students with drills and exercises after each program. Radio Chikuni has 43 classes from Grade 1 to Grade 7 with 912 students (Chikuni Radio, 2005). Many of these students do very well academically and the following story about Interactive Radio Instruction is told in a USAID Summary:

> In 2001 at the end of Grade One IRI broadcasts, the Chikuni Community Radio Station organized an "It's Academic!" radio quiz show for teams from Grade One competitors from all IRI centers as well as some local government schools. Trained teachers developed the questions, based on the Grade One curriculum. Unexpectedly, the government schools were eliminated early in the quiz while the IRI teams continued to answer the questions correctly. After adding more difficult questions to the quiz, CCR was finally able to declare a winner, which was the team of girls and boys from Cheelo IRI Center, proof positive that IRI is helping communities achieve their dreams of education for their children. (USAID, 2003, p. 2)

This program is helping to meet the educational needs of many children and will, hopefully, continue into the future. Interactive Radio Instruction is increasing in popularity within community schools nationwide and enrollment of students has increased from 19,230 children in 2003 to 38,513 children in 2004. Over the course of implementation, this program will increase literacy learning achievement scores by over 15 % (USAID, 2005).

Radio Chikuni is one example of educators initiating a resourceful program with exceptionally encouraging results. As educators and researchers, it is imperative that adequate attention be given to useful research which will help to provide solutions to these enormous concerns. Hopefully, the results of this study will serve as a contribution to the information base of researchers who are strategizing to improve educational provision for Zambian school children.

Third, as Zambian government support is essential to further the program of educational reform, educators must take note of individuals, agencies and organizations who have either the potential or who have actually taken an active role in providing for educational improvement. The Catholic Church is an excellent example of an organization that has become actively involved in the rising call for the government to become more intentional about educational reform. The Catholic Church Bishops released a statement on 16 June, 2000, which called their church members and the wider Zambian public to be in solidarity with the suffering people around them (Komakoma, 2003). The statement called for an ordering of priorities that begged for an immediate

response to the social and educational crisis. One of the points in this statement follows:

> We are frequently told that there are insufficient resources to meet the pressing needs of the people. But we repeat the analysis made by our Catholic Commission for Justice and Peace and many other groups, that the primary challenge facing Zambia today is not resources but priorities. Is the perception of ordinary Zambians wrong when we ask again and again why money cannot be found for drugs in hospitals and books in schools, for rural feeder roads and provision for clean water and sanitation, but can easily be found for extensive foreign travel of high government officials, importation of fancy vehicles, improvement of roads in low-density urban neighborhoods, purchase of unnecessary materials, and many other expenditures that do not meet the pressing social needs of the people? (Komakoma, 2003, p. 430)

The statement from the Catholic Church continues to compellingly make the point that Zambia's leaders must realign their priorities:

> We know that there is no future development without healthy and educated citizens. Fancy shopping malls, expensive vehicles, extravagant social events, and high levels of consumption among a very small number of people, are by no means signs of economic or social progress in Zambia. In the face of increasing levels of poverty, no one can ignore the fact that the country is in a severe social crisis. (Komakoma, 2003, p. 428)

The Catholic Church implores Zambian citizens to request meetings, write letters, and publicly express demands for fiscal responsibility on the part of the government. The church takes the position that democracy in Zambia requires that citizens exercise not only their right but also their duty to get involved with governmental decisions (Komakoma, 2003).

The Zambian Teachers' Union is another indigenous organization that is actively influencing educational process in the nation. There are three teachers

