ACCESS TO, RETENTION AND EXPERIENCES OF GIRLS IN TECHNICAL SECONDARY SCHOOLS.

BY

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A dissertation submitted to the University of Zambia in partial fulfillment of the requirements for the degree of Master of Arts in Gender Studies.

THE UNIVERSITY OF ZAMBIA
LUSAKA

2003

DEDICATION

For Esther; courage and strength in strain,

a song, lasting in refrain,

For Chiyesu; scholarly quest 'n' strife,

sanctuary thus forsaken is life,

For Museli; compassion in restless feet,

when mama, the heart missed a beat,

For Musompa; the lament to mama's hiding,

holding on to glad tidings,

For Kanema; toddle shuts reminisce,

but daybreak brings renaissance,

For Masela; "amama", full of sight

For a child detached, so sigh,

For Kamau; "atata" in understanding,

The silent vigil, remote and standing,

For the good Lord; the persistent presence,

His promise, non-pretence.

DECLARATION

I, Nkenda Sachingongu, do hereby declare that this dissertation represents my own work and that it has not been submitted for a degree at the University of Zambia or at another University.

Signed: .....

Date: 5/5/03 .....

APPROVAL

This dissertation by .....Nkonda.....Sachingongu.....is approved as fulfilling part of the requirements for the award of the degree of Master of Arts in Gender Studies of the University of Zambia.

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ABSTRACT

The purpose of this study was to investigate the social, cultural and economic characteristics of the girls that have access to technical secondary schools. An attempt was also made to analyse the girls' access to these schools and their retention, dropout rates, and academic performance. In addition, the study investigated the experiences that the girls went through in the technical secondary schools.

The sample comprised of ninety girls, sixty boys, twenty-four teachers and twenty parents. The sample sites comprised one rural technical secondary school and one urban technical secondary school. Data were collected through in-depth interviews and a survey of institutional records. Qualitative and quantitative methods of data analysis were used mutually and complementarily.

The study established: that girls were not as accessible to technical secondary schools as boys; girls' access to, or participation in additional mathematics, pure science, industrial arts, and positions of responsibility such as class monitors and captains as well as their retention in the schools were lower than that for boys. The study also found that more girls in the urban technical secondary school not only came from higher socio-economic backgrounds, but also experienced and practised less of gender-stereotypic behaviour than the girls in the rural technical secondary school, both at home and at school.

The study concludes with recommendations to the Ministry of education and other concerned authorities and agencies for the achievement of gender equality in technical secondary schools that include gender sensitisation programmes for teachers and school authorities.

ACKNOWLEDGEMENTS

The success of this research study was a result of contributions of various individuals, institutions, and organisations: My gratitude goes to my supervisor, Professor Dickson M. Mwansa and my co-supervisor Dr. T. Kusanthan for their comments, advice and guidance. I am grateful to my employers, the Ministry of Education, for granting me study leave and a bursary. I would like to thank Mr. L.K. Bwalya, Human Resource Development Officer, for his understanding. My gratitude also extends to the East and Southern Africa Universities Research Programme (ESAURP) for granting me some funds for my research.

I would like to thank the Provincial Education Officer for Northwestern Province, Mr. J.K. Mileji and his Deputy, Mr. Robert Muyutu for releasing me and facilitating my study leave. I wish to thank my former head teacher, Mr. Makungu Namukolo for his part both in his official and personal capacities. My appreciation also goes posthumously to the Senior Inspector of Schools for Social Sciences, Mr. L.M. Hamoonga for helping me to gain entry into David Kaunda Technical Secondary School for data collection.

I am grateful to my colleagues in the M.A. Gender Studies class for their support: Paul Mzumara, Ngela Mwanangumbi – Simfukwe, Engiwe Mzyeche-Simfukwe, Andrew Phiri, Namwiinga Bubaala-Mumbi, Rose Kamungu, Adamson Chitembwe, Delia Mwale-Yerokun, Cedric Lungwe and Admire Ngwenya. I am particularly grateful to Martin Ngonga for his consistent emotional and material support. My thanks also go to my sister, Cecilia Muchepa Muzyamba, and to Godwin Chipango

Chinoya and Siachiyaya Mwanangombe for sharing their experiences and also to young Munamuzunga "Momu" Sikaulu for keeping up the noise that kept me awake and also to my room mates Bernard Chileshe and Isaac Simutowe for their company and support. Other thanks are due to Mulobelwa W. Mwandu, Madalitso Khulupirika Banja, Habukoko Naali, M.W.H. Hazemba and other members of Zambezi Block 6.

I am thankful to all staff of the Department of Gender Studies at the University of Zambia: Dr. Mable Milimo, Dr. Irene Maimbolwa – Sinyangwe, Dr. Fay Gadsden, Dr. Chitalu Lumbwe, Mr. R. Kalinda, and Ms. Inonge Likezo for sharing their time and knowledge with me and also to all the pupils, teachers, education authorities and parents who made my data collection possible. I also thank Samantha Mukalula, Kerone Chimoka and posthumously, Zeniah Chilengi without whose typing skills, this dissertation would not have been complete.

I am grateful to my mother Masela Chitunga Samujinga and my father Benjamin Sampasa Kamau Sachingongu who laid the foundation for my education. I am grateful to my children, Chiyesu, Museli, Musompa and Kanema for bearing my long absence from home and all the opportunity costs that pertained. My gratitude also goes to my brother Nkwazhi Sachingongu.

Last but not least, my heartfelt gratitude goes to my dear wife, Esther Mukanda Sachingongu for being a never-ending and invaluable pillar of support and encouragement as well as for single-handedly shouldering the brunt of the effects of my having to pursue my studies. To her, I remain forever indebted.

Finally, I thank all other persons, too numerous to mention, that contributed variously towards the successful completion of this dissertation. Ultimately, I am grateful to God the Almighty for what He was, what He has been, and what He always will be. However, I alone am entirely responsible for any shortcomings in the dissertation.

Nkenda Sachingongu
March 2000
University of Zambia

TABLE OF CONTENTS

CHAPTER THREE

CHAPTER FOUR

CHAPTER FIVE

CHAPTER SIX

CHAPTER SEVEN

LIST OF TABLES

TABLE **PAGE**

ABBREVIATIONS

A.P.U.	-	Academic Production Unit.
D.K.	-	David Kaunda Technical Secondary School.
F.A.W.E.	-	Forum for African Women Educationists.
F.A.W.E.Z.A.	-	Forum for African Women Educationist in Zambia.
G.M.D.	-	Geometrical and Mechanical Drawing.
I.L.O.	-	International Labour Organisation.
J.S.S.L.E.	-	Junior Secondary School Leaving Examinations.
M.O.E.	-	Ministry of Education.
SIDA	-	Swedish International Development Agency.
SOLTECH	-	Solwezi Technical Secondary School.
UNICEF	-	United Nations International Children's Emergency Fund.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Problem

Worldwide, the issue of girls' education has turned from a mere gender issue into a major human rights issue (FAWE, 1996). In Zambia, various organisations (public and private) as well as individuals (female and male) have worked tirelessly to ensure gender equality in education. Today, Zambia is a signatory to a number of international conventions that include the 1989 United Nations Convention on the Rights of the Child; the Convention on the Elimination of All Forms of Discrimination Against Women and the 1990 Declaration on the Education for All (MOE and UNICEF, 1998).

In Zambia, this silent revolution, as some advocates have termed it, has culminated into an educational policy that provides a framework for promoting gender equality. The policy, Educating Our Future, commits the Ministry of Education to the elimination of gender disparities in the Zambian educational system. The main goals of the policy are explicitly put in its mission statement thus:

> ... To guide the provision of education for all Zambians so that they are able to pursue knowledge and skills, manifest excellence in performance and moral uprightness, defend democratic ideals, and accept and value other persons on the basis of their personal wealth and dignity, irrespective of gender, religion, ethic origin or any other discriminatory characteristic (MOE, 1996: XI).

It would seem that the silent revolution has been loud as it pertains to the education of girls in a general sense. The silence has however been real in relation to the education of girls in technical secondary schools. Not much is known about the girls in these schools, and it is this that justified the purpose of this study.

Unlike academic education, technical and vocational education was the earliest formal education that was introduced in Zambia. This education was introduced by missionaries and colonial administrators with the hope of raising the standard of living of the Africans. Initially, this education was introduced in primary schools. The first government-controlled technical institution was the Central Trade School established in 1930 (Kasolo, 1990). In 1934, the Hodgeson Technical College was established for those who completed six years of primary education.

At independence in 1964, the Zambian government realised the importance of science and technology in its social, economic, cultural and political development. The First National Development Plan therefore called for the strengthening of the teaching of science and mathematics in secondary schools (Kasolo, 1990). Technical Secondary Schools in Zambia were consequently established in response to the needs of the newly independent Zambian nation. These schools were meant to provide a foundation for the development of technical human resource; preparing pupils for training in tertiary technical institutions as engineers, technologists, or technicians (Tembo, 1994). Later, as the labour market declined, these schools took on the new task of providing the young with skills that would help them to earn a living after leaving school, thereby reducing youth unemployment.

The first technical secondary school that was established in Zambia was David Kaunda Technical Secondary School, opened in Lusaka in 1965. Hillcrest Technical Secondary School in Livingstone followed in 1969 (Tembo, 1994). Almost twenty years later, thirteen other such schools were established in the provinces by transforming some selected existing academic secondary schools (Kasolo, 1990). While David Kaunda and Hillcrest Technical Secondary Schools remained national schools, the rest drew pupils from within their respective provinces. Only the highest achievers at each respective level (national or provincial) were expected to

gain access to these schools. Thus, Solwezi Technical Secondary School was established for the North Western Province.

The technical secondary schools followed an officially and centrally formulated diversified curriculum not typical of the academic curriculum in the conventional secondary schools. In particular, pupils in these schools were encouraged to learn mathematics, pure science and industrial arts. From their inception, technical secondary schools were designed for boys only until 1993 when some of them were opened to girls in the bid to reduce the gender gaps in technical secondary school education.

How girls have fared in these schools cannot be adequately assessed due to limited related literature. While there has been relatively a lot of research and literature on the education of girls, there has been little on the girls as they relate to technical secondary schools. Against this background, this study investigated this issue by looking at girls' access to and retention as well as learning experiences in technical secondary schools.

1.2 Statement of the Problem

The problem addressed by this study is that as a result of interplay of social, economic and cultural factors that impinge upon girls, especially in co-educational schools, female children in Zambia are less likely to enter secondary education, proceed to grade twelve, take science subjects or industrial arts and achieve highly in these subjects than their male counterparts. It is therefore important to examine the factors that impact on access, retention and experiences of girls in predominantly boys' technical secondary schools in order to subsequently be able to reduce enrollment gap between girls and boys in these schools.

1.3 Rationale

Although a number of studies have identified several gender gaps in the Zambian educational system, very few, if any at all, have specifically studied and analysed the situation of girls in technical secondary schools. It was especially invaluable to identify the extent to which these schools are providing mathematics, science and industrial arts to girls since these subjects make the difference between the girls in these schools and those in the conventional schools. It was hoped that this study would contribute knowledge to existing research and literature on girls' education in Sub-Saharan Africa in general and Zambia in particular. It was also hoped that results of this study would be useful to policy-makers, educators, organisations and individuals alike in achieving gender equality in technical secondary schools.

1.4 Objectives of the Study

(i) To identify social, economic and cultural characteristics of the girls that have access to technical secondary schools;
(ii) To analyse access, retention and drop-out rates of girls in technical secondary schools;
(iii) To analyse academic performance of girls in technical secondary schools;
(iv) To document the experiences of girls in technical secondary schools.

1.5 Limitations of the Study

The study was limited by inadequate funding which restricted it to only two schools: Solwezi Technical Secondary School (Soltech) in the North Western Province and David Kaunda Technical Secondary School (D.K.) in the Lusaka Province. It would have added validity to the findings if the study was also extended to co-educational technical secondary schools in other provinces.

Secondly, the school administration at D.K. did not make available, all the school records and information necessary for this study. This was partly because the study was conducted when the school was preparing for the final examinations for Grade Nine and Grade 12.

1.6 Definition of terms

Access to

The extent to which girls or boys are able or unable to enroll in a school and upon enrollment, the extent to which they are availed the school's provisions such as furniture, teachers, and the curriculum on an equal basis.

Retention

The extent to which girls or boys are able to remain in school once they have been enrolled.

Experiences

The ways in which girls are treated in school and how these affect their minds and feelings, and influence behaviour either positively or negatively.

Technical Secondary Schools

Those secondary schools that were established as a base for Zambia's technical human resources development by preparing pupils for training at higher technical institutions of learning as technologists, technicians and engineers by emphasising the teaching and learning of mathematics, physics, chemistry, biology, woodwork, metalwork as well as geometrical and mechanical drawing.

Sexual harassment

Unwelcome sexual attention that threatens a pupil's well-being in school. It may be done covertly or overtly. It is also the use of offensive language, physical conduct or official authority to discriminate, intimidate or publicly humiliate another person on the basis of his/her sex.

Gender

The different socio-cultural roles, responsibilities and expectations for males and females which affect their ability and incentive to participate in activities that lead to different impact. These roles, responsibilities and expectations are learned, interchangeable between males and females, and vary according to time, place and culture.

Gender equality

A situation where socio-cultural roles, responsibilities and expectations for males and females are interchangeably the same and without bias irrespective of one's sex.

Gender sensitisation

The systematic effort to promote awareness of gender differences and the implications that these differences have on individuals as well as on efforts in development.

Self –image

The general opinion about oneself and one's abilities that an individual forms in his or her mind as a result of gender differences in roles, responsibilities and expectations for males and females. This opinion may not be necessarily true.

1.7 Organisation of the Study

The rest of this study is organised into six chapters. Chapter two presents a review of literature. Chapter three is concerned with the research methodology that was used for the study. Chapter four examines the social, economic and cultural characteristics of the girls in the study. Chapter five focuses on the girls' access to technical secondary schools while chapter six looks at the girls' retention rates and academic performance. Finally, chapter seven gives a summary of the findings of the study, draws conclusions and also provides some recommendations for policy and practice in the quest for gender equality in education.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Problem of girls' education

Literature on education of girls, accuses education of being neither neutral nor a good thing (Spender, 1982). Girls have been said to benefit less because schools perpetuate a systematic devaluation of girls. The literature defines the problem of girls' education mainly as that of lower access to the school and its offerings. Girls are also victims of various forms of discrimination, harassment and negative pupil and teacher attitudes. This has had such effects as lower progression rates, lower academic performance, and lower self-image.

2.2 Problem of girl' enrolment and discrimination

King and Hill (1993) and Subbarao (1994) argue that although girls' enrollment figures in schools have risen steadily over the years, they still fall below those of boys. Various reasons have been attributed for this. Studies in Ghana and Kenya (King and Hill, 1993) have shown that girls are in those schools that offer lower quality education and therefore work to discourage girls from enrolling in schools unlike their male counterparts who are in more attractive schools. It has also been argued (UNICEF/GRZ, 1999) that long walking distances to school have also affected girls' participation in school. Even when girls are afforded equal enrollment opportunity to the same schools, they experience other forms of discrimination. This, for example, is shown in the way the distribution of school chores tends to replicate the gender-based distribution of household chores whereby "leadership positions and challenging tasks are assigned mostly to boys" (UNICEF/GRZ, 1999). Prather (1991) argues that simply ensuring equal exposure to the same curriculum does not in itself guarantee equal learning

opportunities. According to El-Sanabary (1994), such unequal learning opportunities are reflected in reduced social and occupational options for girls.

2.3 Problem of girls' access to mathematics, science and industrial arts

A major concern about the education of girls is their lesser access to mathematics, science and industrial arts. The United Nations (1995) shows that even the Nordic countries, usually with the lowest gender gaps, are no exception. In the Netherlands for example, in 1990, there were less than 1% women of all those taking science and technology. Out of every 100 men who were enrolled in science and technology, only 39 are women in Sub-Saharan Africa and only 48 are women in North Africa. According to Harvey and Edwards (1980), the only science that is popular to girls is biology. Yet, in her study of the teaching and learning of science and mathematics, Varghese (1987) learned that girls do realise the importance of the other science subjects except that they are unable to take them.

Girls' lesser access to mathematics, science and industrial arts is blamed on gender streaming by subject which, according to Odaga and Heneveld (1995), is normal in Sub-Sahara Africa. A study by Gordon (1994) showed that girls in Zimbabwe are still directed into "feminine" subject choices away from science and mathematics. In Kenya, girls are said to be legally excluded from public technical schools (Prather, 1991). On the other hand, the school curriculum is accused of projecting masculine images which alienate girls thereby making them shun science and technology subjects (Odaga and Heneveld, 1995) because they see these subjects as irrelevant to their careers (ILO, 1976).

The Zambian school curriculum has been no exception. It is described by Maimbolwa-Sinyangwe and Chilangwa (1995) as being stereotypically differentiated by sex whereby girls

are prepared for future roles as housewives and mothers and for lower status jobs. Kelly (1994) and Tembo (1994) postulate that technical subjects in Zambia are rated as being inferior to academic subjects, and it would not be surprising if therefore, there are fewer girls taking industrial arts. This is probably why, according to Kelly (1994), males still dominate sciences and engineering in the Zambian technological and scientific institutions.

2.4 Problem of girls' performance in mathematics, science and industrial arts

Girls' academic achievement in mathematics, science and technological subjects has been of concern. FAWE (1996) reveals that most Sub-Saharan countries report lower academic performance in mathematics, science and industrial arts for girls. Girls have been dubbed as "lacking aptitude, attitude and knowledge" in these subjects (MOE and UNICEF, 1998:87). Erinosho's (1994) study in Nigeria reveals that a girl will usually opt for and do well in these subjects only if among other things, she comes from a certain social background and is in a single-sex school. Such a girl is likely to possess a positive attitude towards these subjects, a high rating of her self-ability and a will to participate regularly in academic activities in the subjects.

In Zambian schools, Mutukwa et al (1995) see the girls as lacking interest, self-confidence, determination and encouragement to do mathematics, science and industrial arts as well as to work hard in them. Kelly (1994) says one third of the girls that sit for the Grade 12 final examination do not attain full school certificates.

2.5 Problem of girls' retention

Girls' drop-out rates are still higher than those for boys. Various reasons have been attributed to this. Kelly (1994) blames economic constraints while Maimbolwa-Sinyangwe and

Chilangwa (1995) attribute it to negative social values, attitudes and expectations pertaining to girls' education. On the other hand, Mwansa (1993) believes that the poor retention rates of the girls is a result of their parents' low educational levels. Kankasa-Mabula and Chondoka (1996) attribute the problem to the failure by the government and school administrations to implement policy on gender equality.

2.6 Problem of teachers

Some studies have attributed the problem of access, retention and academic performance of girls to teachers. They have accused teachers of being insensitive to gender issues (Subbarao, 1994). Dale Spender (1982) cites the 1988 Educational Reform Act in Britain as having made the most fundamental changes of the century although proposals on science and mathematics were perpetuating a systematic devaluation of girls by the teachers in these subjects. FAWE (1996) believes that teachers are weighed down by their own socio-cultural values. The situation of girls is worsened by the under-representation of female staff both at teaching and at managerial levels. According to FAWE (1996), female secondary school teachers in Sub-Saharan Africa constitute only 22% of the total teaching work force. Rural areas are especially susceptible to low numbers of female teachers.

Obanya (1985) sees the ideal teacher as one that is patient with pupils and gives all possible help to the disadvantaged. Therefore, if girls' access to the curriculum is limited and if their performance is lower than that of boys, it can be assumed that ideal teachers are lacking in these schools. According to FAWE (1996), teachers with negative gender attitudes are more prevalent in rural areas where general teacher quality is poorer.

