

**TEACHER'S PERCEPTIONS REGARDING SUBJECT AND CAREER  
CHOICES OF MALE AND FEMALE STUDENTS IN BOTSWANA  
SECONDARY SCHOOLS**

**BY**

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## **DECLARATION**

I declare that the mini dissertation for the degree of Masters in Education (Guidance and Counseling) at North West University, hereby submitted, has previously not been submitted by me for a degree at this or any other University, that is my own work in design and execution and that all material contained herein has been duly acknowledged.

**MOREMI .M. (MR)**

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## ABSTRACT

This study investigated teachers' perceptions of subjects and career choices of male and female students in relation to gender in six selected schools in Botswana. The study aims to raise awareness about a number of aspects that need to be considered in order to produce plans leading to the achievement of gender equality in education. Such perceptions needs to be investigated because students' choices of certain subjects, careers and academic performance are to some extent determined by teachers' perceptions of gender based opportunities .

A total of 36 respondents , (males n=16 and females n=20) participated in this study. To carry out this study , the design used was a survey and data was collected using questionnaires in sampled schools. In presenting data , percentages were used to determine what teachers perceive to be the chances of success of male and female students. Graphs, tables and figures were also used in the presentation and analysis of data.

The results show that the school system plays a significant role in creating and maintaining gender differences. It was found that teachers recommended scientific and technical related subjects and occupations to male students while humanities and domestic related subjects are recommended to female students. Gender biased teaching style and textbooks were found to be the main influential factors in teachers' perceptions. Most of the respondents were generally not satisfied with the teacher training on gender issues. The goal of better serving the students does not entail neglecting or suppressing the other gender.

By putting boys and girls on equal 'plain' the gender stereotypes may be counteracted and eliminated ,so education may begin to be more gender balanced. Most importantly boys and girls must be equipped with skills that will help them pursue their potential regardless of their gender.

## **CHAPTER 1**

### **1. INTRODUCTION**

#### **1.1 BACKGROUND OF THE STUDY**

It is becoming increasingly clear that the survival of a household depends on the abilities and income of the family. Formal education is perceived in many African Countries as having both private and social returns. Many parents who send their children to school do so with the hope that formal education will pave their children way to good jobs and in turn to good life. According to Datta (1990:33) when parents in Uganda were interviewed on why they send their children to schools they responded education that would help their sons obtain good jobs and daughters fetch a high bride wealth. Today people skilled in art, science and technology are in position to earn a better living because of their scarce skills (Botswana Guardian, 2003). Those without such skills are at a disadvantage. It is therefore very important that all students, irrespective of gender should be given equal chances and opportunities in education.

Schools are very gender conscious ( Hough 1998:17). The move to equality of opportunities with regard to the curriculum is hesitant. There are still 'boy subjects' and girl subjects'. Underlying this is the fear of sexuality. Gender restraints on both boys and girls are rigorous, and teachers find it difficult to cope with feminine boys and masculine girls

According to Ozga (1993:83) schools are very much predicted on the need to control children, and, as in all situations where control is almost like the "raison d'être" – like prisons – the very matters that are most feared become activated. Schools use crude gender paradigms to control their members, and so their

problems arise in gender forms – such as the unequal treatment of boys and girls, men and women and the concentration on certain forms of achievement rather than others. Gender stereotyping is the means of avoiding the realities of sexuality and the importance of individuality.

Apple (1987:34) believed that children's education background and even the kind of employment they finally obtain are largely determined by their gender. Educational opportunities have mostly favored males and the number of women in higher positions is relatively low. It is mostly males who hold high income jobs in the work sector. It appears that the gender stereotypes create a barrier whenever a person of either gender enters a field that is traditionally believed to be suitable for the other gender. This is, for example, where women join fields such as engineering and men join fields such as nursing.

*"At the professional level in the United States, elementary school teachers and nurses are usually women while engineers are usually men. Thus, women may be considered better suited to the elementary school teachers because they are nurturant and men are better suited to be engineers because they are logical." (Best 1990: 96)*

There are factors that contribute to this situation. Though the society in which the child lives in has a lot of influence in the type of careers that one will pursue in life Teachers in the formal education system also seem to contribute a lot because they are looked at as role models by students and also spend prolonged time with them The teachers' perceptions of gender based opportunities may have a lot of influence on the type of subjects students study and finally the occupational careers they follow.



In Botswana, certain jobs such as engineering and medicine are labeled man's job while some such as nursing and teaching or becoming a chef are viewed as women's job. According to the Education Statistics in Botswana (2001/2002) the total enrolment at the University of Botswana per faculty revealed that many males (1,125) registered for engineering and technology while only 147 females registered for the same course. In science only 353 females registered for science while 1,031 males registered for science.

According to Haynes and Hopson (1990) the choice of occupation is very important because the lifestyle one would lead is largely determined by one's occupation. The work that one finally choose largely determined by one's performance at school. It has been observed by Gender and Education Committee of Botswana (1989) that the subjects one chooses now are the building blocks to various careers in one's future and may determine the occupations one will be able to select in the future. Another similar observation was made by Kann (1981:20) who noticed a high correlation between the type of education an individual pursues and the type of work he or she will engage in.

Before Botswana advanced to her level of technology and Science, most women were confined to their rural activities and very few were engaged in professional and administrative careers which were considered suitable for males. According to Duncan (1990), with world wide technological advances women have become better educated and have also been exposed to more opportunities. However, despite all these changes, Botswana's traditional values still bar women from certain careers. Although there might be many factors, contributing to the low status of women, (Bhusumane et al 1991: 96) viewed the school and home as two

important institutions that play a major role in socializing boys and girls toward or away from certain careers. The family provides the children with their first social experiences. Parents and others who are closer or interact with the child not only provide role models with which the child can identify, but they also may influence the child into believing that certain jobs are for men and others for women. The type of toys bought for children by their parents indicates what parents expect their children's role to be in the future. A good example may be parents buying dolls for girls and not for boys despite the fact that they are both born to be parents in the future. Boys on the other hand usually get toy cars and guns. This may influence them to work with machines in later life.