union in Zambia: 1) Zambia National Union of Teachers; 2) Basic Education Teachers Union of Zambia; and 3) Secondary School Teachers Union of Zambia. Several newspaper articles reported on the activities of these unions. The Basic Education Teachers Union of Zambia recently expressed disappointment over the government's move to divert budgeted money from teacher recruitment to the operations budget of the University of Zambia. The Education Minister stated that the recruitment of teachers has been discontinued for the year 2006 because it has channeled the 500 billion kwacha ($150 million) slated for the recruitment to the operations budget of the university, since the lecturers were demanding improved conditions of service (Xinhua, 2006, July 6). The general secretary of the union stated that "government is aware on the urgent need to have more teachers employed as there are serious shortages of teachers in the country. Government should quickly rescind this decision to avoid more confusion in the education sector" (Xinhua, 2006, July 6). Interestingly, the University of Zambia and the Copperbelt University, Zambia's two universities, enroll less than 3,000 students every year, out of the 20,000 who graduate from secondary schools, but they still receive priority access to government funding. The Basic Education Teachers Union also charged that the massive school dropouts in schools are a result of the government's inability to employ more teachers. The union stated that because 9,000 teachers were not employed that were trained between 2002 and 2003, schools "now face a choice of either turning away pupils from class or

to function with as many as 100 pupils congested in one classroom" (Hanyona, 2005, January 15).

The union attributes the declining education standards in the country to government's poor investment in the teaching profession and blames the government for the pervasive "inertia and failure to improve the working conditions of teachers, especially those in rural areas who require hardship allowances" (Hanyona, 2005, January 15). The union deputy general secretary said "the current situation was pathetic…and called on government to honour its obligation of paying teachers their housing allowances" (Times Reporter, 2005, October 6). The teachers unions are active and one newspaper article reported that the Zambian National Teachers Union general secretary Roy Mwamba said teachers should fight for their rights and for better conditions of service (Times Reporter, 2005, October 6).

There are also educators associated with the University of Zambia union who have been calling for educational reform. These educators have the potential to provide relevant advice since they are already associated with the educational system in Zambia. A professor in the Economics Department at The University of Zambia wrote about primary education.

> Until sustained economic growth at respectable levels is achieved in the economy and the current poverty levels are significantly brought down (which, going by trends so far, is unlikely to happen in the short to medium term), the goal of providing universal quality primary education cannot be achieved. (Seshamani, 2001, p. 16)

He gives several recommendations for enhancing education in Zambia which are very direct and unequivocal. First, there must be a genuine commitment to the goal on the part of the government that goes beyond mere expression in words. In addition, primary school expenditures must be given the same regimented status within the budget as debt servicing experienced prior to September, 2005. Second, there must be a strict monitoring of the country's resources in order to ensure that they are used for development. Seshamani (2001) writes about the paradox of a constant shortage of resources for everything related to development and poverty reduction, while incessant allegations of corruption involving hundreds of millions of dollars continue. He cites several cases of alleged corruption which were never resolved in court. Third, assuming that adequate resources are allotted to education, these resources need to be prioritized. "The situation wherein personal emoluments swallow virtually the whole of the budget with only a few financial crumbs available for recurrent and capital expenditures should not be allowed to persist" (Seshamani, 2001, p. 19). He suggests that 30 % of resources should be used for adequate living wages to teachers, 30 % should be devoted to the purchase of supplies, and 40 % should be used for capital expenditure. Fourth, there needs to be a credible and transparent mechanism for monitoring resolve to put such a mechanism in place (Seshamani, 2001). These suggestions are crucial to the provision of education for all and were outlined by a university professor familiar with the current situation in Zambia.

The restructuring of the distance learning paradigm, the creation of more innovative educational programs, and the increased support of organizations and agencies taking an active role in educational provision are essential elements of education reform in Zambia. However, although these recommendations for the enhancement of educational provision are important and meaningful, they will not guarantee a basic school education for all Zambian children in the near future. Educational provision in Zambia is exceedingly complicated and will require a multi-faceted approach to the attainment of education for all by the year 2015. This research study has demonstrated that one of these facets should be in-service, on-site teacher training seminars for basic school teachers.

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APPENDIX A

QUESTIONNAIRE: IN-SERVICE TEACHER TRAINING IN RURAL PRIMARY SCHOOLS IN CHOMA DISTRICT, ZAMBIA

APPENDIX B

INTERVIEW QUESTIONS FOR PRIMARY SCHOOL TEACHERS IN CHOMA DISTRICT, ZAMBIA

APPENDIX C

DATA CODEBOOK

APPENDIX D

MAP OF ZAMBIA

APPENDIX E

MAP OF ZAMBIA