2.7 Technical secondary schools as a solution to the problem of girls' education

Various interventions and initiatives are underway in Africa in the bid to strengthen the participation and performance of girls in mathematics, science and technology. In Zambia, one of the initiatives was to open up technical secondary schools which were formally single-sex boys' schools, to girls. However, it is doubtful that these schools are successfully narrowing the gender gap as envisaged. The World Bank (1991) thinks that technical secondary schools in most developing countries like Zambia lack the necessary funds for sourcing and maintaining competent teachers, appropriate equipment and instructional materials.

According to the Commonwealth Secretariat (1993), the effectiveness of a school is measured by the extent to which its set objectives are accomplished. Since effectiveness itself is a variable that is dependent, among other things, on financial resources and since, according to Tembo (1994) the cost of sustaining technical secondary schools is higher than that of ordinary secondary schools, it is doubtful if technical secondary schools are achieving their set goals of reducing gender gaps in education.

It has also been argued (Kelly, 1994) that as long as technical secondary schools remain co-educational, they will always perpetuate dominance by boys and that teachers' attention will always be concentrated on boys rather than girls. The study by Tembo (1994) suggests that if girls' access to the curriculum is different from that of boys, it is because the curriculum, despite that it is centrally and officially formulated, is subject to manipulation by school administrations. Tembo also argues that girls usually rate technical subjects as inferior to academic subjects, an accusation that is supported by Kelly (1994). Mwansa (1997), laments that the numbers of girls in technical secondary schools in Zambia are still very low compared to boys'. He cites David Kaunda Technical Secondary School where in 1997, there were only

120 girls (or about 13%) of the total 880-pupil population. He adds that the girls in these schools are regarded as intruders and they experience a lot of sexual harassment.

2.8 Problem of policy, policy makers, and administrators

Policy makers have been accused (Prather, 1991) of failing to implement adequate gender-specific strategies. At the most, all they have done is make general declarations of commitment to girls' education. School administrations have also been accused of lacking supportive attitudes and serious implementation strategy. Consequently, initiatives in Sub-Saharan Africa to raise the participation of girls in education have had little impact. For example, according to Gordon (1994), there has been little meaningful change in Zimbabwe despite government's stated commitment.

In Zambia, the new National Policy on Education (MOE, 1996) aims at achieving gender equality by eliminating all those factors that hinder girls' access, retention and positive experiences in school. The policy's strategies include admission of girls and boys at a ratio of one to one, the establishment of more boarding places for girls, as well as encouraging their participation in science, mathematics and technology subjects. In short, the policy promises fairness and justice in the provision of education as a right. Where this is impended by such factors as gender, government is expected to intervene. However, going by the reviewed literature, even this policy may end up, like in other parts of Sub-Sahara, as mere stated commitment with little impact.

2.9 Summary

This literature review reveals that worldwide, positive steps have been adopted to ensure the equalisation of educational opportunities and experiences between the sexes. The picture that

emerges however, is that of near despondency; girls still record lower enrollment and retention rates as well as lower academic performance, the curriculum is still stereotypically differentiated by sex and girls experience various forms of discrimination and harassment.

The problem has been attributed to the negative social values, attitudes and expectations that are attached to girls' education. On the other hand, government and school administrations are accused of lacking commitment to implementing strategy. Teachers are still affected by negative gender attitudes while female teaching and managerial staff is under-represented. Economic constraints have also had a telling effect on girls' education while some sources see it as a problem of co-education. It was therefore the aim of this study to investigate the situation of girls at David Kaunda and Solwezi Technical Secondary Schools to find out whether the experiences of the girls in these schools are as has been identified in reviewed literature.

CHAPTER THREE

METHODOLOGY

3.1 Research Design

The study used both qualitative and quantitative methods. In particular, the study was exploratory and descriptive whereby it did not focus on testing any hypothesis.

3.2 Sample Sites

The sites comprised David Kaunda Technical Secondary School in Lusaka and Solwezi Technical Secondary School in Solwezi. The choice of these schools was purposive and was based on three factors: they were accessible to the researcher; they represented both rural (Solwezi) and urban (Lusaka) settings, and were not only technical secondary schools but also co-educational schools.

3.3 Sample Procedure

In order to have a sample that was representative of the different academic subjects followed in the schools, complete enumeration was used for all the girls in the technical classes at David Kaunda and all the girls in the non-technical classes at Solwezi.

Disproportional stratified sampling was used to select the remaining girls from the non-technical classes at David Kaunda, and from the technical classes at Solwezi. First, all the girls in these classes were categorised into three grades (10,11 and 12). After this, simple random sampling was used within each stratum. The simple random sampling procedure was also used for selecting the boys in both schools.

Purposive sampling was used for the teachers in order to select those who were teaching the sampled pupils. Purposive sampling also targeted the respective Heads of Department for natural science and industrial arts subjects, the teacher responsible for Guidance and Counseling in each school, as well as the respective Head teachers and Provincial Education Officer.

Purposive sampling was used to select the girls' parents or guardians that were residents of Lusaka or Solwezi, but at the same time were accessible to the researcher. This was in view of the fact that the two schools were boarding schools and the parents-guardians could be living in other districts. The addresses were sourced from the sampled girls.

3.4 Data Collection

Data were collected using semi-structured in-depth interviews for all the respondents. The interviews were conducted at the convenience of the respondents, individually and privately. The Head teachers and Provincial Education Administrators were interviewed in their respective offices. A few of the parents-guardians were interviewed from their business offices. Most were interviewed from their respective homes.

The in-depth interviews enabled the pupils to talk freely so as to bring out their experiences and emic perspective. The questionnaire asked for some demographic information, previous schooling, how and why they had come to a technical secondary school, the subjects they liked the most, as well as their experiences with their fellow pupils, teachers and parents.

A survey of school records provided some of the data to complement data from the interviews. Grade 12 Examination results for the School Certificate were acquired from the Examinations Council of Zambia for the purpose of examining academic performance of the girls. Data from the interviews were recorded using a tape recorder.

A questionnaire was used for both males and females in each sampled category of respondents; pupils, teachers, and parents.

3.5 Data Analysis

Data were analysed both qualitatively and quantitatively. Data from the interviews were transcribed verbatim. Responses were put into categories.

For the sake of identifying the quotes, codes were devised. For David Kaunda Technical Secondary, the code "DK" was used. Similarly, the code "SOL" was used for Solwezi Technical Secondary School. The respondents were also respectively identified by the numbers 1,2,3,4,5,6 etc. in each school.

For example, the seventh girl that was interviewed at David Kaunda Technical Secondary School was given the code "Girl 7.DK". The fourth boy in the same school was given the code "Boy 4.DK". Similar codes were created for teachers. For example a third female teacher at DK was coded as "Female Teacher 3.DK" and a second male teacher as "Male Teacher 2.DK". The same applied for the respondents at Solwezi Technical Secondary School except that the code "SOL" replaced "DK". For example, the sixth female pupil interviewed was coded as "Girl 6.SOL". The fourth male teacher was coded "Male Teacher 4.SOL" and so on.

The qualitative analysis of the respondents' emic views allowed for more meaningful explanation of the data; revealing the reasons for the situation of girls as well as the processes and mechanisms that pertained.

Quantitative data were summarised and presented as disaggregated averages, percentages and frequency tables. The differences arising between the girls' and boys' situation and/or experiences provided a measure of the gender concerns in the two schools.

CHAPTER FOUR

DEMOGRAPHIC CHARACTERISTICS AND FAMILY BACKGROUND OF THE GIRLS IN TECHNICAL SECONDARY SCHOOLS

This chapter identifies and analyses demographic and family characteristics of the girls in this study.

THE AGE OF THE GIRLS

Table 4.1 Pupils' average age in years by grade

Grade	SOLTECH		D.K.		Overall Average Age
	Girls	Boys	Girls	Boys	
10	16.1	17.5	15.6	17.3	16.6
11	17.2	17.6	16.4	17.4	17.1
12	18.4	18.1	17.7	17.9	18.0
Average Age	17.2	17.7	16.5	17.5	17.2

Source: School records

The average age for girls was 17.2 years at Soltech and 16.5 years at D.K. The girls at Soltech were therefore older than their D.K. counterparts. For boys, it was 17.7 and 17.5 years at Soltech and D.K. respectively. Therefore, the boys were older than the girls in both schools. Several reasons could be advanced for these differences. Duncan (1989) and MOE (1998) argue that parents usually send girls to school earlier than boys because girls grow faster than boys. This probably also explains why the girls, despite their higher repetition rates, were still of lower average age.

Often, it is girls that have higher repetition or interruption rates (Duncan, 1989 and MOE, 1998). The situation at both schools seemed to agree with this because the repetition rates

were higher for girls than for boys. At Soltech, 42% of the girls had repeated at one time or another compared to 40% of the boys. At D.K, 22% the girls had repeated compared to 17% of the boys.

The higher repetition rates and older average age of the girls at Soltech could be attributed to differences noted in the academic ability when compared to the girls at D.K. Lower academic ability implies higher chances of interruption in education progression, higher chances of repetition and therefore, the likelihood of a longer stay in the educational system. Overall, the girls at D.K. enrolled a year younger than the expected age whereas those at Soltech more or less enrolled at the expected age. The Zambian government policy puts the eligible age for grades, 10, 11 and 12 at sixteen, seventeen and eighteen respectively (MOE, 1995). The boys in both schools enrolled a year older than the eligible age.

THE EDUCATIONAL BACKGROUND OF THE GIRLS' PARENTS

At Soltech, a total 24.4% of the female parents had gone only as far as primary school compared to 18% for the male parents. At D.K., 7% of both the female parents and the male parents had gone only as far as primary school. Only a total of 31% of the female parents at Soltech had attained senior secondary education compared to 44% for the male parents. Similarly, at D.K., the percentages were 69% and 73% respectively. While no female parent had attained university education at Soltech, 5% of the male parents who had reached senior secondary school had attained University education. Similarly, at D.K., 6% of the female parents with senior secondary education had attained university education compared to 14% of male parents. (Refer to Table 4.2).

Table 4.2 Percentage distribution of parents' highest level of education attained.

	SOLTECH		D.K.	
Educational level attained	**Female Parent (%)**	**Male Parent (%)**	**Female Parent (%)**	**Male Parent (%)**
Primary School	24.4	17.9	6.7	6.7
Junior Secondary	40.0	24.4	20.0	17.8
Senior Secondary	31.2	44.4	68.9	73.3
Not known	4.4	13.3	4.4	2.2
Total	**100.0**	**100.0**	**100.0**	**100.0**
Number of cases	45	45	45	45

Source: Interviews with female pupils

Because of the parents' higher education, the girls at D.K. were likely to have had more positive attitudes and values regarding their education. Ezewu (1983), and Mwansa (1995), argue that the educational levels of parents not only determine the differentiation in status between families but also their attitudes and values which in turn influence among other things, these families' education. The reason for this is given by Craft (1970:76) who argued that educated parents will have had "the experience of school life and studies which could help them with their children's difficulties". Craft believes that it is easier for such parents to understand fully what the school requires of them as parents. Any less positive attitudes and values of the girls at Soltech however, do not necessarily imply the lack of an academic culture in their parents. Maimbolwa-Sinyangwe and Chilangwa (1995) propose that parents, both in rural areas and urban areas, uneducated and educated, do attach great importance to their children's education. What most of the Soltech parents could have lacked therefore was the

relative academic experience to enable them to encourage and guide their children more effectively.

The analysis of the girls' responses in both schools revealed that they were closer to their female parents than their male parents. Therefore, the girls were more likely to have learned from and be influenced more by their female parents than by their male parents. Because of their lower educational attainment and educational experience, it is unlikely that the female parents were equally capable of guiding and encouraging their daughters in their education as the male parents were. This implies that the girls were more likely to have adopted stereotypic beliefs and practices, perpetuated by the female parents. This is because according to Ezewu, 1983; Graham-Brown, 1991; Kabira et al, 1994, lower educational levels imply the continuity of traditional and cultural practices and beliefs while higher education is instrumental in changing attitudes to gender relations.

HOUSEHOLD INCOME

The income status of the parents was divided into three categories: high, middle and low income. The high-income group consisted of those who earned K500, 000 or more per month. The middle income group were those who earned less than K500, 000 but more than K200,000 per month. The lower income group earned less than K200, 000 per month.

At Soltech, 2% of the female parents and 18% of the male parents fell in the high-income group compared to 16% of the female parents and 33% of the male parents at D.K. At Soltech, 62% of the female parents and 31% of the male parents belonged to low-income group while D.K. had 27% of the female and 20% of the male belonging to low income group. There were therefore less female parents in the high income group and more in the low income group than the male parents in both schools. Overall, there were less parents (both women and men) in the

high-income group. At Soltech 10% belonged to high income and at D.K. 24% belonged to high income. (Refer to Table 4.3)

Table 4.3 Percentage distribution of parents' monthly household incomes

Monthly House-hold income	SOLTECH		D.K.		Total			
					SOLTECH	D.K.	OVERALL	
	Females (%)	Males (%)	Females (%)	Males (%)	Females & Males (%)	Females & Males (%)	Females (%)	Males (%)
K500,000 or more	2.2	17.8	15.5	33.3	10.0	24.4	8.9	25.6
K499,000-K200,000	35.6	51.1	57.8	46.7	43.3	52.2	46.7	48.8
K199,000 or less	62.2	31.1	26.7	20.0	46.7	23.3	44.4	25.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Number of cases	45	45	45	45	90	90	90	90

Source: Interviews with female pupils

The low-income levels of the female parents could have affected the girls' schooling because in most of the homes, appropriate role models in form of highly educated female parents in high income jobs were missing. Duncan (1989) differentiates between gender-related behaviours that are taught and those that are observed. Most of the girls in this study observed their female parents were less educated, employed in lower-income jobs or simply unemployed. Erinosho (1994) argues that such social background is likely to affect girls' perceived school-related issues. Because there were more parents in the low-income group at Soltech than at D.K., economic constraints, which Kelly (1994) blames for the problem of girls' education were likely to have affected girls at Soltech

more than girls at D.K. This argument is complemented by the fact that 64% of the girls and 70% of the parents at Soltech said they experienced problems in paying for the necessary school requirements compared to 30% of the girls and 36% of the parents at D.K. The school authorities at Soltech explained that many pupils in the school came from poor homes and had problems in paying the necessary user fees. At D.K., the school authorities explained that very few pupils had such experiences and that it was boys more than the girls who were likely to face financial problems.

AREAS OF RESIDENCE

This variable complemented the interpretation of the results on the education and income levels of the parents. An individual of high education and income level is more likely to live in a high cost-low density residential area than one with low level of education and income.

Table 4.4 Percentage distributions showing girls' type of residential area

Residential Area	**SOLTECH (%)**	**D.K. (%)**
High Cost	24.4	71.1
Low Cost	75.6	28.9
Total	**100.0**	**100.0**
Number of Cases	45	45

Source: Interviews with female pupils

The majority of the girls at D.K. (71%) lived in high-cost low-density residential areas compared to only 24% at Soltech (refer to Table 4.4). This strengthens the argument that the girls at D.K. were less vulnerable to economic constraints than those at Soltech.

PARENTS' BELIEFS AND PRACTICES RELATING TO GIRLS' EDUCATION

Interviews with the parents revealed that they were aware of the type of secondary school that their daughters attended. As far as the parents were concerned, and irrespective of their sex, the schools were among the best at national level (in case of D.K.) or at provincial level (in case of Soltech). A few parents (20% at D.K. and 40% at Soltech) singled out the fact that their daughters were taking industrial arts as one of the reasons why they were happy with their daughters' schools. This is reflected in the following statements:

> "I had always wanted to take technical drawing at school but could not do so... it was offered only to boys. It would also widen my daughter's opportunities to find employment where these days, jobs have become very scarce". (Female Parent 3. SOL).

> "We brought the girl from Maheba (Secondary School) to Soltech because she was always ill. Initially, we wanted her at Mukinge (Girls' Secondary School) but thought twice upon realising that Soltech was a technical secondary school" (Male Parent 3. SOL).

> "I would not like to transfer the girl to a different school because of the technical subjects she takes at D.K. However, I am not happy that the school is too near the town and surrounded by compounds". (Male Parent 2. DK).

> "I would remove my daughter to another school only if that school is very good. But D.K. is a good school and girls are able to take technical drawing". (Female Parent 4. DK).

The majority of the parents (60% at Soltech and 80% at DK) were however more concerned with the general academic standards of the school and the consequent general academic performance of their daughters at the end of their senior secondary education rather than with specific subjects that the schools offered:

> "I want my children to go as far as they can in their education and choose any occupation they want - depending on their academic performance". (Male Parent 5. DK).

"It does not really matter what subjects a child does; what is important is her ability to pass in whatever subjects she is given to do at school. I have seen girls from other (non-technical) secondary schools go on to university" (Female Parent 8, D.K.).

"Every parent is worried about the children's education. She (daughter) is among the few that qualified to senior secondary school. She can finish her education with good marks as long as she focuses her mind on it." (Female Parent 5. SOL).

"We would want our girls to be in boarding and in a better school, but the situation of funds cannot allow". (Male Parent 1. SOL).

Although some parents knew the type of school their daughters went to, they were ignorant of what was actually happening to the girls. This was particularly so at Soltech where, for instance, although some parents said they were happy that their daughters were able to take technical subjects, the girls had either dropped the subject or had not even attempted to take the subject at all.

Most of the parents in both schools, (80% at D.K. and 70%) at Soltech also did not routinely visit their daughters' schools and in particular, none of the female parents had done so. According to Craft (1970), a parent's interest in his or her child's education is measured, among other factors, by the number of times the parent visits the child's school. The parents gave various reasons for not visiting their daughters' schools and included the following:

"I visited the school only once when I had a problem. I did not have money to pay my daughter's school fees and I went to negotiate with the Headmaster to give me a little time". (Male Parent 5. SOL).

"Actually, I have never visited any of my children's school. When it is necessary, it is my husband who goes there. Usually, I have other things to take care of". (Female Parent 1. SOL).

"It really is something that I do not think about. Perhaps it is because I believe that she is in a good school. I know that the academic performance at D.K. is very good". (Female Parent 4. D.K.).

"It has never crossed my mind to visit my daughter's school. But I talk to some of the teachers when we meet in town or other places". (Male Parent 3. DK).

It is argued (Tubbs, 1988) that change can take place only when there is communication and a sense of belonging between concerned parties and that the lack of communication is an obstacle to enhancing a common sense of values. In this case, the lack of visits to their daughters' schools may have become an obstacle to the parents' and schools' common factor of providing equal and quality education for girls.

Generally, as is indicated by some of the preceding quotes, both female and male parents were not only eager to educate their daughters, but also to educate them in schools that had good academic achievement record. The parents did not reflect any form of gender insensitivity towards the education of their daughters. They were keen, even to send the girls to boarding schools which, according to Gordon (1994), some parents did not want to send their daughters to for fear of possible moral or physical danger. A possible explanation to this is provided by Mwansa (1995), that parents see their children's education not as a sacrifice, but an investment from which they would profit later. Another possible explanation is that gender attitudes improve with education (Graham-Brown, 1991). This was seen in this study whereby the parents at D.K. who were better educated, had more dialogue with their daughters than the parents at Soltech (who were less educated).

It can however be said from the findings of this study that the sex of a child may no longer be said to be as relevant in a parent's choice over the education of the child as previously was the case. It has been argued by Booth et al (1995:89) that in Zambia, even poor parents have devoted an average of 3% of their monthly expenditure on education compared to 1% for medical charges and that increased educational charges have not changed parents' attitudes towards education. This study revealed that the poor parents adopted various coping strategies in order to send their children to school. Children were sent to school with the minimum

money to pay for the most necessary requirements. Some parents left out those requirements that could wait or those that could be done without. Other parents negotiated with head teachers to delay in paying the school fees or to pay in installments.

It is worth noting that the belief that girls are less capable of good academic performance than boys did not emerge from the parents' responses. As one parent stated:

> "I have never thought I should have more boys than girls. In fact, my girls are doing much better in school". (Male Parent 5. D.K.).

Much as it may be argued that parental expectations affect girls' education negatively (Maimbolwa-Sinyangwe and Chilangwa, 1995), these expectations least included the girls' academic capabilities. The parents' positive opinion about their daughters' academic abilities also extended to the teachers. The majority (80% at Soltech and 70% at D.K.) said they did not mind the sex of their daughters' teachers, as long as they were effective. One of the parents even preferred female teachers to male teachers and stated thus:

> "I would prefer a teacher that is knowledgeable. In fact, I would want a female teacher so that she can be a role model". (Male Parent 1. D.K).

Even the one parent that preferred male teachers for his daughter did not think female teachers were less effective merely because of their sex. He stated:

> "I prefer my daughter to be taught by male teachers because women have many excuses for not reporting to school ... not because they are not intelligent". (Male Parent 4. SOL).

Although the parents' opinions about the academic capacities of girls and the professional adequacies of female teachers were positive, the majority of the girls themselves at Soltech and a few at D.K. thought that as girls, they could not perform as well as boys. The majority of the

girls also preferred male teachers and had other negative opinions about themselves, some of which are discussed later in this chapter. Since the parents did not think that girls were incapable of better academic achievement than boys, the negative self image of the girls was therefore probably an effect of other gender stereotypes by the parents and the wider society that generally portray girls as subordinate to boys.

EXTENT TO WHICH GIRLS CONSULTED THEIR PARENTS FOR ACADEMIC ASSISTANCE

Table 4.5. Percentage distribution of girls showing which person they consulted most according to the nature of the problem.

	SOLTECH						D.K.					
	Academic Problem		Financial Problem		Other Problem		Academic Problem		Financial Problem		Other Problem	
Person consulted	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)
Both parents	0.0	10.0	11.1	33.3	4.4	0.0	4.4	0.0	42.2	26.7	17.7	6.7
Female parent	6.7	6.7	26.7	10.0	57.8	0.0	15.5	0.0	22.2	16.7	24.4	6.7
Male parent	4.4	16.7	62.2	43.3	2.2	36.7	6.7	6.7	35.5	36.7	8.9	30.0
Teacher	24.4	46.7	0.0	0.0	11.1	20.0	46.7	76.7	0.0	6.7	17.8	30.0
Friend/Other	64.4	20.0	0.0	13.3	24.4	43.3	26.7	16.7	0.0	13.3	31.1	26.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Number of cases	45	30	45	30	45	30	45	30	45	30	45	30

Source: Interviews with female pupils

For academic assistance, 4% of the girls at Soltech consulted male parents and 7% consulted female parents. At D.K., 7% of the girls consulted male parents compared to 16% for the female parents. This shows that in both schools, the girls, where possible, consulted their female parents rather than male parents. This was despite the male parents' higher levels of educational attainments.

Girls who did not consult their mothers said it was because female parents had either lower levels of education (49% at Soltech and 24% at D.K.) or despite their education, female parents were not able to deal with the academic problems, (30% at Soltech and 19% at D.K.) Others, (21% at Soltech and 45% at D.K.) said female parents were too busy with other commitments. At D.K., some girls (12%) said female parents would refuse to help if asked to (see Table 4.5).

Some male parents were also not consulted because of low educational level (41% at Soltech and 29% at D.K.); because they were committed with other work, (7% at Soltech and 24% at D.K.) or because they were incapable of dealing with academic problems (19% at Soltech and 21% at D.K.). However, male parents were also seen to be not easily approachable and were distant (29% at Soltech and 26% at D.K.). Some girls at Soltech (5%) said they were simply afraid of their fathers. For instance, one girl at D.K. revealed that she made requests from her father only through her mother. Another girl at Soltech stated:

> "It is difficult to consult my father. I am not used to him. He doesn't like talking very much and when you talk to him, you have to be very steady". (Girl 28. SOL).

The situation of girls may thus be defined by what Kabira et al (1994) describe as a warrior culture in Africa that inhibits male contact with females. Kankasa-Mabula and Chondoka (1996:25) elaborately explain this thus:

> "In the household, it is against cultural norms for the girl child to be free with her father or male relatives ... The educational implication is that the girl child will not ask her father or male relatives for academic assistance for fear of contravening taboos taught to her at the initiation ceremony. However, more mothers than fathers are illiterate and unable to help the girl with school work."

Just as pupils would be expected to improve their academic performance if they had more access to teachers, so would they if they had more access to their parents. FAWE (1996) argues that only if parents initiate dialogue with their children would girls take it from there

and engage in subsequent dialogue with their parents whenever it is necessary. Cultural barriers were therefore preventing girls from contact and dialogue with their male parents.

In some cases, the cultural barriers at home could also have been projected to the girls' contact and dialogue with male teachers at school. A teacher at D.K reflected this in the following statement:

> "Boys consult me more because girls are conscious of their sex and the cultural gap that this is associated with. For example, girls are afraid of talking to male teachers fearing what others will think of or say. A teacher will have to be very observant in order to see that a girl has a problem". (Male teacher 2.D.K.)

Fewer girls at Soltech (11%) consulted their parents, whether female or male than at D.K. (27%). This is probably explained by the lower educational attainments of the Soltech parents which according to Ezewu (1983) and Mwansa (1995) affects gender relations with their children. It is therefore also normal for the children of such parents to have negative gender relations, even at school.

EXTENT TO WHICH GIRLS CONSULTED THEIR PARENTS FOR FINANCIAL ASSISTANCE

For their financial requests, 27% of the girls consulted their female parents compared to 62% for the male parents at Soltech. At D.K., 22% consulted their female parents while 36% consulted male parents. The girls' need for funds therefore cuts across cultural barriers that restrained them from consulting their male parents for academic assistance. Following the argument by Kabira et al (1994), this is because society brings up girls to regard male parents as the providers in the home. This argument is strengthened by the girls' responses regarding who was paying for their education. Of the girls with both their female and male parents in gainful employment, the majority in each school said it was their male parent that paid for their education. Some girls admitted that their education was paid for by both their parents only

after further questioning. Table 4.6 below summarises the girls' responses stating which parent paid for their education.

Table 4.6 Percentage distribution of girls that reported which parent was paying for their education despite that both parents were paying.

PARENTS PAYING FOR EDUCATION	SOLTECH	D.K.
Both parents	22.2	30.4
Female parent	16.7	17.4
Male parent	50	34.9
Others	11.1	17.4
Percentage total	100	100
Number of cases	18	23

Source: Interviews with female pupils

THE EXTENT TO WHICH GIRLS CONSULTED THEIR PARENTS ABOUT OTHER ISSUES

For problems other than academic or financial, more girls consulted their female parents (58% at Soltech and 24% at D.K.) than their male parents (2% at Soltech and 9% at D.K.). Of these, the majority, 81% at Soltech and 73% at D.K. said they consulted their female parents concerning those problems for which they could not consult their male parents such as body lotion or underwear. Again, the larger number of girls at D.K. that consulted their male parents could be explained by more positive gender attitudes resulting from higher levels of education attained by male parents.

GIRLS' OPINION ABOUT CO-EDUCATION

The majority of the girls at Soltech (85%) preferred co-education to single-sex schools. Of these, the majority (55%) said co-education enabled them to seek academic assistance from boys. The rest simply saw it as good for interaction between girls and boys. At D.K., the majority of the girls (80%) preferred co-education. Most of these (69%) said it allowed them to

interact with pupils of the opposite sex. The remainder said co-education encouraged competition. The opinions of the girls at D.K. about co-education reflect more positive gender attitudes than those at Soltech. This difference in attitude between the girls in the two schools emerged further through their choice of who they preferred sitting next to in class.

CHOICE OF SITTING PARTNER IN CLASS

Almost all the girls at Soltech (91%) preferred sitting next to a boy in class. This included 43% of those who said they did not like co-education. Of those that preferred sitting next to a boy, the majority (68%) said it was in order to get assistance from boys because males were more intelligent than females. Others (20%) said they did not like sitting next to fellow girls because they talked a lot while 10% said girls were jealous of other girls. The rest (2%) said co-education allowed for interaction between female and male pupils. At D.K., fewer girls (36%) preferred sitting next to a boy. Of these, 44% said boys were more helpful while 31% said boys were more intelligent. Others (19%) said sitting with boys compelled them to work harder and the rest (6%) said conversations with boys were more constructive.

The girls' responses in both schools conveyed some cultural images that lable females as academically inferior and especially in science and mathematics (Duncan, 1989; MOE and UNICEF, 1998). Duncan (1989:14) explains that, "such inferiority may be conceived in physical, psychological or intellectual terms ... and shapes the attitudes, values and self-images of the girls." This inferiority was more prominent among the girls at Soltech where most of them saw in co-education the opportunity to seek academic assistance from the boys unlike their counterparts at D.K. who saw it more as an opportunity to mingle with males. The same applied to their reasons for sitting next to boys. The difference in the attitudes of the girls in the

two schools can once more be explained by the difference in their socio-economic backgrounds.

The more positive self-image of girls at D.K. may also have been the result of their better academic ability as is reflected by a statement by one female teacher:

> "Girls in this school rarely sit next to boys. They are a proud lot that want to show that they can also perform well" (Female teacher 3, D.K.).

Because of their poor academic performance, the girls' self-image at Soltech was affected negatively.

GIRLS' OPINION ABOUT FEMALE TEACHERS AND THEIR OWN STATUS AS GIRLS

The majority of the girls, (78% at Soltech and 70% at D.K.) preferred male teachers to female teachers whom they perceived as less effective than their male counterparts as reflected in the following statements. The boys were not any different in this opinion:

> "Male teachers are good in maths ... female teachers are not supposed to teach maths because it is a difficult subject". (Girl 16. SOL).

> "Female teachers don't explain fully, especially when they are expecting". (Girl 21.SOL)

> "Female teachers are shy. They cannot teach certain topics in Biology the way male teachers teach." (Boy 15. DK)

> "Female teachers are very lazy. You can see this through the results (poor academic performance) of the pupils they teach" (Male 20. DK)

Some of the pupils' negative opinions about their female teachers were derived from the teachers' expected domestic gender roles:

> " I have seen some female teachers come with their babies to school. How can they teach like that? That is why I do not like to be taught by a woman". (Male 13. SOL).

> "Males are ever present (never absent from work as is the case with female teachers)". (Girl 10.SOL)

"Female teachers go on maternity leave or stay home to look after a sick child ... it is not possible for males to look after children". (Girl 25. SOL)

Although most of the girls' opinions about female teachers were negative, the same did not apply in relation to what they thought about their own status as girls. Ironically, the majority of them, (62% at Soltech and 80% at D.K.) preferred to be female than male. As was expected, none of the boys wished they would have liked to exchange sex (or gender) roles for that of girls. The minority of the girls who wished that they had been born boys gave some interesting reasons. Some of the reasons related to physical ability:

"I've (at times) wished I was a boy, with muscles so that I file my metal very fast during metal work" (Girl 23.SOL).

"Boys know how to hold a slasher properly" (Girl 14.DK).

Some of the reasons pertained to domestic gender roles:

'Boys have more time to read". (Girl 6.DK)

"Because my mother tells me that I am a girl so I have to stay at home and work." (Girl 20.SOL)

Other reasons related to academic ability and particularly concerning mathematics:

"If I was a boy, I would do better in maths". (Girl 43. SOL).

"I began to wish I was not a girl when a boy in our class had the highest marks in maths". (Girl 36. SOL).

"Girls are always running after boys to ask for assistance in mathematics" (Male 29. SOL)

The girls' opinions about female teachers and their attitude towards their own sex once more reflected gender stereotypes that make girls see themselves as inferior. Again, this negative attitude towards themselves was more prominent with the girls at Soltech who were of lower socio-economic status than their counterparts at D.K.

While it is important that the implementation of new gender policy should focus on the education-system, it is also important that gender-sensitisation programmes should include parents as well. This is because the socio-cultural backgrounds of the girls play an important role in moulding the girls' beliefs and practices. Any gender-sensitisation programmes elsewhere would not be effective without including the parents to whose homes the girls keep go.

This chapter has examined the demographic and family characteristics of the girls at Soltech and D.K. Generally, girls in both schools were younger than the boys. This was because girls experienced faster physical growth and were therefore enrolled earlier than boys. The girls at D.K. were younger than girls at Soltech because the latter were affected more by interruptions in their schooling.

More of the parents at D.K. had attained higher levels of education than those at Soltech. It was also found that more female parents in both schools had attained lower levels of education than male parents. Therefore, girls at D.K. were more likely to have had more positive attitudes and values regarding their education than those at Soltech. Because girls in both schools were closer to their female parents than to their male parents, female pupils were more likely to have negative attitudes and values regarding their education since female parents were generally less educated than male parents.

In both schools, less female parents than male parents were in the high income-earning group. The majority of these were at Soltech. Therefore, the majority of girls came from homes that lacked female parent role models who were in high income jobs.

The parents, irrespective of whether they were educated or not or whether they were in high income group or not, had very positive attitudes towards the education of girls. However, the parents were generally ignorant about their daughters' everyday school experiences and at times had wrong information about the schools. Generally, cultural inhibitions of male contact with females were maintained. Due to gender stereotyping of roles, each parent associated himself/herself only with certain problems, even when the other sex parent was more capable of solving them. Some girls in both schools regarded themselves as academically inferior to boys because of their sex. For this reason, the majority of the girls at Soltech and a few at D.K. preferred to be in co-education schools so that they could seek academic assistance from boys.

CHAPTER FIVE

GIRLS' ACCESS TO TECHNICAL SECONDARY SCHOOLS

This chapter examines the extent to which girls have access to technical secondary schools. The chapter looks at the numbers of girls that are enrolled into these schools and compares them with the boys' numbers. The chapter also attempts to identify the type of schools that the girls are enrolled from and examines the extent to which girls have access to such facilities as furniture as well as their access to some subjects in the technical secondary school curriculum.

GIRLS' ENROLLMENT

The Table 5.1 shows the enrollment in Solwezi and David Kaunda Technical Secondary Schools.

Table 5.1 Percentage distribution of Boys' and Girls' enrollment since becoming co-educational

	SOLTECH				D.K.					
YEAR	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998
Girls (%)	3.4	9.3	10.2	13.3	5.7	10.6	14.6	14.9	15.7	15.6
Boys (%)	96.6	90.7	89.8	86.7	94.3	89.4	85.4	85.1	84.3	84.4
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Number of cases	583	603	637	656	706	756	822	852	873	896

Source: School records (Solwezi and David Kaunda Technical Secondary Schools).

D.K. became co-educational in 1993 and Soltech in 1995. Both schools started with extremely small numbers of girls who made up only 5.7% at D.K. and 3.4% at Soltech, of the respective

total school population. Girls' enrollment increased successively but marginally each year. The highest increase in both schools took place in the second year of the girls' presence in the schools. Soltech increased by 4.7% to 9.3% and D.K. by 4.9% to 10.6%. Thereafter, enrollment increased by 1% and 3% from 1996 to 1997 and from 1997 to 1998 respectively at Soltech. Similarly, enrollment increased by 4%, 0.3% and 0.8% at D.K. from 1994 to 1995, 1995 to 1996 and from 1996 to 1997 respectively. From 1997 to 1998, enrollment at D.K. decreased by 0.1%. There was therefore a steady but marginal increase in the girls' enrollment in both schools each year. This confirms findings of studies elsewhere (King and Hill, 1993; Subbarao, 1994; Mutukwa et al, 1995 and Maimbolwa-Sinyangwe, 1995) that although girls' enrollment has increased over the years, it still falls below that of boys. Soltech made the greater strides whereby in four years, girls' enrollment increased by 9.8% compared to D.K. where it increased by 9.2% over the same period and 9.9% over a period of six years.

Technical secondary schools therefore have not achieved much in terms of girls' enrollment apart from opening the schools to girls. The provincial education authorities responsible for Soltech explained that the slow enrollment rates for girls were meant to assess the community's opinion because radical changes are usually resisted. The provincial education authorities responsible for D.K. said the pace of girls' enrollment was soon to increase since the introduction of girls in the school was just in its initial phase. The situation of girls' enrollment in the two schools thus confirms findings (Meena, 1992; Gordon, 1994; Prather, 1991) that the existence of institutional changes does not necessarily imply commitment to redress sexual inequalities in education. Although the Zambian national government policy aims at reaching a 50-50 enrollment rate for girls and boys (MOE, 1996), the devolution of the powers for its implementation to the Provincial Education Office has contributed to the slow

rate of progress. This suggests inadequate government and political commitment. According to Prather (1991:59):

> "Proclamations of national intent to improve female education are seldom accompanied by action oriented policy statements and programmes that are necessary to make the proclamations a reality".

As it was, and confirming the observation by Mwansa (1997), technical secondary schools are still predominantly boys' schools.

PUPILS' LAST SCHOOL ATTENDED

Table 5.2 Percentage distribution of pupils' enrolment at Soltech according to previous school attended

Last school attended and district	Enrolment	
	Girls (%)	Boys (%)
Basic schools (Solwezi)	48.9	20.0
Chawama Day (Solwezi)	20.0	6.7
Solwezi Day (Solwezi)	6.7	0.0
Solwezi Technical (Solwezi)	0.0	16.7
Maheba Sec. (Solwezi)	2.2	0.0
Mukinge Girls (Kasempa)	8.9	0.0
Kasempa Day (Kasempa)	0.0	30.0
Kabompo Sec. (Kabompo)	0.0	3.3
Zambezi Sec. (Zambezi)	0.0	10.0
Chipembi Girls (Chibombo)	2.2	0.0
Chikola Sec. (Chingola)	0.0	6.7
Lusaka Schools (Lusaka)	11.1	6.7
Total	**100.0**	**100.0**
Number of cases	45	30

Source: School records (Solwezi and David Kaunda Technical Secondary Schools).

Table 5.2 shows the schools that the sampled pupils at Soltech were enrolled from. At Soltech, 78% of the girls interviewed came from schools within Solwezi district and 9% from schools outside Solwezi district but within North Western Province. The rest, (14%) came from schools outside the North Western Province. Since Soltech was a provincial school, enrolling almost 80% of the girls from Solwezi district alone was an anomaly. This anomaly is attributed to the fact that Soltech had no boarding facilities for girls and could therefore enroll only those girls that had their own accommodation in Solwezi. Conversely, only 43% of the boys were enrolled from schools within Solwezi district. This allowed for another 43% to be enrolled from other districts in the North Western Province and an additional 13 % from outside the province. Enrollment for girls at Soltech was therefore confined to schools in Solwezi district unlike that for boys who were drawn from across the province.

A further difference was in the type of schools that the girls and boys were drawn from. Most of the girls (49%) were drawn from Basic schools compared to only 20% for the boys. Teachers at Soltech accused the Basic schools of poor academic standards. The poor quality of Basic schools is confirmed in the study by Maimbolwa-Sinyangwe et al (1995). The fact that the majority of girls came from Basic schools implies therefore that the girls who were enrolled at Soltech were more likely to be of lower academic ability than the boys of whom only 20% came from Basic schools. In addition, restriction of girls' enrollment to Solwezi district alone reduced the chances of enrolling high performing girls unlike the boys who were drawn from a wider catchment area.

Table 5.3 below shows the enrolment at D.K. Being a national school, enrolment is considered by province. The majority (58%) of the girls at D.K. were enrolled from schools within Lusaka district. For the boys, the majority (50%) came from the Copperbelt compared to 33% from

Lusaka. Therefore, more girls than boys from the Copperbelt and other provinces had lesser chance of access to D.K. The school authorities attributed this to the fact that girls from single sex mission schools were not eager to enroll at D.K. and preferred to remain in their original schools. These girls failed to adjust and asked for transfers back to their former schools. The administration explained that most of these girls who failed to adjust came from Fatima Secondary School and Ndola Convent, two mission schools for girls and which they later went back to. The major factors that affected the girls were the lack of facilities and materials such as furniture, laboratory equipment, toilets and proper food. They were also affected by the new type of relationship with teachers and male pupils, which was different from what they were used to in the mission schools.

Table 5.3 Percentage distribution of pupils' enrollment at D.K. according to province enrolled from.

Province enrolled from	**Enrolment**	
	Girls (%)	Boys (%)
Lusaka	57.8	33.3
Western	0.0	10.0
North Western	4.4	0.0
Northern	4.4	0.0
Southern	4.4	3.3
Central	6.7	0.0
Copperbelt	20.0	50.0
Eastern	2.2	0.0
Luapula	0.0	3.3
Total	**100.0**	**100.0**
Number of cases	45	30

Source: Interviews with female pupils

These findings are in line with the observations by Mwansa (1995) that co-education schooling affects girls negatively and Maimbolwa-Sinyangwe and Chilangwa (1995) that this makes the

girls opt for single sex schools where their values, attitudes and performance are positive. However, very few of the girls at D.K. (9%) said they would like to leave the school on transfer compared to 38% at Soltech. Since the majority of the girls at D.K. did not come from mission schools, it would be assumed that there may have been other factors that were influencing girls' decisions to leave co-education schools.

At D.K., Copperbelt Province ranked second, accounting for 20% of the girls' enrollment, followed by Central Province with 7%. This implies that most of the girls at D.K. came from urban schools in Lusaka, Copperbelt and Central Provinces.

Girls based in Lusaka filled up the gap left by girls from the Copperbelt Province who happened, for one reason or another, not to have enrolled enroll at D.K. Similarly, the gap left by girls that would otherwise have been selected to Soltech (had it also been boarding school for girls) were taken up by girls based in Solwezi district. This implies that for either school, the girls that replaced those girls that would initially have taken up the places were more likely to be academically less capable.

At Soltech, the problem of girls' enrollment was partly because of lack of boarding facilities for girls. The fact that the provincial and school administrations blamed this on lack of funds agrees with Kelly (1994) who argues that economic constraints are affecting girls' education. However, a few of the boys' hostels could have been turned into girls' hostels, as was the case at D.K.

THE CURRICULA OFFERED BY THE SCHOOLS

Examination of the curricula in the two schools showed that only general mathematics and biology were compulsory to both schools. The schools differed in the way they offered industrial arts, additional mathematics and science. (See appendix 2 for the complete curricula offered by each school). At D.K., allocation of pupils to the subjects was done centrally during selection of pupils after their Junior Secondary School Leaving Examinations (J.S.S.L.E.). At Soltech, allocation was done in the school after the selection. The schools also differed in how the optional subjects were allocated; the proportion of classes given to do these subjects; the emphasis on the subjects and the proportion of girls that took the subjects. At Soltech, French was phased out while religious education and history were in the process of being phased out because they were deemed not to be relevant to a technical secondary school. On the other hand, at D.K., history and French were consolidated in the curriculum. Moreover, the school was established as a national resource centre for the teaching and learning of French to the effect that the French Embassy had provided a satellite dish for French educational television. Also at D.K., a new classroom block had been built by the African Development Bank specifically for home economics, a subject that was to be introduced a soon as the responsible teacher was back from specialised training abroad.

The lack of uniformity in the curriculum of the two schools raises the question of which of them is appropriate for meeting the purpose for these schools. According to Beare (1994:187), "the curriculum, and the emphases and balances within it, is the prime vehicle for conveying the schools' colour impact". It follows therefore that depending on the emphases and balances within the curricula of the two schools, they may or may not have the desired impact on the education of girls. For example, industrial arts, mathematics and science, since they form the basis for these schools, ought to be accessible to all pupils in the school equally. Yet, these

subjects were not all compulsory. It becomes questionable whether these subjects are as accessible to girls as they are to boys and therefore, whether technical secondary schools are achieving their desired impact on the education of girls in these subjects. Under these circumstances, I proceed, to examine the extent to which girls were accessible to industrial arts, mathematics and science.

GIRLS ACCESS TO INDUSTRIAL ARTS

Industrial arts, consists of geometrical and mechanical drawing (G.M.D.), metalwork, and woodwork. G.M.D. was compulsory to those that took industrial arts and who themselves had a choice between metalwork and woodwork. Table 5.4 shows the pupils that took industrial arts at Soltech and D.K.

At D.K., out of a total of 24 classes, half (12) took industrial arts. Only those pupils that had taken and passed the subject at the Junior Secondary School Leaving Examination were allowed to take the subject. Since taking the subject at Junior Secondary School was a pre-requisite, very few girls found themselves in the technical classes. Of the total number of girls in the school, only 17%, 15%, 12% and 14% took Industrial Arts in 1995, 1996, 1997 and 1998 respectively. This was in contrast to the boys' 48%, 47%, 46% and 47% during the same respective period. Each class had a maximum of two girls or, in some cases, only one girl or, in other cases, no girl at all. On the other hand, boys numbered between twenty-nine and forty per class.

At Soltech, the subject was accessible to all except for one class of each grade irrespective of whether or not one had taken it at Junior Secondary School. Out of the 18 classes in the

school, 15 were technical classes and took industrial arts. Of the total number of girls in the school, those that took Industrial Arts constituted 100%, 96%, 90% and 76% in 1995, 1996, 1997 and 1998 respectively. This was in contrast to the boys' 84%, 83%, 84% and 84% during the same respective period.

Table 5.4 Percentage distribution of total number of pupils taking Industrial Arts in the schools

	SOLTECH								D.K.							
	1995		1996		1997		1998		1995		1996		1997		1998	
	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)
Pupils taking Industrial Arts	100.0	84.1	96.2	83.0	89.7	83.9	76.2	84.4	16.7	47.6	15.4	47.0	11.8	46.3	14.3	47.0
Pupils not taking Industrial Arts	0.0	15.9	3.8	17.0	10.3	16.1	23.8	15.6	83.3	52.4	84.6	53.0	88.2	53.7	85.7	53.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
No. of cases	20	476	54	454	58	480	67	480	12	334	13	341	17	341	21	355

Source: School records (Solwezi and David Kaunda Technical Secondary Schools).

These figures show that the girls at D.K. were less accessible to Industrial Arts than those at Soltech. Unlike at Soltech where pupils could take the subject even if they had no junior secondary school background in the subject, access to industrial arts at D.K. was restricted to only those who had taken and passed the subject at Junior Secondary School where, unfortunately, very few girls had taken the subject. While the girls at D.K. were also less accessible to industrial arts than the boys in the same school, a larger percentage of girls than boys were accessible to industrial arts at Soltech. This is attributed to the fact that less of the girls than boys were in the non-technical classes which took Additional Mathematics and Pure Science. However, as shall be discussed later in this chapter, less girls than boys actually took industrial arts because of a higher drop-out rate in the subject.

Although it was the compulsory component of the three industrial arts subjects, G.M.D. was the least accessible to both girls and boys in both schools. Many pupils dropped G.M.D. to remain with either woodwork or metalwork only. In the four years that girls had written their Senior Secondary School Leaving Examinations at D.K., 50% of the girls and 38% of the boys did not write their examination in G.M.D. At Soltech, of the first group of Grade 12 girls in 1997, none sat for the examination in industrial arts because of a 100% drop-out rate in all the three subjects. Of the second group in 1998, 84% of the girls dropped G.M.D. Of the boys, 40% dropped G.M.D. in the two years. Table 5.5 shows this situation in both schools.

The dropout rate in G.M.D. was higher for girls than boys in both schools but was even higher for girls at Soltech. This is probably explained by the fact that the majority of the girls in both schools cited the subject as the least liked. For the boys at Soltech, the subject was the second least liked after chemistry. It is however difficult to understand the situation for the boys at D.K. because G.M.D. was the most popular among the pupils that took the subject. An

alternative explanation could however be found among the teachers. Pupils in both schools attributed not liking or dropping a subject to relationship with the teachers. They dropped the subject where the teacher was boring; too strict, unfriendly, or unapproachable. A few (30%) of the boys at D.K. indicated that teachers were to blame although none said this about their industrial arts teachers.

Table 5.5 Percentage distribution of Grade 12 pupils' dropout rates at Soltech (1997-98) and D.K. (1995-98) in G.M.D.

	SOLTECH		D.K.	
	Girls (%)	Boys (%)	Girls (%)	Boys (%)
Pupils taking Industrial Arts	15.8	60.4	50.0	62.5
Pupils that dropped G.M.D.	84.2	39.6	50.0	37.5
Total	100.0	100.0	100.0	100.0
Number of cases	19	169	14	475

Source: School records (Solwezi and David Kaunda Technical Secondary Schools).

The factor of gender insensitivity among the teachers was prominently reflected in the girls' responses. The girls' labeled male teachers as particularly insensitive and made comments such as the following:

> "He makes me feel I am extra dull" (Girl 40.D.K.)
>
> "He shouts at me, even for simple mistakes" (Girl 24.SOL)

These accusations were corroborated by some industrial arts teachers' comments:

> "We should not make girls think as if life is one big joke. Then we are not teaching them. My results have been quite good and I don't want to sacrifice those for being nice and popular. I want to keep them (girls) in their place ... not treating them differently because they are girls. If they don't like to accept my being equal to them, then yes, they may drop out" (Male Teacher 7.SOL).

Another teacher asserted:

> "When you are helping girls with a problem, instead of listening and looking at the work you are helping them with, they will be looking at you. I therefore think it is a waste of time going near them (girls)", (Male Teacher 10. SOL).

Female teachers did not seem as insensitive as their male counterparts:

> "I try to help these girls as much as I can. It could be my own daughter or it could have been me in their shoes. It is only that at times, the girls do not want to heed to some of the advice from female teachers whom they label as being jealous. As a result, these girls are closer to the male teachers whose motives sometimes are questionable", (Female Teacher 3. SOL.).

> "I have no problem either with the girls or with the boys. Being a woman and especially with the introduction of 'gender issues' in the schools, I find myself looking at things in a different way from the way I used to look at them. As much as I can, I try to help the girls become good if not better pupils in this school", (Female 2. DK).

Lack of equipment also emerged as contributing factor to girls' dropping of G.M.D. at Soltech. The girls could either not afford to buy the equipment or the instruments were not available in the local shops at rural Solwezi. According to the teachers, often, the girls dropped the subject or just sat in class due to lack of instruments. The boys had an advantage because some of them had instruments from their previous schools where they had been taking technical drawing or could more easily have access to the instruments through contact with other boys.

The problem was explained further by some of the teachers of Industrial Arts as follows:

> "Equipment is a bigger problem than the subject. They (girls) borrow equipment for one lesson. The next lesson will be missed because they were not able to borrow. They have only got to miss one lesson to find themselves a long way behind and when they are tested, they are not able to perform well. Their interest wanes and they disappear (drop out)" (Male Teacher 11. SOL).

Another factor that could have contributed to the girls' low participation in G.M.D. was the teachers' low opinion about girls' ability to take the subject. Although the teachers did not

express this explicitly, this opinion was implied in some of their comments as is reflected by the following:

> "For the majority of girls that are enrolling for G.M.D., they see their stay here as fun time. If you start pushing them so that they settle down, they tend to leave the classes" (Male Teacher 7.SOL).
>
> "This subject is new to the girls. It needs a lot of dexterity and imagination" (Male Teacher 9. SOL)

There were no female Industrial Arts teachers to ask for opinion on the matter of girls and Industrial Arts but the statements by the male teachers are suggestive of the belief that G.M.D. was more suitable for boys than girls. Consequently, consciously or unconsciously, overtly or covertly, the teachers may have been portraying a negative attitude to the girls, thus contributing to their dropping out of the subject. According to Whyte et al (1985:82), girls' participation in industrial arts is affected by teachers' behaviour towards the girls:

> "Since many girls are likely to be hesitant about entering a male dominated subject, any opposition or discouragement from teachers will tend to dampen their interest and deter them from choosing or continuing the subject."

While some sources (MOE and UNICEF, 1998) have accused girls of lacking appropriate attitudes and aptitudes in subjects like G.M.D., the above teachers' comments suggest that the problem may stem from some of the teachers rather than the girls themselves. Mulopo (1987) has pointed out that teachers have at times made girls feel out of place and unwelcome in certain subjects. According to Whyte et al (1985), the girls' decision about whether to take industrial arts is influenced among other factors, by the advice and encouragement by teachers. To this end, Kane (1996) postulates that issues of girls' education will be best tackled if teachers developed appropriate attitudes.

The restriction of industrial arts at D.K. to only those that had done technical drawing at Junior Secondary School may be unnecessary since this was not the case at Soltech. Besides, since the girls' academic ability at D.K. was better, they were more likely to perform better in the subject than the girls at Soltech. On the other hand, the establishment of a boarding school for girls at Soltech would expand their catchment areas to districts other than Solwezi. This would increase the chances of enrolling higher performing girls and therefore lessen the girls' rate of dropping out due to poor performance.

GIRLS' ACCESS TO GENERAL MATHEMATICS

At both schools, general mathematics was compulsory and no girl had dropped the subject. As far as general mathematics is concerned therefore, the girls were not trailing boys, contrary to an observation by the United Nations (1995). Even at Soltech where mathematics was not very popular and ranked fifth with 9% after English (31%); Biology (22%); Chemistry and Geography (11%), the girls did not drop general mathematics. The reason for this is summed up by a teacher at D.K. who said girls knew the importance of mathematics in their would-be careers. This is in conformity with Duncan's study (1989) in which she found that there was a strong relationship between girls' liking a subject and its perceived importance. This explains why Whyte et al (1985) say that if teachers actively encourage girls and stress the importance of qualifications in certain subjects for further education and employment, then more girls would consider such subjects as viable options.

GIRLS ACCESS TO ADDITIONAL MATHEMATICS

All those pupils that did not take industrial arts in both schools belonged to the non-technical classes. At D.K., this group made up 85% of the girls and 53% of the boys. These classes had

the option of taking additional mathematics or literature in English. Of this group, 47% of the girls took additional mathematics while 53% took literature in English. Of the boys, 49% took additional mathematics while 51% took literature in English. Although the difference was marginal, more boys took additional mathematics than girls as is shown in Table 5.6.

Generally, girls' participation in additional mathematics at D.K. was competitive. This could be attributed to their generally higher academic ability when compared to the girls at Soltech. According to the head teacher at D.K., the official selection for boys was compromised in order to admit those with a background in industrial arts. The girls' selection was on the other hand not compromised because technical drawing was overwhelmingly a male subject at Junior Secondary School. The girls at D.K. were consequently almost equally represented as the boys in additional mathematics. Moreover, the girls were concentrated in the non-technical classes that could take additional mathematics because very few had a background in technical drawing. This increased the girls' chances of taking additional mathematics than the boys. Most importantly however, being aware of their good academic ability, the girls were not afraid to take up the subject even though it was generally considered difficult. Duncan (1989) argues that girls' participation in a subject is dependent on their ability to cope rather than the difficulty of the subject. Worell and Stilwell (1981) and Maimbolwa-Sinyangwe (1985) also believe that high-performing pupils develop high self-esteem and are likely to persist in a subject.

Table 5.6 Percentage distribution of total number of pupils taking Additional Mathematics in the schools

	SOLTECH								D.K.							
	1995		1996		1997		1998		1995		1996		1997		1998	
	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)
Pupils taking Additional Maths	0.0	67.8	0.0	73.2	28.6	70.6	40.0	70.8	38.9	31.5	37.7	39.6	37.5	46.6	47.1	49.4
Pupils not taking Additional Maths	0.0	32.2	100.0	26.8	71.4	29.4	60.0	29.2	61.1	68.5	62.3	60.4	62.5	53.4	52.9	50.6
Total	**0.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
No. of cases	0	87	2	93	7	92	20	89	108	368	114	384	120	395	119	401

Source: School Records (Solwezi and David Kaunda Technical Secondary Schools).

Although Duncan (1989) states that the exact nature of the direction of influence between attitude and performance is not clear, it cannot be dismissed that teachers at D.K. encouraged the girls to take up additional mathematics based on their knowledge of the girls' ability to cope.

At Soltech, girls' participation in additional mathematics was very low and was worsened by high dropout rates in the subject. (See Table 5.6). The non-technical classes were not given an alternative to additional mathematics, as was the case at D.K. In the first two years of girls' presence at Soltech, not a single girl took additional mathematics. In the third year (in 1997), 29% of the eligible girls took additional mathematics compared to 71% of the boys. Girls' participation increased in 1998 to 40% but it was still lower than that for boys, (71%). The high drop-out rates of girls in additional mathematics at Soltech can be attributed to the girls' poor academic performance in the subject. The problem was worsened by the girls' own negative attitude towards the subject. They thought mathematics was more suitable for boys. This is reflected in this comment:

> "I dropped additional mathematics because it was too difficult for me... the teacher told me that I was doing better than many of the boys in my class and that I was a coward" (Girl 2.SOL).

Of the first group of Grade 12 girls at Soltech, no girl participated in additional mathematics. Of the second group, only two participated. As has been discussed previously, the participation of the girls at Soltech in additional mathematics would be improved by creating boarding places for girls. Otherwise, as long as girls remain day-scholars, Soltech will continue to enroll girls from Solwezi district only thereby reducing the opportunity to bring in higher performing girls from other districts in the North Western Province. Moreover, as has been discussed earlier in this chapter, the majority of the girls that were enrolled into Soltech

came from the academically low-performing basic schools. This too would be prevented if enrollment were widened to other districts.

GIRLS' ACCESS TO SCIENCE

At D.K., all the pupils were required to take pure science, which is considered more difficult than general science. At Soltech, only one class of each grade took pure science. These were the non-technical classes that also took additional mathematics. Admission to these classes depended on one's performance in general science and mathematics at the Junior Secondary School Leaving Examination. The rest of the school was required to take the less difficult general science. Table 5.7 shows the pupils that took pure science at Soltech.

Table 5.7 Percentage distribution of pupils taking Pure Science and percentage of those who had dropped Pure Science at Soltech

	1995		1996		1997		1998	
	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)
Pupils taking Pure Science	0.0	72.4	100.0	69.9	57.1	76.1	45.0	80.9
Pupils that had dropped Pure Science	0.0	27.6	0.0	30.1	42.9	23.9	55.0	19.1
Total	**0.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Number of cases	0	87	2	93	7	92	20	89

Source: School Records at Solwezi Technical Secondary School).

Fewer girls than boys took pure science except in 1996 when all the girls in the technical classes took the subject. Even then, these were only two girls. The girls' lower representation was because of their poor academic performance at the Junior Secondary School Leaving Examination or (in certain cases) in a test given for the purpose of placing the pupils in the

appropriate class. Pupils that did not take pure science in the non-technical classes were those that had dropped the subject. Therefore at Soltech, 55% of the girls compared to 19% of the boys in 1998 dropped pure science. In 1997, 43% of the girls and 24% of the boys dropped pure science. In 1995, there were no girls in the pure science class.

Although all the girls at D.K. took pure science, the school authorities stated that the girls' academic performance was declining. For this reason, the school planned to establish a class for these girls (and a few boys) who would take the more manageable General science instead of Pure Science. The decline in the girls' performance could be attributed to a laxity in the selection process that admitted into the school, substantial numbers of girls with lesser academic ability. Thus, laxity in enrolment procedures brought in more girls than boys who did not merit selection. This led to labeling the girls rather than the boys as stereotypically weak in academic performance. Biology was compulsory to all the pupils in both schools. No girl was recorded to have dropped the subject. This is probably because it was the most popular subject at D.K. and the second most popular subject at Soltech after English. Biology was rated fifth at Soltech and seventh at D.K. among the boys.

GIRLS' ACCESS TO SCHOOL FURNITURE

At Soltech, furniture (chairs) was more accessible to the boys. (Refer to Table 5.8). After them, those that were in Grade 12 had an advantage as senior pupils. Therefore, some girls that were in Grade 12 could have more access to the furniture than some boys. Pupils that were boarders also had an advantage because they arrived earlier simply because the dormitories were within the school premises. Therefore, the girls were generally disadvantaged because all of them were day scholars and often arrived in school later than those boys who were boarders.

Table 5.8 Percentage distribution of pupils that were reported to have more access to classroom furniture.

	SOLTECH		D.K.	
Pupils with more access to furniture	Girls (%)	Boys (%)	Girls (%)	Boys (%)
All pupils equally	2.2	13.3	57.8	60.0
Male pupils	44.4	40.0	20.0	16.7
Senior pupils	28.9	23.3	8.9	10.0
Prefects	0.0	0.0	13.9	13.0
Those that are assertive	11.1	16.7	0.0	0.0
Boarders	13.3	6.7	0.0	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**
Number of cases	45	30	45	30

Source: Interviews with female pupils

For most of the girls to have access to the furniture, they had to leave their homes earlier than usual:

> "We struggle for the chairs and have to go round the classes to look for one. Girls are able to get the chairs because they rush to come to school." (Boy 13. SOL).

Even when they reached school earlier and managed to acquire chairs, some of the girls still lost them to some of the boys:

> "Sometimes, the boys threaten us. They get our chairs because they are rough and they threaten us. They think that this school is theirs alone" (Girl 32.SOL).
>
> "Boys come in (the classroom) slowly and boast that they can get the chairs any time, even if they come late" (Boy 28.SOL).

Some of the boys, especially those that were in the junior classes (Grade 10) were also victims of the harassment. One boy lamented thus:

> "The chairs and desks are got by the senior boys. You cannot get your chair (back) because they will fight you" (Boy 9.SOL).

Not all the girls however gave away their chairs to the boys and learned to be assertive:

"You have to be talkative. Otherwise, the boys will grab your chair" (Girl 5.SOL).

"Some girls use sarcastic language and threaten others. Even some boys are afraid of them." (Boy 19.SOL)

At D.K., furniture was more or less equally accessible to both girls and boys. There were instances however where a few boys asserted their dominance. In fewer instances, prefects used their authority to get the chairs.

REASONS FOR GIRLS' UNEQUAL ACCESS IN TECHNICAL SECONDARY SCHOOLS.

In this part, various reasons are given to explain the unequal access to the school, curriculum and furniture that girls in technical secondary schools experienced.

The Problem of Economic Constraints

The World Bank (1991) and Kelly (1994) argue that the constrained economies of countries like Zambia are affecting the education of girls negatively. The provincial education authorities for both schools as well as the respective head teachers acknowledged that funding in the schools was inadequate and was affecting the general effectiveness of the schools. Generally, this problem is beyond the control of all other education stakeholders. In a situation where furniture or other facilities are inadequate, girls are more likely to be victims of male harassment and domination thereby having less access to the furniture. The little available furniture or facilities therefore, as much as possible should be protected from such vices as wear and tear, vandalism and theft. In turn, this would avail the girls more opportunity to use the furniture.

Financial constraints were also responsible for the lack of boarding and adequate toilet and ablution facilities at Soltech. The first group of girls enrolled in the school used a toilet together with the female teachers. This one toilet was not only inadequate for the girls, but was also not easily accessible because it was located inside the staff room which the girls feared and felt embarrassed to enter. Because of this and because the female teachers did not want to share a toilet with their pupils, the girls were given a block of toilets that had originally been used by boys but had until then been out of use due to lack of water. The toilets still lacked water; a problem that was economic, although it was general to the school. While the majority of the boys in the school relieved themselves in the bush surrounding the school, the girls could not do so due to modesty and for fear of harassment. At D.K., the girls had a block of eight toilets at the school section and two other such blocks that included ablution facilities at the dormitory section.

The Problem of Co-Education

Part of the girls' lesser access to the school curriculum and furniture may be attributed to the fact that the technical secondary schools are co-educational. Kelly (1994) argued, that co-education perpetuates the domination by boys. The same may be said about the two technical secondary schools in this study, which may be described by what Byrne (1978:133) refers to as "boys' schools with girls in them". It is in this regard that Mwansa (1997) points out that the boys regard the girls in technical secondary schools to be intruders.

Some of the girls' responses seemed to confirm this:

> "I don't like co-education because boys like quarrelling. They say we don't want to see you girls in this school. Go back where you came from" (Girl 39.SOL).

"I don't mix with boys because sometimes, they don't want to mix with girls" (Girl 29.SOL)

Some of the boys' responses revealed what they thought about the girls and may explain some of their behaviour towards the girls:

"These girls are just messing around with any boy that approaches them. They have disturbed the boys. A technical secondary school is supposed to be only for boys, who come here only for education and nothing else...even with single-sex classes, we would still mix during break. The only solution would be to remove either the girls or the boys out of Soltech" (Boy 21.SOL).

"Girls think they are presidents ... I keep away from them ... they should go away if possible" (Boy 7.SOL).

"You cannot ask a girl a question because she will know that you don't know. If I was the headmaster, I would chase the girls and make Soltech for boys only again" (Boy 19.SOL).

Some of the teachers' responses agreed with the thoughts that were expressed by the pupils:

"Girls have not been accepted by the boys; especially the Grade Twelves. In each class, the girls sit isolated from the boys. The girls want to sit with the boys but the boys don't want this" (Female Teacher 5.SOL).

"When the girls first came, they were greeted with skepticism - the boys jeered and shouted at the girls. They felt that the girls were intruding". (Male Teacher 2. SOL).

The situation of girls at D.K., as reflected by the responses, was better than at Soltech. Although harassment by the boys also existed at D.K., it was to a lesser extent.

"Mixing with boys? Not really! Some of them claim to be monks and don't talk to girls". (Girl 5. D.K).

Only one boy expressed explicit dissatisfaction about the presence of girls at D.K.:

"(As Headteacher) I would also recommend for the chucking of the APU from the school and even the girls because these two groups of people have brought the standards of the school down" (Boy 19. D.K.)

The school authorities at D.K. explained that stiff punishment was meted out for harassment of any form. For example, some prefects had been removed of their positions for failing to stop harassment. This probably explains the fewer instances of harassment that emerged from the pupils' responses. Nevertheless, domination of girls by boys also existed at D.K. as is reflected in this comment:

> "As Headmaster of this school, I would tell the girls that they should feel free and regard everything as belonging to them also". (Girl 25.D.K.)

If co-education is dominated by boys and, as King and Hill (1993) argue, is counter-productive, then the introduction of girls into technical secondary schools that were initially single sex boys' schools becomes questionable. This statement by a teacher concerning what he thought about the issue thus seems justified:

> "The government should have improved the existing girls' schools into technical secondary schools and taken the girls there rather than integrate them into existing (technical secondary) schools" (Male Teacher 10. D.K.).

Given that the constrained Zambian economy cannot fund education adequately and, given that government cannot afford building new schools, the introduction of girls into the former boys' schools becomes justified. In this context, the issue is not so much the establishment of girls' single-sex technical secondary schools. Rather, the issue is whether the co-educational technical secondary schools recognise, in thought as well as in deed, that "equality" means "the same" for both girls and boys. The negative experiences that the girls in technical secondary schools may be going through are not an effect of co-education technical secondary schools. Instead, they are an effect of the lack of administrative means to ensure gender equality in the schools. In this regard, Byrne (1978) argues that the experiences of girls in schools are understood by a deeper search in the attitudes and practices of administrators of education at all

levels right down to the teachers as well as the pupils, including the girls themselves. This brings us to another factor that may have been affecting girls' access to the schools' offerings. This is the factor of policy makers and administrators.

The Problem of Administrative Interventions

The administrative measures that a school institutes can have negative or positive effects on pupils' experiences. For example, the artificial shortage of chairs at D.K. would have been unnecessary if the A.P.U. pupils were made to return them to their original classrooms after use. Similarly, the lack of administrative measures to control discipline at Soltech should have contributed to reducing the girls' access to the chairs. According to the MOE and UNICEF (1998), any indiscipline in school is bound to affect girls more negatively than boys. The lower enrollment figures for girls were also purely an administrative problem at school, provincial and national levels. This was truer where, after the official selection, head teachers enroll pupils according to their whims.

The lack of administrative interventions to ensure gender equality was also reflected in the girls' participation in the running of the schools as prefects or monitors. In both schools, no girl was occupying the position of class monitor. At D.K., this was despite that this position and that of vice-monitor were elective and that the school policy required that if a pupil of one sex occupied one position, the other position would go to a pupil of the opposite sex. By defacto design, girls were elected only to the positions of vice-monitor. Either they were not nominated to the positions of full monitor or, if they were nominated, they were not voted for. One teacher remarked thus:

> "Monitors are boys and vice-monitors are girls...it is not a school rule but it comes spontaneously through elections "(Female Teacher 4. D.K.)

This could have had the effect of reinforcing gender stereotypes in the school as was reflected in this statement:

> "Girls usually don't want to volunteer. They take it that they must be under boys" (Female Teacher 7. D.K.)

At Soltech, the school policy required that there be, in each class, a girl and a boy as monitors as well as a girl and a boy as vice-monitors. This was the case for all those classes that had female pupils except for three. Of these three, the boys in the first class had demanded that only boarders could be monitors or vice-monitors. Therefore, this ruled out the girls by virtue of their being day scholars. The boys in the second class refused to have a female monitor or female vice-monitor because girls were thought to have no authority to control the class:

> "The whole class refused to have girls as monitors because they said girls are not listened to (Girl 41.SOL).

This reflects the extent to which boys in the school were dominant and which made the only girl in the third class refuse to be monitor:

> "I refused to be monitress for my class. The boys make a lot of noise and insult. I saw what was happening to female prefects..."(Girl 6. SOL).

At D.K., the four positions of Boarding Captain, Entertainment Captain, Sports Captain and Preventive Maintenance captain were officially reserved for, and held by male pupils. There were two positions of Deputy to each of these four positions, one of which was reserved for a female pupil and the other for a male pupil. At Soltech, these positions were fairly distributed between female and male pupils apart from that of Boarding Captain, a position for which girls were not eligible because they were all day scholars.

At Soltech, just as some female class monitors were thought not to have effective authority, so were some female prefects. Responses from some of the female prefects suggested that their authority was watered down for fear of harassment:

> "I have stopped going into some of the classes. The boys there are too unruly...usually, I leave the male prefects to go for offenders in these classes ... I don't want to be insulted" (Girl 28.SOL).
>
> "We don't punish some of the boys because we fear being beaten in the compound. Even some male prefects fear them" (Girl 12.SOL).

As far as the Head boy at Soltech was concerned, female prefects were superfluous:

> "I once suggested (to the Deputy Head teacher) that we do away with female prefects. There is nothing they are doing. They don't want to see themselves as part of the school. It's just their nature" (Boy 1.SOL).

At D.K., the situation was different. The prefects there had a lot of authority because of support from the school administration. This included the female prefects. The authority of the prefects at D.K. was such that even the boys did not easily get away with indiscipline:

> "There is also a tendency of prefects getting away with everything with the administration. When a prefect takes you to the admin(stration), they don't listen to the side of your story, they just cane you. That's abuse of office" (Boy 9.D.K.)
>
> "The prefects in this school are arrogant and bigheaded. They have been given too much authority" (Girl 16.D.K.).

Although the prefects at D.K. wielded a lot of authority, the female prefects, to an extent, were seen as having less authority:

> "The female prefects are not feared as much as the boys. Even the Head boy has more status than the Head girl because he is male. Everyone respects the Head boy more than the Head girl" (Male Teacher 2.D.K.).

One aspect worth mentioning about Soltech is the corporal punishment that the girls underwent. While corporal punishment is permissible, it is supposed to be administered by a teacher of the same sex as the offending pupil and in the case of girls, should be administered on the palms. The girls at Soltech were however caned on their buttocks by male teachers:

> "Teachers beat us on our buttocks. I complained to the Deputy Head but he said it was a school rule" (Girl 3.SOL).

The school authorities were aware of the problem and had on a number of occasions asked the teachers to desist from this. The request was however not followed up, probably for fear of antagonising teachers or compromising discipline in the school. As a result, caning continued. For some of the teachers, caning girls on their buttocks signified gender equality:

> "Girls complain that they are caned on their buttocks by teachers who give their reason for their actions as gender equality. But I believe that punishment must be appropriate" (Male Teacher 4.SOL).

Even some female teachers saw caning girls on the buttocks as gender equality:

> "There's nothing wrong with girls being beaten on their buttocks. If we have to accept gender equality, then we must also accept all those things that go along with men" (Female Teacher 8. SOL).

While caning girls on their buttocks is not directly related to access, it goes to illustrate the extent to which the schools need committed intervention from school administrations. There is need therefore, for sensitising school administrations on gender issues and monitoring schools on a regular basis to ensure that gender concerns are redressed. The absence of measures to ensure gender equality in a school may imply among other factors, ineffectiveness on the part of the school administration. Effectiveness here is used to mean the extent to which a school's set objectives are accomplished. The ineffectiveness itself may stem from mere poor administration, gender insensitivity or lack of commitment towards gender equality.

Policy in itself is not enough to ensure gender equality. Meena (1992) argues that the existence of institutional and legal changes may not necessarily imply improved status of girls or that government is committed to ameliorating the position of girls. While implementation of strategy may be hindered by such factors as funding, it should also be recognised that at times,

policy makers themselves lack commitment (Gordon, 1994; Prather, 1991). Another problem concerning policy makers and gender activists may be best explained by these two statements from some teachers:

> "Many teachers oppose gender issues among other things, because the promoters themselves leave much to be desired" (Male Teacher 13.D.K.).
>
> "Gender equality is good only in theory" (Male Teacher 11.SOL).

There is therefore need for policy makers and administrators to show in their own personal lives that they not only support but also practice gender equality. Any practices to the contrary are likely to have negative impact.

The Problem of Teachers

The role of teachers in a school cannot be overemphasised. Being the person on the spot and one that spends a lot of time with the pupils, a girl or a boy would be greatly affected by the behaviour of a teacher. Although it may be said that some teachers' attitudes towards the girls were positive in various ways, the fact that in both schools, some girls had unequal access to furniture, positions of prefect, captain or monitor, and were subjected to other forms of gender inequality, shows that the unequal access was partly an effect of teachers' behaviour.

One factor that emerged was that some teachers made sexual advances, overtly or covertly, at the girls. At Soltech, the teacher for guidance and counseling and also one teacher admitted this:

> "Sexual harassment has been there. Some girls have approached my office about male teachers who were harassing them" (Male Teacher 2-Guidance and Counseling. SOL).
>
> "We have had cases of sexual harassment. I remember some of the teachers rejoicing when they learnt that this school would be co-educational" (Female Teacher 4. SOL)

Responses from some of the teachers about the issue, although implicit, were suggestive of sexual harassment:

> "If a teacher has to ask some pupils to help carry some books from a storeroom, why can't it be two girls and two boys instead of four girls?" (Male Teacher 5.D.K.)

> "What can you expect of a school like this one. A lot needs to done... that is all I can say" (Female Teacher 2. SOL)

Some of the girls admitted to having been harassed by male teachers:

> "He proposed (to) me but I refused. (Now), I run away whenever I see him... I am not free in his class." (Girl 26. SOL)

> "... He thinks every girl is his traditional cousin - almost hugging her. I told him that I am not his cousin ... he got annoyed but this time, he gives me a lot of respect" (Girl 42.SOL).

At D.K., a senior teacher explained that girls were encouraged to report to their housemistresses in case of any harassment by teachers:

> "In order to discourage sexual harassment, we encourage the pupils to inform the authorities at any suspicion. One or two teachers have been transferred to other schools as a consequence" (Female Senior Teacher 5 D.K.)

The teacher for guidance and counseling explained thus:

> "Sexual harassment is mainly verbal - usually at the hands of the boys rather than the teachers. Any knowledge of such is quickly brought to the attention of school authorities" (Male Teacher 8- Guidance and Counseling. D.K.)

The statements by the senior teacher and guidance and counseling teacher that sexual harassment at D.K. was mostly verbal were confirmed by some of the girls' responses:

> "... He is ever humiliating me in class and is too strict". (Girl, 13. D.K.)

> "He talks a lot about immoral stuff and cracks dirty jokes". (Girl 25. D.K.)

The behaviour of teachers towards the girls was more positive at D.K, and probably, this was partly due to the administrative measures effected to that end. It is however evident from both

the teachers' and pupils' responses that a degree of sexual harassment existed in both schools. It is likely therefore that, if sexual harassment of girls by teachers was seen as normal, teachers are bound to see other stereotypic behaviour in the school such as domination by boys, also as normal.

The girls' revelations about their teachers are a premise suggesting that strategies for gender equality in schools have not had the expected impact on the teachers. It may be argued here that the problem about teachers is that they have not been directly involved in the gender sensitisation strategies. As a result, they still manifest negative gender attitudes and practices. For example at Soltech, a teacher left the distribution of textbooks to a class monitor who in turn ruled that day scholars would not be allowed to keep the books on grounds that they would lose them. Similarly, class teachers did not seem to see anything wrong with male pupils being elected as monitors while relegating girls to positions of vice-monitor in both schools. At D.K., the teachers saw it as normal that a girl was always vice to a boy who was always the Boarding, Entertainment, Sports or Preventive Maintenance Captain. By adopting a laissez faire type of attitude towards gender issues, the teachers, knowingly or unknowingly denied girls equal and fair access to the schools' resources and participation in the schools' activities. Personal interest, intervention and effort by teachers would improve the situation for girls. The following teachers' responses reflect their negative gender attitudes:

> "Gender equality contradicts with my beliefs' I don't accept the extreme part of it." (Female Teacher 3. D.K.)
>
> "They are over-emphasising a matter that has always been there. People talk too much about girls." (Male Teacher 13. D.K.)
>
> "... This very girl-child programme of theirs ... (has) not affected me whether at school or at home. I have been doing what I have always been doing." (Female Teacher 8. SOL).

> "These gender issues have not affected my domestic life at all. In the first place, all my children are boys. Besides, my wife does not believe in gender equality. There is no competition in the house.... When I heard that there would be girls in our school, I was not at ease. (However), I have had to accept the situation and get used to it" (Male Teacher 11:SOL).

Although some teachers reflected positive gender attitudes, it is important to also consider what they do rather than only what they say. Whyte et al (1985:33) explains this thus:

> "While it is clear that a majority of teachers are in favour of equal opportunities in principle, they show a marked lower commitment to practices which positively encouraged equality.... Many schools are acting without a firm foundation of commitment or even a clear idea from teachers about the validity of the policy".

Some teachers may have a genuine desire for gender equality and may possess what they themselves perceive as positive gender attitudes. Ironically however, their well-intended efforts work to reinforce exactly what should be dismantled:

> "In my class, consciously or unconsciously, I have been protecting the two girls in my class as special beings that need to be given special treatment. This is because back in society, boys have been allowed freedom and grow up hardened whereas girls are protected and grow up expecting protection and special treatment." (Male Teacher 9. SOL).

In this context, McManus (1985:5) argues thus:

> "Girls create fewer disciplinary problems, not as a consequence of innate temperamental docility but of strategic adaptation to the world in which they are denied self-expression".

Schools are therefore expected to provide equal opportunity to girls and boys to do even what society may generally consider as untypical of their respective sex - as long as the pupils see such behaviour as of value to themselves. For example, it should be seen as normal for girls to do, if they so wish, what boys do, such as being assertive and not allowing the boys to monopolise furniture or certain positions of responsibility. It is in this perspective that Byrne (1978) argues that "equality" should be made synonymous with the "same".

The sensitisation of teachers in gender issues is therefore imperative for any significant change in girls' education. Such sensitization can take place during school holidays when the teachers are not teaching and follow the normal school working hours and without the need for any significant external funding. Any other financial, material, and human resources that may be available should therefore be channeled to the schools where rationality suggests the returns would be higher. This means sensitising more of teachers and pupils and less of administrators and other officials who rarely visit schools for the purpose of promoting gender equality. As Table 5.9 shows, the majority of the teachers that were interviewed derived their knowledge about gender issues from sources other than deliberate and official Ministry of Education strategies towards gender equality in the schools.

Table 5.9: Percentage distribution of the means by which teachers reported to have learned about gender issues.

Means of knowledge about gender issues	SOLTECH (%)	D.K. (%)	Total Average (%)
College (pre-service/in-service)	27.3	30.8	29.05
Professional conferences/workshops	18.2	15.4	16.8
Informal means (media, friends, etc.)	54.5	53.8	54.15
Total	**100.0**	**100.0**	**100.0**
Number of cases	11	13	24

Source: Interviews with teachers

No teachers had learned about gender issues in the school itself unless they had gone out for in-service training on study leave or had attended professional workshops or conferences organised by associations for their respective teaching subjects. There was no formal meeting organised specifically for teachers inside or outside the schools for the purpose of educating them (teachers) on how to relate with girls in the school. Yet, girls were a novelty in the schools and the whole aim of introducing them into these schools was to reduce on gender

gaps. Without gender sensitisation of the teachers, equality of girls' access to school resources would be difficult to attain.

This chapter has examined the extent to which girls were enrolled into technical secondary schools and the extent to which the schools' curriculum and furniture were accessible to girls. It was found that girls enrollment into technical secondary schools had been improving over the period under study albeit at a very slow rate. As a result, although the schools were co-educational, they were still predominantly boys' schools.

Further, girls' catchment areas were more restricted than boys'. At Soltech, the majority of girls were not only enrolled from schools in Solwezi district alone, but were also enrolled from academically poor-performing basic schools. On the other hand, the majority of the boys were not only enrolled from schools outside Solwezi district but also from academically better-performing conventional secondary schools.

At D.K., three provinces; Lusaka, Copperbelt and Central, made up the bulk of the girls' catchment area. Of these provinces, Lusaka provided the majority of the girls that were enrolled into D.K. On the other hand, the majority of boys' were enrolled from Copperbelt province. The differences in the girls' and boys' catchment areas increased the likelihood of enrolling more girls than boys that were less academically capable.

There was no uniformity in the curriculum offered by the two schools. In both schools, industrial arts was less accessible to girls than to boys. This was because at Soltech, girls' drop-out rate was higher than boys' while at D.K., industrial arts was restricted to only those that had a background in the subject at junior secondary school. Of the three industrial arts subjects (G.M.D., metalwork and woodwork), G.M.D. had the highest dropout rate.

Additional mathematics at D.K. was almost as equally accessible to girls as it was to boys. This was because most of the girls that were enrolled into the school were able to compete well academically with the boys. It was also because girls were concentrated in the non-technical classes, which did not take industrial arts but had the option of taking additional mathematics. This increased the girls' choice of taking up the subject. At Soltech, because of their poorer academic ability, fewer girls than boys took additional mathematics.

All the girls at D.K. took pure science because it was compulsory to the school unlike at Soltech where fewer girls took pure science because of their lesser academic ability. Instead, more girls took the less difficult general science. The only subjects that were equally accessible to both girls and boys in both schools were general mathematics and biology.

It was found that furniture was not equally accessible to pupils in both schools. At Soltech, it was more accessible to boys not only because boys were dominant but also because boys were boarders and often arrived earlier in school than the girls, all of who were day scholars. Although there were instances where some boys and some prefects asserted their dominance, furniture at D.K. was almost equally accessible to both girls and boys.

Girls' negative experiences in the two technical secondary schools were due to economic constraints that made it difficult to buy more furniture, provide boarding facilities or build single-sex technical secondary schools for girls. It was further due to the fact that national, provincial and school administrations did not effect adequate measures to ensure gender equality and also due to teachers' relative lack of gender sensitivity.

CHAPTER SIX

GIRLS' RETENTION AND ACADEMIC PERFORMANCE IN TECHNICAL SECONDARY SCHOOLS

This chapter examines the extent to which girls are retained in technical secondary schools and analyses academic performance of girls vis a vis that of boys.

Retention

From 1995 to 1997, there were five (5) reported cases of pregnancy at Soltech. Of these, two returned to continue with their education after giving birth while the third one returned only for the final examinations. The other two did not return and no information was available about them. The school authorities at Soltech explained that the girls that dropped out of school due to pregnancy had not been able to return to school because it was at a time before the educational policy that allowed pregnant girls back in school was announced.

At D.K. there were no reported cases of girls dropping out of school due to pregnancy. For this reason, it is difficult to analyse the school authorities' attitude towards the re-admission of pregnant girls into school. This is because there may be a wide gap between what educationists may say and what they actually do. This manifested itself at Soltech where the girls that had returned to school after giving birth complained of verbal harassment by both male pupils and some teachers. The male pupils referred to these girls as "second hand":

> "When one of the female pupils with a child was first told she was "second hand", she cried the whole day ... I advised her to work hard and convince the boys that she was not second hand" (Female Teacher 3. SOL).

What this implies is that while schools may admit girls back into school after delivery, there is

need to sensitize the rest of the school population on gender issues. It would be naive to assume that a pupil who has delivered would not be affected negatively by society including the school as a result of her motherhood. There is also a danger that even if school head teachers support the policy of re-admission of pregnant girls as those at D.K. and Soltech said, it may be merely in principle and only because their positions as administrators compel them to support government policy. Kankasa-Mabula and Chondoka (1996) argue that school authorities are against the new policy for fear that it would encourage indiscipline. It is encouraging however, that the majority of the teachers (64% at Soltech and 62% at D.K.) felt that the policy was good. However, the complaint that the policy was encouraging indiscipline came out prominently from teachers and parents. One parent stated thus:

> "The policy is good because it will allow girls to complete their education. But I'm not happy with the way it was announced. It should have been made a silent thing. But now, it is as good as telling the girls 'you are free to engage in sex'" (Male Parent 2. D.K.).

It is therefore for such fears that even head teachers could be skeptical about the new policy. This is more so that head teachers are the ones that would have to deal with the problem of indiscipline when it arises in the schools.

A factor that affected the retention of girls was transfers out of the schools. At Soltech, 20% of the girls left the school over a period of three years compared to 1% of the boys. At D.K. during a period of five years, 3% of the girls left the school compared to 1% of the boys. This is shown in Table 6.1. More girls left Soltech than they left D.K. The same applied to the boys. Partly, this was because of the lower academic standards at Soltech. This was reflected in the general academic performance of the two schools. The girls' parents were aware of the type of school their children attended and based their choice of school on the school's record of academic performance.

Table 6.1. Percentage distribution of pupils that had left the schools on transfer

	SOLTECH						D.K.									
	1995		1996		1997		1993		1994		1995		1996		1997	
	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)
Transferred out of school	35.0	1.1	14.3	1.3	10.8	1.6	2.5	0.3	2.5	0.4	5.0	0.7	2.4	1.0	3.6	0.5
Retained in school	65.0	98.9	85.7	98.7	89.2	98.4	97.5	99.7	97.5	99.6	95.0	99.3	97.6	99.0	96.4	99.5
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
No. of cases	20	563	56	547	65	572	40	666	80	673	120	702	127	725	137	736

Source: School records (Solwezi and David Kaunda Technical Secondary Schools)

It is this that made the difference between whether they wanted to remove their daughters from the school or not. Therefore, while none of the parents at D.K. said they wanted to move their daughters to another school, 77% of those at Soltech said they would if given the opportunity.

Another factor that affected the rate of transfers was the parents' capacity to pay for their children's education. The school authorities at D.K. explained that economic constraints affected the enrollment rates rather than the retention rates. Further, economic constraints affected boys' more than the girls' retention. This explanation is probably reflective of the larger proportion of girls than boys who had enrolled from local (Lusaka) schools. It is likely that some of the girls were enrolled to take the place of those who failed to report due to financial reasons. It is therefore more likely that the parents of such newly enrolled girls would have greater capacity to pay for their children's education. In a study of schools in the Southern Province of Zambia, Himpyali (1993) also found that more boys than girls dropped out of school due to financial constraints. This study does not explain why this was the case. It would however be invaluable for future studies into girls' education to investigate the probability of girls' resorting to premarital sexual relationships in order to raise money for their education.

The situation of the girls at Soltech was different because parents there faced more economic constraints than the parents at D.K. This compelled some of the parents to seek transfers for their daughters to schools whose financial demands were less vigorous. The higher transfer rates at Soltech were also explained by the fact that some parents wanted their daughters in boarding school where the girls could concentrate better on their studies. Other parents went on transfer out of Solwezi, and because Soltech had no boarding facilities for girls, transfers for their daughters had to be sought.

School authorities at D.K. attributed lower retention rates for girls to the fact that some girls were not used to either boarding or co-education school. Such girls opted to seek a transfer back to their original schools. The school authorities explained that those girls that went out on transfer in such a manner were less in number than those that actually did not report. Their former schools were usually single-sex.

GIRLS' ACADEMIC PERFORMANCE

This part analyses the Grade 12 (0-Level) examination results in general mathematics, physics, chemistry, biology, science, geometrical and mechanical drawing (G.M.D.), metalwork and woodwork. (See Table 6.2). A more detailed summary is given in the appendices.

Table 6.2. Percentage pass rates at Soltech (1997-98) and D.K. (1995-98)

	SOLTECH				D.K.							
	1997		1998		1995		1996		1997		1998	
	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)	Girls (%)	Boys (%)
Mathematics	7.7	40.5	13.6	48.7	100.0	100.0	92.7	98.9	88.7	96.0	89.1	98.5
Additional Mathematics	-	75.0	-	71.4	100.0	96.4	93.8	97.1	89.7	94.3	82.4	87.5
Physics	0.0	45.5	-	57.9	100.0	100.0	95.2	97.8	96.0	97.8	67.2	93.2
Chemistry	0.0	66.7	-	30.6	100.0	100.0	100.0	98.9	100.0	99.0	76.6	94.4
Biology	72.7	59.7	36.9	63.5	100.0	100.0	97.6	98.3	85.5	99.0	98.4	100.0
Science	42.9	71.0	54.6	68.0	-	-	-	-	-	-	-	-
G.M.D.	-	97.1	66.7	89.6	-	98.1	100.0	99.0	-	100.0	75.0	97.7
Metal Work	-	90.9	80.0	89.1	-	100.0	60.0	87.0	75.0	98.2	50.0	94.1
Wood Work	-	75.0	33.4	71.8	100.0	100.0	100.0	98.5	-	98.2	100.0	97.3
Average% pass	24.7	69.0	47.5	65.1	100.0	99.3	92.4	96.9	89.1	97.0	79.8	95.3

Source: Examinations Council of Zambia

Girls' academic performance was on average lower than that of boys. The only exception was at D.K. where in 1995 the girls achieved a 100% pass rate in all subjects including additional mathematics. In the same year, the boys achieved a lower average pass rate of 99% because of poorer performance in additional mathematics and G.M.D. In 1996, although the girls' average pass percentage of 92% was lower than the boys' 97%, the girls achieved a 100% pass rate in chemistry, G.M.D. and woodwork. Despite achieving higher pass rates in the rest of the subjects, boys did not achieve any 100% pass in any subjects in 1996. The girls also achieved a 100% pass in chemistry in 1997, compared to 99% for the boys. On average, even at D.K., girls' academic performance declined steadily each successive year.

Nevertheless, results in individual subjects show that girls can perform better than boys even in subjects like additional mathematics which have been gender stereotypically categorised as masculine (Gordon, 1994; Erinosho, 1994; Harvey and Edwards, 1980). The Head teacher at D.K. attributed the girls' good performance to the selection process that admitted only the best girls into the school. It can therefore be argued that the decline in girls' average academic performance from 100% in 1995 to 79% in 1998 could have been due to the same selection process, which began to admit girls of lower academic standards. Such girls were those that enrolled through the head teacher's office after the official selection by the Examinations Council of Zambia.

At Soltech, the girls' academic performance was poor, with an average pass rate of 35% in 1997 and 48% in 1998, compared to the boys' 69% and 65% respectively. Although the poor performance was relatively general to the school, the girls were probably more affected because of the selection process. Being a day school to the girls, it meant the girls that were selected had

lower marks because those with higher marks were selected to boarding schools. Moreover, the majority of the girls were selected from Basic schools. According to the school authorities, the teachers and the findings by Maimbolwa-Sinyangwe et al (1995), Basic schools produce low academic quality pupils.

Mathematics at Soltech was the subject that the girls performed the least in. This could be because it was the subject that the majority disliked the most after G.M.D. It was also the subject that the majority said was the most difficult and that was why the majority (91%) preferred sitting next to a boy in class so that they could be helped in the subject. In 1997, the girls had a high pass rate in biology (73%), perhaps confirming assertions by Harvey and Edwards (1980) that biology was the most popular subject with girls. However, this was not the case in 1998 where the girls' pass rate in biology was a mere 37%. In 1998, they achieved high pass rates in metal work (80%) and G.M.D. (67%). These results imply that girls' performance is not necessarily dependent on the type of subject but on other variables as well.

One such variable is the number of female teachers available in the school. According to CIDA, MOE and UNICEF (1996), increasing the number of female teachers, apart from increasing the number of role models for the girls, enhances the girls' academic performance. Female teachers were out numbered by male teachers and made up only 31% at D.K. and 20% at Soltech.
Apart for industrial arts at D.K, male teachers held all the positions of Head of Department in each school. The same applied for the positions of head teacher and head teacher apart from D.K. where a female held the position of deputy head teacher. The small number of female teachers in both schools could have negatively affected the girls' academic performance and especially those at Soltech.

However, increasing the number of female teachers may not be a solution if these teachers are not gender sensitive. This is the picture that came out of Soltech. One female teacher said that the integration of girls into Soltech was unfair to the boys because teachers had to slow down their pace of teaching to accommodate the slower girls. One girl commented:

> "...Female teachers get annoyed when you ask and ask again" (Girl 14. SOL).

The impact of female teachers on the girls is reflected by the fact that at Soltech, 78% of the girls and 90% of the boys preferred male teachers. The same applied at D.K. with 70% of the girls and 60% of the boys preferring male teachers. King and Hill (1993:165) argue thus about female teachers:

> "Female teachers may inspire girls to high achievement and accomplishment or direct them toward conformity with prevailing domestic ideals. Having qualified female teachers is important but not sufficient; they must also understand sex-role stereotypes and their potential effects".

Therefore, as well as increasing the number of female teachers as role-models, it is necessary to cultivate appropriate attitudes in female teachers for the girls to look up to and to acquire encouragement and guidance.

The academic performance of the girls at Soltech was poorer than those at D.K. because of the general poorer academic standards at Soltech. The best pupils at national level entered D.K. Even if the girls at Soltech were selected competitively, they still would have been academically inferior to those at D.K. which selected its pupils first before various provinces made their respective selections. Although some of the girls at D.K. may not have merited national selection, most of them were close to meriting national selection than those at Soltech were to meriting provincial selection. This is reflected in the gaps between the boys' and girls' average academic performance within each school; 8% for D.K. and 44% for Soltech in 1997and 15% for D.K. and

18% for Soltech in 1998. This implies that the girls at Soltech were less academically capable compared to the boys in the same school than the girls at D.K. who compared more favourably against boys.

There were other factors that could have influenced the poor academic performance of the girls and boys at Soltech. Some of the boys at Soltech did not believe that they could be out-performed by girls as reported by some girls:

> "I don't like the behaviour of some of the boys. They shout me down whenever I ask questions during Maths. It is because I beat all of them. But I don't mind. I know they just want to demoralise me". (Girl 44. SOL).

> "Boys shout, complain and insult when you have higher marks than them. They say teachers have just showed you" (Girl 32 SOL).

Some of the boys' responses confirmed the girls' accusations and revealed what they thought about the girls and why girls could not out-perform boys:

> "A girl will always be dependent. Most girls in my class like sitting next to boys because they are shallow and want to be helped...(This is why) most women are dull and are found in the village" (Boy 7. SOL).

> "Male teachers don't treat pupils equally. They favour girls and answer girls' questions but shut off boys' questions. Male pupils no longer perform well" (Boy 19. SOL).

Some of the teachers may also have contributed to the girls' poor academic performance by the way they behaved towards the girls:

> "When I asked him a question, he said I am not there to be tested how far I have gone in my education. I wanted to confront him but I was discouraged by my mother" (Girl 31. SOL).

> "He is fond of embarrassing me in class... is unapproachable and very harsh" (Girl 28. SOL).

Where the girls may want to ask a question in class for them to understand a subject being taught, they fear to do so because of the boys or teachers' attitudes. In this way, their academic performance is affected negatively. This probably explains the postulation by Maimbolwa-Sinyangwe and Chilangwa (1995) that attributes girls' low achievement in school to girls talking less in class, asking and answering fewer questions.

Although girls in both schools did not perform as well as the boys, they were probably capable of performing better than they did. This is reflected in their ability to achieve 100% pass rates in some subjects at D.K. where girls dominated the class 'A' distinction category in 1996 in Biology (20%) compared to boys' 18% and for Additional Mathematics in 1997 (30%) compared to the boys' 23%. (See appendices). The girls also performed better in 1997 in the class 'B' distinction category (19%) compared to the boys' 15% in Mathematics.

At Soltech, there were some girls who were capable of performing better than the boys. This is reflected for instance; in the girl who had dropped Additional Mathematics yet had been performing better than some of the boys. This is confirmed by this comment by one teacher:

> "Although girls are rather slow in Geometrical and Mechanical Drawing, they are very neat and could be very good" (Male Teacher 7.SOL).

If the girls at D.K. were capable of performing better than the boys in some subjects, it raises questions why they were not able to perform as well in other subjects. This therefore reflects a gender concern. Kane (1996) argues that the only difference between the cognitive abilities of girls and boys is what manifests itself in the social context. Similarly, Mwansa (1995:5) states thus of girls' academic ability:

> "The inherent potential is present, but for this potential to be actualised, there is need for a supportive social environment".

Although the girls at D.K. performed well in some subjects, the majority attained weak passes. Therefore, these girls would make the bulk of the pupils that would make up the class that was proposed to take the easier "General science" as an alternative to the more difficult "Pure Science". The implication is that since the girls in the school were not performing as well as the boys, then they (girls) were responsible for the school's falling academic standards.

The academic performance of the girls in the technical secondary schools would be improved if the enrollment procedure is restricted to those that are of high academic calibre and who therefore would be able to compete favourably with others. For example, if Soltech was made a boarding school for girls as well, the catchment area for the school would be widened and so would the chances of enrolling higher performing girls. Thus the school would be able to enroll girls from other districts apart from Solwezi, who do not have accommodation in Solwezi. Similarly, at D.K., the fact that the academic performance in the school was steadily declining is indicative of the fact that there were some girls that were being enrolled whose academic ability was not to expectation. The situation was worsened by the fact that some of the girls that were selected to the school from mission schools like Fatima Secondary School who refused to enroll were said by the school authorities to be among the highest performing pupils.

Kankasa-Mabula and Chondoka (1996:18) argue that schools do try to adhere to the regulation to maintain a reasonable balance between the number of girls and boys but do not succeed:

> "Normally, school authorities do observe these regulations especially at the beginning of the academic year, when enrollment takes place. However, what happens subsequently works against the girls, as school places left by expelled or transferred girls go to boys."

This accusation may be true of Soltech and D.K. as is indicated by the disparities in the enrollment number between girls and boys, which is discussed in Chapter Five of this report. The enrollment also worked against the girls in another way. This occurred when the better performing girls who refused to enroll from other schools were replaced by other girls that were not as academically capable. This probably explains the decline in the girls' academic performance. The same thing happened at Soltech where lower performing girls from Solwezi district alone replaced the higher performing girls from the other districts of Northwestern Province who would have been enrolled at the school.

It follows therefore that technical secondary schools should consider the calibre of girls that are enrolled into the schools when compared with the calibre of the boys that are enrolled. It is not expected of girls at D.K to be out-performed by the boys. The expected results would perhaps be similar to the first group of girls in 1995 in which girls achieved overall 100% pass compared to the boys' 99%. The answer to the decline in the girls' academic performance probably lies in the schools' subsequent enrollment of girls in the school during the course of the academic year. (Kankasa-Mabula and Chondoka, 1996).

The problem of enrollment of girls at Soltech was not due to subsequent enrollment as was the case at D.K., but was entrenched within the girls right from the time of selection. As a result, however hard such girls worked, they were not able to do better than the boys because of the differences in their competence brought about by the selection criteria. Such a situation probably explains the low self-image of the girls at Soltech. Just as Worell and Stilwell (1981) and Maimbolwa-Sinyangwe (1985) argue that a high performing pupil develops high self-esteem, so can it be argued that a low performing pupil develops low self-esteem. Worell and Stilwell (1981)

also point out that a high performing pupil perceives positive or negative outcomes as related to his or her own behaviour and such a pupil is likely to persist. Going by this argument, the fact that the girls at Soltech manifested low esteem can be said to be a consequence of their poor academic performance. For instance, the majority of the girls thought of themselves as performing poorly because they were girls and preferred to sit next to boys for the purpose of seeking academic assistance.

The enrollment procedure therefore, should not allow for the enrollment of more girls than boys that are of lower academic aptitude because this creates and consolidates beliefs that however hard they work, girls are not capable of performing better than boys. There is also need for the cultivation of a more gender friendly school environment. In particular, teachers' attitudes towards the girls should improve and especially the female teachers who must act as role models for the girls. The qualifications of the teachers should also improve, particularly rural schools like Soltech at which only 20% of the teachers had university training compared to 87% at D.K. The only non-degree holders at D.K. were teachers of industrial arts, a subject in which no training institution offered a degree in Zambia. While at D.K., there was no teacher who had been seconded from primary school; Soltech had 10% of such teachers. Thus, there is need for equity in teacher distribution both by professional qualification and by sex. For the girls at Soltech, academic performance may be improved by making the school boarding for girls as well in order to increase the number of high performing girls that are enrolled into the school.

This chapter has examined the retention and the academic performance of girls at Soltech and D.K. It was found that the rate of retention for both girls and boys was lower at Soltech than at D.K. This was attributed to differences in the respective schools' record of academic performance.

This served to attract pupils away from Soltech, and towards D.K. For both schools, the rate of retention for girls was lower than that for boys. This was because some girls left for single-sex schools or other schools, which were thought to have better facilities, and practiced better gender relations. Because Soltech did not provide boarding facilities for girls, some of its girls left for boarding schools where they could have more time to devote to academic work. Retention rates for girls at D.K. were higher than at Soltech. This was not only a result of the better academic record at D.K. but also because more parents at Soltech than at D.K. were less capable of paying for their children's education. Consequently, more parents at Soltech sought transfers to academically better or cheaper schools.

The academic performance of girls in both schools was lower than that of boys. The difference between girls' and boys' performance was narrow at D.K. where in some cases, girls' performance was the same or better than boys' performance. Girls at D.K. performed better than boys even in subjects such as Additional Mathematics in which girls' participation and performance has often been overshadowed by that of boys. The better academic performance of girls at D.K. was a result of more competitive enrollment procedures for both girls and boys. Subsequent relaxation in enrollment procedures for girls could have contributed to lowering their academic performance in both schools. This resulted in the reduction of the catchment areas for girls and the consequent enrollment of more girls' of lesser academic ability. To an extent, girls' lower academic performance was affected by negative attitudes of some of the teachers. This was especially the case at Soltech.

The girl's experiences as reported in the previous chapter probably also worked to worsen their academic performance. As discussed in Chapter 5 of this report, gender sensitive teachers or

administrative decisions were generally lacking in the schools. The technical secondary schools were still predominantly boys' schools because girls made up only a small proportion of the school pupil population. Girls' enrolment was restricted only to certain schools or certain areas unlike the boys whose enrollment was wider. This implied the enrollment of academically poorer performing girls. The situation for the girls at Soltech was worse because of the lack of boarding facilities and adequate furniture, which usually was accessed more by the boys.

CHAPTER SEVEN

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter gives a summary of the findings of this study, draws conclusions and makes recommendations to policy makers for them to make suitable decisions and strategies towards gender equality in education.

SUMMARY OF FINDINGS

(a) The girls' female parents were generally of lesser educational attainments than the male parents. However, the female parents at D.K. were of higher educational attainments than those at Soltech.

(b) More girls at the urban school (D.K.) came from higher socio-economic backgrounds than at the rural school (Soltech). Consequently, the parents at D.K. had fewer difficulties paying for their children's education than those at Soltech.

(c) The girls' parents were aware that their children attended a technical secondary school although very few took the trouble to visit the schools about their daughters.

(d) Generally, girls felt more comfortable to consult their female parents about academic matters even when the male parents were the more appropriate to consult for the matter by

virtue of their higher academic qualifications. Girls at D.K. however seemed to have more positive gender relations with their male parents than those at Soltech.

(e) Most girls preferred being taught by male teachers whom they perceived as more effective than female teachers. For academic assistance, most girls preferred sitting next to a boy in class whom they stereotypically perceived as more intelligent than females. For this reason, most girls at Soltech unlike at D.K. preferred co-education.

(f) Fewer girls had access to technical secondary schools because girls' enrolment had been increasing only very marginally each successive year from the time the schools had acquired co-education status. As a result, the technical secondary schools were still predominantly boys' schools.

(g) Girls that had access to the technical secondary schools were enrolled more locally and less competitively than the boys. Girls' enrolment was relatively limited to one province and one district for D.K. and Soltech respectively. On the other hand, boys were enrolled from wider catchment areas that stretched beyond one province and one district for D.K. and Soltech respectively.

(h) Girls' access to additional mathematics, pure science, and industrial arts in the technical secondary schools was generally lesser than boys. This is as a result of various reasons: the subject in one way or another has been made optional; having taken industrial arts at Junior Secondary School level has been made a pre-requisite for taking it at senior

secondary level; girls' discontinuing with the subject because of lack of the will or ability to cope in the subject or the belief that the subject is masculine despite that results in these subjects showed that in some cases, girls were performing better than boys; teachers' low opinion about girls' ability to take the subject; or because a teacher was found to be boring, too strict, unfriendly, or unapproachable or also because of the lack of equipment.

(i) Because of the limited number of chairs, all the pupils in both schools did not have equal access to them. At Soltech, boys dominated the use of chairs either because they asserted their dominance over the girls or because they arrived earlier in school by virtue of their being boarders. At D.K., the use of chairs was dominated either by prefects or senior-grade pupils. Among these pupils, boys were more dominant than girls.

(j) Girls' access to and participation in leadership roles such as captains, prefects, class monitors and other positions of responsibility was less than boys'. At Soltech, either this was because fewer girls were appointed or elected to these positions or because girls were intimidated into withdrawing their candidature, resigning; or simply not volunteering for nomination. At D.K., it was because the school authorities exclusively reserved certain positions for boys. In both schools, the fewer girls that had positions of responsibility did not wield as much authority as their male counterparts.

(k) Girls' dropout from school was almost non-existent in both schools. Where parents could not cope, their children's education was paid for by deferring the payment or paying in installments. Overall however, retention rates for girls were lower than boys' and this was

mainly because of transfers. Some parents sought transfers for their children to cheaper schools. Transfers were also sought because some of the girls preferred single-sex schools or in the case of Soltech, because parents wanted to send their children either to a boarding school or to a school with a better record of academic performance.

(l) The academic performance of girls at Soltech in the School Certificate Examinations was lower than boys' performance in all the subjects except for one year (1997) when girls had a better performance in biology. The academic performance of the girls at D.K. was better than their counterparts at Soltech because, apart from recording better average academic performances than the girls at Soltech, they also recorded better performances than the boys in their school in selected subjects. The girls at D.K. out-performed the boys in additional mathematics in 1995; chemistry, G.M.D. and woodwork in 1996, and chemistry in 1997. Overall, except for one year (1995) at D.K., the average academic performance of the girls was lower than the boys' performance in both schools.

(m) Girls in both schools experienced sexual harassment. This was particularly so at Soltech where girls were victims of verbal abuse, intimidation, unwelcome sexual advances and even corporal punishment where male teachers caned them on the buttocks. Sexual harassment was not as common at D.K. because of administrative measures to discourage the practice.

CONCLUSION

(a) Both the rural and urban male parents are not approachable enough for their daughters to consult them for academic purposes. However, parents at D.K. are more approachable than those at Soltech. Nonetheless, irrespective of their education or income levels, the parents' gender stereotypic behaviour towards their children least includes their resolve to educate their children and irrespective of the sex of the child or the sex of the teacher handling the child. Therefore, parents strive to afford their children, including girls, an opportunity for a good, affordable education. However, the parents are more concerned with their children's academic performance than with other matters that concern their children while in school. As a result, they fail to recognise the shortcomings of the schools and their own need to intervene for the sake of their daughters' success at school.

(b) Many of the girls, especially those at D.K. still believe that females are less academically capable than males in such subjects as industrial arts, mathematics and science and also that female teachers are less capable of doing their job compared to male teachers. This belief is contributing to the girls' low participation in these subjects and especially where the subject is made optional and is confirmed by their poorer academic performance. The belief also seems to influence the girls into desiring to sit next to a male pupil in order to seek academic assistance.

(c) Girls' access to both schools is differentiated by selection criteria that are different for boys and for girls. This enrolment criteria is relatively less competitive for the girls because they are enrolled from relatively localised schools and therefore from narrower catchment areas than the boys. Girls' enrolment is more or less confined to one province and to one district for Soltech while for D.K. enrolment is derived from wider catchment areas that stretched beyond one province and one district.

(d) The girls' population in the schools is still marginal and as a result, the schools are still predominantly boys' schools rather than co-educational schools. This is mainly because there seems to be a conscious attempt to minimise the number of girls that are admitted to the schools.

(e) Other than as a result of transfers, there is no problem of retention for girls in both schools but in any case, retention favours the boys more than the girls. This is mainly due to transfers as a result of sexual harassment and the desire to be in a single-sex school. In the case of Soltech, transfers were also due to the poor academic the school's poor academic record; the need to find a cheaper school or the need to be in boarding school.

(f) On average, girls' academic performance was lower than boys' performance in both schools. However, quite a large number of the girls at D.K. were able to perform better than boys even in subjects that were stereotypically labeled as masculine.

(g) Girls in the schools still experience sexual harassment and verbal abuse both from male pupils and teachers. This is particularly so for the rural school Soltech, where the girls still experience corporal punishment.

RECOMMENDATIONS

Arising from the findings of this research study, the following recommendations are made to policy-makers, government, cooperating partners, non-governmental organisations and educational authorities:

(a) Technical secondary schools should have a deliberate policy of regularly inviting pupils' parents to the schools in order to interact with them as a group and as individuals. In this way, parents, should be encouraged to visit their children's schools of their own accord in order to learn about their children's activities, problems, and experiences in school, as well as be sensitised about gender issues as they pertain to girls' education. This way, parents would be encouraged to encourage their daughters to consult their parents more freely and more often,

(b) Future programmes or funding for the purpose of gender equality in education should focus more on directly sensitising school administrators, teachers, and pupils rather than towards workshops or seminars for administrators beyond the school. Emphasis should be on sensitising the pupils and especially the female pupils for stronger self-image, self-esteem and assertiveness and also to sensitise the teachers because they are the ones that are directly in contact with, and spend more time with the pupils. Emphasis should also be

on the head teachers as the persons who are responsible for making school decisions and interventions that affect pupils on the spot,

(c) Particular attention should be accorded to the sensitisation of female teachers and pupils about their common gender problems and therefore the need to support each other in the quest for gender equality,

(d) Where the schools have boarding facilities for boys, the same should be provided for girls. Providing boarding facilities for boys alone restricts girls' enrolments to local schools thereby reducing the chances of enrolling girls in outlying schools that can compete more favourably, academically, with boys. Otherwise, single sex technical secondary schools should be established in order to increase girls' access to boarding technical secondary school and to level the ground for academic competition between girls and boys,

(e) The centrally designed curriculum for technical secondary school should be enforced to avoid the anarchy and contradictions that prevail as a result of school authorities' individual preferences. The uniformity of the curriculum should include a prescription of which subjects should be compulsory and which ones should be optional and this uniformity should be equal to both girls and boys,

(f) If some of the girls in the academically poorer Soltech are able to take industrial arts and perform well in the subject even without a background in the subject, then more of the girls in the academically better D.K. can also take the subject despite their lack of a background in the subject. Therefore, more girls should be allowed to take industrial arts

by devising a criteria for selecting those girls who can take the subject even without the background knowledge at junior secondary school,

(g) There is need for educational administrators, including head teachers, to accord adequate attention to the problem of gender inequality in technical secondary schools. In tackling this problem, there is also need to tackle the problem of gender inequity between rural and urban schools,

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APPENDICES

Appendix 1

Official National Curriculum for Technical Secondary Schools

1. Geometrical and Mechanical Drawing and Metalwork

or

Geometrical and Mechanical Drawing and Woodwork

2. Mathematics
3. Biology
4. Physics and Chemistry (Pure Science)

or

5. Science, History or Geography
6. Additional Mathematics or Literature in English or French or Religious Education or Commerce
7. English

N.B. What subjects to take and which pupils to take them is the discretion of the individual schools.

Appendix 2

Curriculum followed by Solwezi and David Kaunda Technical Secondary Schools.

SOLTECH	D.K.
Compulsory Subjects 1. English 2. Mathematics 3. Biology 4. GMD and Metalwork (or) GMD and Woodwork) 5. Geography **Optional Subjects** 6. Pure Science (Physics and Chemistry) or Science Additional Mathematics or History or Literature in English	**Compulsory Subjects** 1. English 2. Mathematics 3. Biology 4. Pure Science (Physics and Chemistry) **Optional Subjects** 5. Additional Mathematics or Literature in English or G.M.D. and Metalwork or G.M.D. and Woodwork 6. Geography or History 7. Geography and History 8. French 9. Computer Science 10. Home Economic (to be introduced)

Appendix 3

Grade 12(0-Level) Final Examination Results. (D.K. - 1995)

GRADE	MATHEMATICS		ADDITIONAL MATHEMATICS		PHYSICS		CHEMISTRY		BIOLOGY		GMD		METALWORK		WOODWORK	
	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS
1	10(23.3)	101(61.2)	0(0)	2(7.1)	2(4.6)	26(15.8)	3(7.0)	24(14.5)	4(9.3)	53(32.1)	0(0)	0(0)	0(0)	4(6.9)	0(0)	4(6.4)
2	8(18.6)	32(19.4)	1(6.2)	3(10.7)	3(7.0)	35(21.2)	8(18.6)	50(30.3)	5(11.6)	36(21.8)	0(0)	5(9.6)	0(0)	9(15.5)	0(0)	12(19.3)
3	9(20.9)	24(14.5)	3(18.8)	0(0)	10(23.3)	53(32.1)	19(44.2)	63(38.2)	23(53.5)	59(35.8)	0(0)	13(25.0)	0(0)	22(37.9)	1(100)	24(38.7)
4	4(9.3)	1(0.6)	1(6.2)	0(0)	3(7.0)	18(10.9)	3(7.0)	7(4.2)	2(4.6)	4(2.4)	0(0)	7(13.5)	0(00	8(13.8)	0(0)	6(9.7)
5	4(9.3)	4(2.4)	3(18.8)	2(7.1)	9(20.9)	13(7.9)	3(7.0)	7(4.2)	4(9.3)	8(4.8)	0(0)	10(19.2)	0(0)	7(12.1)	0(0)	3(4.8)
6	8(18.6)	2(1.2)	3(18.8)	1(3.6)	4(9.3)	7(4.2)	1(2.3)	10(6.1)	3(7.0)	3(1.8)	0(0)	12(23.1)	0(0)	4(6.9)	0(0)	10(16.1)
7	0(0)	0(0)	3(18.8)	11(39.3)	8(18.6)	13(7.9)	6(13.9)	2(1.2)	4(9.3)	2(1.2)	0(0)	2(3.8)	0(0)	4(6.9)	0(0)	2(3.2)
8	0(0)	1(0.6)	2(12.5)	8(28.6)	4(9.3)	0(0)	0(0)	2(1.2)	2(4.6)	0(0)	0(0)	2(3.8)	0(0)	0(0)	0(0)	1(1.6)
9	0(0)	0(0)	0(0)	1(3.6)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	1(1.9)	0(0)	0(0)	0(0)	0(0)
TOTAL	43(100)	165(100)	16(100)	28(100)	43(100)	165(100)	43(100)	165(100)	43(100)	165(100)	0(0)	52(100)	0(0)	58(100)	1(100)	62(100)

Note: For example 10(23.3) means

No	%
10	(23.3)

Appendix 4

Grade 12(0-Level) Final Examination Results. (D.K. - 1996)

GRADE	MATHEMATICS		ADDITIONAL MATHEMATICS		PHYSICS		CHEMISTRY		BIOLOGY		GMD		METALWORK		WOODWORK	
	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS
1	10(24.4)	53(29.6)	0(0)	9(25.7)	0(0)	23(12.8)	4(9.8)	33(18.4)	8(19.5)	33(18.4)	0(0)	2(2.0)	0(0)	0(0)	0(0)	0(0)
2	10(24.4)	29(16.2)	1(6.2)	6(17.1)	3(7.1)	31(17.3)	9(21.9)	38(21.2)	9(21.9)	43(24.0)	0(0)	3(3.0)	0(0)	0(0)	0(0)	6(9.2)
3	8(19.5)	52(29.0)	7(43.8)	8(22.9)	10(23.8)	53(29.6)	12(29.3)	53(29.6)	11(26.8)	53(29.6)	0(0)	31(30.7)	0(0)	12(22.2)	0(0)	24(36.8)
4	4(9.8)	13(7.3)	1(6.2)	2(5.7)	3(7.1)	12(6.7)	5(12.2)	10(5.6)	3(7.3)	5(2.8)	0(0)	19(18.8)	0(0)	8(14.8)	0(0)	5(7.7)
5	0(0)	11(6.1)	0(0)	1(2.9)	6(14.3)	5(2.8)	5(12.2)	12(6.7)	3(7.3)	13(7.3)	0(0)	11(10.9)	0(0)	4(7.4)	0(0)	7(10.8)
6	2(4.9)	10(5.6)	2(12.5)	5(14.3)	8(19.0)	22(12.3)	2(4.9)	17(9.5)	3(7.3)	16(8.9)	1(33.3)	16(15.8)	0(0)	12(22.2)	0(0)	10(15.4)
7	4(9.8)	5(2.8)	3(18.8)	2(5.7)	8(19.0)	21(11.7)	1(2.4)	13(7.3)	3(7.3)	11(6.1)	0(0)	14(13.9)	1(20.0)	6(11.1)	0(0)	11(16.9)
8	0)0)	4(2.2)	1(6.2)	1(2.9)	2(4.8)	8(4.5)	3(7.3)	1(0.6)	0(0)	2(1.1)	2(66.7)	4(4.0)	2(40.0)	5(9.3)	0(0)	1(1.5)
9	3(7.3)	2(1.1)	1(6.2)	1(2.9)	2(4.8)	4(2.2)	0(0)	2(1.1)	1(2.4)	3(1.7)	0(0)	1(1.0)	2(40.0)	7(13.0)	0(0)	1(1.5)
TOTAL	41(100)	179(100)	16(100)	35(100)	42(100)	179(100)	41(100)	179(100)	41(100)	179(100)	3(100)	101(100)	5(100)	54(100)	0(0)	65(100)

Note: For Example 10(24.4) means

No	%
10	(24.4)

Appendix 5

Grade 12(0-Level) Final Examination Results. (D.K. - 1997)

GRADE	MATHEMATICS		ADDITIONAL MATHEMATICS		PHYSICS		CHEMISTRY		BIOLOGY		GMD		METALWORK		WOODWORK	
	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS
1	11(20.7)	83(41.9)	3(30)	12(22.6)	2(4.0)	28(14.1)	7(13.2)	42(21.2)	4(6.4)	31(15.7)	0(0)	4(7.1)	0(0)	0(0)	0(0)	3(5.4)
2	7(13.2)	31(15.7)	1(10)	9(17.0)	3(6.0)	30(15.1)	5(9.4)	41(20.7)	8(12.9)	34(17.2)	0(0)	3(5.4)	0(0)	4(7.3)	0(0)	8(14.5)
3	7(13.2)	44(22.2)	1(10)	6(11.3)	8(16.0)	52(26.3)	14(26.4)	50(25.2)	12(19.3)	62(31.3)	0(0)	25(44.7)	0(0)	12(21.8)	0(0)	13(23.6)
4	2(3.8)	10(5.0)	1(10)	6(11.3)	2(4.0)	14(7.1)	3(5.7)	24(12.1)	6(9.7)	17(8.6)	0(0)	5(8.9)	0(0)	5(9.1)	0(0)	8(14.5)
5	5(9.4)	5(2.5)	0(0)	3(5.7)	3(6.0)	7(3.5)	4(7.5)	9(4.5)	8(12.9)	10(5.0)	0(0)	7(12.5)	0(0)	5(9.1)	0(0)	7(12.7)
6	4(7.5)	9(4.5)	1(10)	7(13.2)	5(10.0)	34(17.2)	8(15.1)	11(5.6)	5(8.1)	29(14.6)	0(0)	7(12.5)	0(0)	13(23.6)	0(0)	5(9.1)
7	6(11.3)	5(2.5)	1(10)	5(9.4)	12(24.0)	15(7.6)	6(11.3)	12(6.1)	10(16.1)	8(4.0)	0(0)	3(5.4)	1(25)	7(12.7)	0(0)	7(12.7)
8	5(9.4)	3(1.5)	1(10)	2(3.8)	13(26.0)	13(6.6)	6(11.3)	7(3.5)	0(0)	5(2.5)	0(0)	2(3.6)	2(50)	8(14.5)	0(0)	3(5.4)
9	6(11.3)	8(4.0)	1(10)	3(5.7)	2(4.0)	5(2.2)	0(0)	2(1.0)	9(14.5)	2(1.0)	0(0)	0(0)	1(25)	1(1.8)	0(0)	1(1.8)
TOTAL	53(100)	198(100)	10(100)	53(100)	50(100)	198(100)	53(100)	198(100)	62(100)	198(100)	0(0)	56(100)	4(100)	55(100)	0(0)	55(100)

Note: For example 10(23.3) means

No	%
10	(23.3)

Appendix 6

Grade 12(0-Level) Final Examination Results. (D.K. - 1998)

GRADE	MATHEMATICS		ADDITIONAL MATHEMATICS		PHYSICS		CHEMISTRY		BIOLOGY		GMD		METALWORK		WOODWORK	
	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS
1	13(20.3)	143(53.8)	0(0)	3(4.7)	3(4.7)	25(9.4)	1(1.6)	14(5.3)	10(15.6)	134(50.4)	0(0)	9(10.2)	0(0)	4(7.8)	0(0)	4(5.3)
2	12(18.7)	39(14.7)	0(0)	6(9.4)	3(4.7)	35(13.2)	4(6.2)	26(9.8)	14(21.9)	64(24.1)	0(0)	16(18.2)	0(0)	4(7.8)	0(0)	10(13.3)
3	17(26.6)	43(16.2)	3(17.6)	17(26.6)	11(17.2)	52(19.5)	16(25)	67(25.2)	23(35.9)	43(16.2)	1(25.0)	22(25.0)	0(0)	9(17.6)	0(0)	25(33.3)
4	6(9.4)	14(5.3)	2(11.8)	4(6.2)	4(6.2)	17(6.4)	5(7.8)	18(6.8)	2(3.1)	8(3.0)	1(25.0)	8(9.1)	0(0)	2(3.9)	0(0)	7(9.3)
5	0(0)	7(2.6)	1(5.9)	3(4.7)	2(3.1)	13(4.9)	3(4.7)	16(6.0)	2(3.1)	2(0.7)	0(0)	10(11.4)	0(0)	4(7.8)	0(0)	6(8.0)
6	3(4.7)	7(2.6)	5(29.4)	6(9.4)	8(12.5)	35(13.2)	4(6.2)	34(12.8)	5(7.8)	8(3.0)	0(0)	14(15.9)	0(0)	5(9.8)	0(0)	10(13.3)
7	3(4.7)	4(1.5)	2(11.8)	7(10.9)	4(6.2)	51(19.2)	11(17.2)	42(15.8)	4(6.2)	6(2.3)	1(25.0)	4(4.5)	1(50.0)	12(23.5)	0(0)	8(10.7)
8	3(4.7)	5(1.9)	1(5.9)	10(15.6)	8(12.5)	20(7.5)	5(7.8)	34(12.8)	3(4.7)	1(0.4)	0(0)	3(3.4)	0(0)	8(15.7)	2(100)	3(4.0)
9	7(10.9)	4(1.5)	3(17.6)	8(12.5)	21(32.8)	18(6.8)	15(23.4)	15(5.6)	1(1.6)	0(0)	1(25.0)	2(2.3)	1(50)	3(5.9)	0(0)	2(2.7)
TOTAL	64(100)	266(100)	17(100)	64(100)	64(100)	266(100)	64(100)	266(100)	64(100)	266(100)	4(100)	88(100)	2(100)	51(100)	2(100)	75(100)

Note: For example 13(20.3)

No	%
13	(20.3)

Appendix 7

Grade 12(0-Level) Final Examination Results. (SOLTECH - 1998)

GRADE	MATHEMATICS		ADDITIONAL MATHEMATICS		PHYSICS		CHEMISTRY		BIOLOGY		SCIENCE	
	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS
	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)
1	0(0)	2(0.7)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	2(0.9)
2	0(0)	5(1.8)	0(0)	0(0)	0(0)	2(9.1)	0(0)	0(0)	0(0)	1(0.9)	0(0)	4(1.6)
3	0(0)	11(3.9)	0(0)	1(25)	0(0)	0(0)	0(0)	1(4.8)	0(0)	9(7.9)	0(0)	28(11.3)
4	0(0)	7(2.5)	0(0)	1(25)	0(0)	0(0)	0(0)	1(4.8)	0(0)	0(0)	0(0)	16(6.4)
5	0(0)	11(3.9)	0(0)	0(0)	0(0)	2(9.1)	0(0)	2(9.5)	0(0)	6(5.3)	0(0)	18(7.3)
6	0(0)	26(9.3)	0(0)	0(0)	0(0)	2(9.1)	0(0)	3(14.3)	6(54.5)	13(11.4)	1(14.3)	34(13.7)
7	1(7.6)	22(7.9)	0(0)	1(25)	0(0)	4(18.2)	0(0)	2(9.5)	0(0)	18(15.8)	2(28.6)	36(14.5)
8	0(0)	29(10.4)	0(0)	0(0)	0(0)	0(0)	0(0)	5(23.3)	2(18.2)	21(18.4)	0(0)	38(15.3)
9	12(92.3)	166(59.5)	0(0)	1(25)	1(100)	12(54.5)	1(100)	7(33.3)	3(27.3)	46(40.3)	4(57.1)	72(29.0)
TOTAL	13(100)	279(100)	0(0)	4(100)	1(100)	22(100)	1(100)	21(100)	11(100)	114(100)	7(100)	248(100)

Note: For example 13(20.3)

No	%
13	(20.3)

Appendix 7 (continued)

GRADES	GMD		METALWORK		WOODWORK	
	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS
	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)
1	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
2	0(0)	4(11.4)	0(0)	0(0)	0(0)	0(0)
3	0(0)	5(14.3)	0(0)	3(13.6)	0(0)	1(6.2)
4	0(0)	3(8.6)	0(0)	4(18.2)	0(0)	1(6.2)
5	0(0)	4(11.4)	0(0)	1(4.5)	0(0)	1(6.2)
6	0(0)	5(14.3)	0(0)	1(4.5)	0(0)	0(0)
7	0(0)	5(14.3)	0(0)	8(36.4)	0(0)	4(25)
8	0(0)	8(22.9)	0(0)	3(13.6)	0(0)	5(31.2)
9	0(0)	1(2.9)	0(0)	2(9.1)	0(0)	4(25.0)
TOTAL	0(0)	35(100)	0(0)	22(100)	0(0)	16(100)

Note: For example 13(20.3)

No	%
13	(20.3)

Appendix 8

Grade 12(0-Level) Final Examination Results. (SOLTECH - 1998)

GRADE	MATHEMATICS		ADDITIONAL MATHEMATICS		PHYSICS		CHEMISTRY		BIOLOGY		SCIENCE	
	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS
	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)
1	0(0)	1(0.4)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	1(0.5)
2	0(0)	1(0.4)	0(0)	0(0)	0(0)	0(0)	0(0)	1(2.8)	0(0)	2(0.9)	0(0)	3(1.7)
3	0(0)	5(2.2)	0(0)	1(7.1)	0(0)	1(2.6)	0(0)	0(0)	0(0)	9(4.3)	0(0)	15(8.3)
4	0(0)	10(4.3)	0(0)	0(0)	0(0)	1(2.6)	0(0)	0(0)	0(0.0)	1(0.5)	0(0)	6(3.3)
5	0(0)	8(3.5)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	15(7.1)	0(0)	9(5.0)
6	0(0)	31(13.5)	1(100)	2(14.3)	0(0)	0(0)	0(0)	1(2.8)	0(0)	26(12.3)	2(9.1)	22(12.1)
7	2(9.1)	24(10.4)	0(0)	4(28.6)	0(0)	11(28.9)	0(0)	3(8.3)	3(15.2)	32(15.2)	3(13.6)	32(17.7)
8	1(4.5)	32(13.9)	0(0)	3(21.4)	0(0)	9(23.7)	0(0)	6(16.7)	4(21.0)	49(23.2)	7(31.8)	35(19.3)
9	19(86.4)	118(51.3)	0(0)	4(28.6)	0(0)	16(42.1)	0(0)	25(69.4)	12(63.1)	77(36.5)	10(45.4)	58(32.0)
TOTAL	22(100)	230(100)	1(100)	14(100)	0(0)	38(100)	0(0)	36(100)	19(100)	211(100)	22(100)	181(100)

Note: For example 13(20.3)

No	%
13	(20.3)

Appendix 8 (continued)

GRADES	GMD		METALWORK		WOODWORK	
	GIRLS	BOYS	GIRLS	BOYS	GIRLS	BOYS
	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)
1	0(0)	1(1.5)	0(0)	0(0)	0(0)	0(0)
2	0(0)	4(6.0)	0(0)	2(4.3)	0(0)	1(1.2)
3	0(0)	13(19.4)	0(0)	8(17.4)	0(0)	6(7.1)
4	0(0)	5(7.5)	0(0)	0(0)	0(0)	4(4.7)
5	0(0)	3(4.5)	0(0)	5(10.9)	0(0)	5(5.9)
6	1(33.3)	15(22.4)	0(0)	5(10.9)	0(0)	7(8.2)
7	1(33.3)	11(16.4)	0(0)	8(17.4)	1(11.1)	20(23.5)
8	0(0)	8(11.9)	8(80)	13(28.3)	2(22.2)	18(21.2)
9	1(33.3)	7(10.4)	2(20)	5(10.9)	6(66.6)	24(28.2)
TOTAL	3(100)	67(100)	10(100)	46(100)	9(100)	85(100)

Note: For example 13(20.3)

No	%
13	(20.3)

Appendix 9

INTERVIEW GUIDE FOR PUPILS

SEX ..... AGE ..... SCHOOL ..... GRADE .....

DISTRICT OF RESIDENCE ..... RESIDENTIAL AREA .....

1. Who do you stay with?
2. How far did your parents go in their education?
3. What is your mother's/father's occupation?
4. How many brothers and sisters do you have?
5. Are they all in school?
6. If they are not in school, why?
7. Have you ever repeated any grade?
8. At which school did you do your junior secondary school education?
9. How did you come to the present school?
10. Why did you choose to come to the present school?
11. Who pays for your education?
12. Do you experience difficulties in paying or your educational requirements?
13. From whom do you receive the greater encouragement between your mother and father?
14. Who do you consult more between you mother and father for i) academic matters ii) Financial matters iii) Other matters.
15. Who do you address your school report to?
16. Which school subject do you like/dislike the most?
17. Which subject do you get the highest/lowest marks in?
18. Which subject would you have liked to take?
19. Which subject would you like to drop?
20. Have you dropped any subject?
21. Are facilities adequate in this school?
22. Which pupils have more access to these facilities?
23. What do you like/dislike most about this school?
24. Are you happy that this school is co-educational?

25. Do you prefer sitting next to a girl or a boy in class?
26. Would you like to have separate lessons for girls and boys in this school?
27. Would you like to go to a different school on transfer?
28. Would you have liked to have been born of the opposite sex?
29. Is there a teacher that is your most/least favourite?
30. Do you prefer female teachers to male teachers?
31. What would you like to be after you have finished school?
32. What changes would you bring in the school if you were the headteacher?

Appendix 10

INTERVIEW GUIDE FOR TEACHERS

SEX ..... SCHOOL ..... SERIAL NO. .....

1. How long have you been working as a teacher?
2. How long have you been working in this school?
3. What professional qualifications do you hold?
4. What position(s) of responsibility do you hold in this school?
5. What do you understand by gender issues?
6. How did you come to know about gender issues?
7. How have gender issues affected you in your home?
8. What is your opinion about gender issues in education?
9. What is your opinion about the integration of girls into this school?
10. What is the role of technical secondary schools compared to other secondary schools?
11. How has the integration of girls into this school affected
    (i) your work in this school (ii) the male pupils?
    (ii) the male teachers? (iv) the female teachers?
12. Which pupils consult you more between girls and boys?
13. Do girls and boys have equal access to industrial arts, science and mathematics?
14. Which subject do girls or boys find the most difficult in this school? If so, why?
15. Which subject has the highest drop-out rate in this school?
16. What is done about pupils that drop-out of a subject?
17. How do you rate girls' academic performance compared to boys'?
18. Has your school got adequate facilities? If so, has this affected girls and boys differently?
19. In this school, how big is the problem of
    (i) sexual harassment? (ii) pregnancy? (ii) drop-out?
20. Is there a difference in the rate of transfers between girls and boys, in and out of this school?
21. What are the greatest obstacles to the retention of girls or boys in this school?
22. What changes would you like to see in this school?

Appendix 11

INTERVIEW GUIDE FOR HEADTEACHERS

SEX ..... SCHOOL ..... POSITION .....

1. How long have you been working as a teacher?
2. How long have you been headteacher?
3. What professional qualifications do you hold?
4. What do you understand by gender issues?
5. How did you come to know about gender issues?
6. What is your opinion about gender issues in education?
7. How have gender issues affected you in your home?
8. What is your opinion about gender issues in education?
9. What is your opinion about integrating girls into this school?
10. How has the integration of girls into this school affected (i) your work in the school? (iii) male pupils? (iii) male teachers? (iv) female teachers?
11. What means has the school effected (i) to sensitise pupils and teachers on gender issues? (ii) to practise gender equality?
12. Do girls and boys have equal access to industrial arts, science, and mathematics?
13. Which subject do girls or boys find the most difficult in this school? Why is this so?
14. Which subject has the highest drop-out rate in this school? Why is this so?
15. What is done about pupils that drop out of a subject?
16. How do you rate girls' academic performance compared to boys'?
17. Has your school got adequate facilities? If so, has this affected girls and boys differently?
18. In this school, how big is the problem of (i) sexual harassment? (ii) pregnancy? (ii) drop-out?
19. Is there a difference in the rate of transfers between girls and boys, in and out of this school?
20. What are the greatest obstacles to the retention of girls or boys in this school?
21. How often do you communicate with your pupils' parents about their children?
22. What problems are making gender equality difficult to attain in this school?

Appendix 12

INTERVIEWS GUIDE FOR PROVINCIAL EDUCATION OFFICERS

SEX ..... POSITION ..... PROVINCE .....

1. How long have you been an educationalist?
2. How long have you been in your current position?
3. What professional qualifications do you hold?
4. What do you understand by gender issues?
5. How did you come to know about gender issues?
6. What is your opinion about gender issues in education?
7. How have gender issues affected you in your home?
8. What is your opinion about gender issues in education?
9. What is your opinion about integrating girls into technical schools?
10. What is the specific role of technical secondary schools when compared to other schools?
11. In what other ways is gender equality being translated in the technical secondary school in relation to (i) pupils? (ii) teachers? (iii) school administration? (iv) any other school-related issues?
12. Are you conducting courses, seminars, workshops, meetings etc. on gender issues for the teachers or pupils in technical secondary schools?
13. How successful have strategies towards gender equality been in the technical secondary school so far?
14. Do you elicit for community participation towards gender equality in the school?
15. What problems are making it difficult to attain gender equality in the technical secondary school?

Appendix 13

CHILD'S SCHOOL ..... GRADE ..... SCHOOL ..... No.....

SEX OF PARENT INTERVIEWED ..... MARITAL STATUS .....

LEVEL OF EDUCATION: Mother ..... Father .....

OCCUPATION: Mother ..... Father .....

1. How many children do you have?
2. How many of these are girls or boys?
3. How many of your children have not gone up to Grade 12 or above in their education?
4. How many of these are girls or boys?
5. If they did not, why did each child not go far in his/her education?
6. How far should girls or boys go in their education?
7. Who makes the decisions about your children's education?
8. Who pays for your children's education?
9. Who does your child consult more for matters concerning i) academic work? ii) finances? iii) Others? Why
10. Do you experience any problems in paying for your children's education?
11. Have you ever visited your child at school?
12. Does the school invite you for any meetings?
13. Does your spouse also attend such meetings?
14. What would you like your daughter(s) or son(s) to be after they have completed school?
15. Would you prefer a female teacher to a male teacher for your daughter(s) or son(s)?
16. Would you allow your son to cook when his mother and sisters are at home?
17. Would you allow your daughter to repair a leaking roof when her father and brothers are at home?
18. What is your opinion about allowing pregnant girls back in school?
19. What do you like/dislike about your daughter's school?
20. Would you want to remover your daughter or son to a different school?
21. What changes would you make to the school if you were the head teacher?