The teacher is a professional in the school setting. Most classroom teachers see their students nearly everyday and therefore are in a strong position to be aware of their personalities.

Teachers have the duty to enable students whether male or female to acquire knowledge about themselves and assist them to choose careers wisely. Often students in Secondary schools do not have such total freedom, instead they are mostly directed into taking subjects which in turn compel them to choose certain careers.

According to The Gender and Education Committee (1989:24), what a student experiences in school may continue to follow them after they have left the normal school setting. Teachers may encourage young people through their actions and comments to focus their attention on specific careers, be it educational or occupational and this is likely to inhibit an exploration of a wider occupational world. Job stereotyping-in terms of gender is one of the main causes of disappointment to

the newly employed. The teachers' job should be to provide students with a wide range of factual information so that the students will be able to build a realistic picture of themselves which is not influenced by external agents.

Despite their gender, people have different strengths and weaknesses. Therefore particular attention should be paid by teachers not to pay particular attention to gender but to the interests, abilities and asset of particular individuals and these should be matched against the requirements of occupations.

Considering the importance and influence of career and gender, there has been a number of studies of life about the importance of career guidance and also on gender. Very little has been said about how teachers' perception of gender biased opportunities may influence the types of subjects a student may pursue at a senior secondary school level, how such perceptions may motivate or not motivate students and how they may end up choosing careers that are associated with their teachers' perceptions or advises at school. People differ in abilities, interest and personalities. It is this gender based perspective that has led many youngsters to move away from certain careers because they were made to understand that as males and females they could not afford certain occupational areas.

The research by Nyathi (1992) provided evidence of a significant gender gap in academic performance in favour of boys at secondary level. In the 1992 Cambridge School Certificate Examination in Botswana boys performed better than girls in 14 out of 18 subjects. The differential is marked in mathematics, science and technology as illustrated in table 1 below.

**Table 1** 1990 Cambridge School Certificate Examinations in Botswana

| Gender subject | Mathematics | Integrated science | Designs and technology |
|----------------|-------------|--------------------|------------------------|
| Boys           | 75%         | 81%                | 80%                    |
| Girls          | 68%         | 66%                | 57%                    |

**Source:** Nyathi, L. *The Girl Child in Botswana and Educational Constraints and Prospects*, Gaborone, UNICER, (1992:34)

The under performance of girls leads to lower participation in many areas of post school education and training and consequently affects their employment opportunities (Safir, Ben and Kupermintz 1992: 439). Instead of teachers, in their capacities as enlightened members of the Society liberating the other members from this practice of gender bias, they may instead channel students into certain subjects depending on the students' gender. At their school days these students may make limited choices. It is for this reason that the researcher will conduct a study on teachers' perceptions of subject and career choices of students by gender in schools.

## 1.2 STATEMENT OF THE PROBLEM

Eliminating gender gaps and gender inequality means bringing the disadvantaged gender at par with favoured gender. It ensures that both genders leave the school system with an education that provides life skills and permits them to pursue higher levels of education or vocational training according to their capabilities and is free from gender stereotyping. Most importantly, they should be equipped with skills and attitudes that will help them pursue their potential regardless of their gender. In Botswana, girls constitute the disadvantaged gender, but in a few cases boys are more disadvantaged in domestic skills (Nyathi L. 1992: 35). When the girls of today

are women, they may need technical, scientific, mechanical and mathematical skills formerly needed only by men. Today's boys may need domestic skills, which their fathers did not have. If the skills each gender requires are taught to all students, all students will be equipped for whatever the world awaits them. It is for this reason that this study seeks to investigate teachers' perception of subject and career choices of students by gender in senior secondary schools in Botswana. This study is also based on the assumption that teachers' are likely to perceive subject and career choices differently for male and female students. The teachers' perceptions are an extension of the society's attitude towards gender. It is the researcher's intention to investigate the teachers perceptions of subjects and career choices of male and female students in Senior Secondary Schools in Botswana.

### **1.3. SIGNIFICANCE OF THE STUDY**

The assumptions on which this study will be based are that policy makers, educational administrators and curriculum developers would be assisted by this study to develop the curriculum and revise, renew or rewrite text books that promote gender equality. They should also develop a positive attitude toward girl's education and adopt effective policies to extend the accessibility of girls to education in order to increase gender participation in education. Teachers will also benefit from the study as it will raise awareness about a number of aspects that teachers need in order to produce plans leading to the achievement of gender equality in education. Students would find the study useful as curriculum developers and teachers would present gender equitable roles and ensure that teaching materials are free from gender bias and that teachers use gender specific language and avoid gender bias in their teaching roles. The study may also be useful on minimizing some frustrations that may be faced by youngsters when they discover that the jobs they are engaged in do not suit their capabilities and interest.

#### **1.4 PURPOSE OF THE STUDY**

This study investigated Botswana Senior Secondary Schools teachers perceptions of subject and career choices of students by gender. Such perceptions need to be investigated because students choices of certain subjects, career choices and even their academic performances are to some extent determined by teachers perceptions of gender based opportunities. For this study the following research questions will be investigated:

1. Which subjects do male teachers recommend for male and female students? (Item 31& 32: 79)
2. Do male and female teachers perceive subject performance of male and female students the same? (Item 7,8,9,10,16,17,20: 67,72,73,75)
3. Which occupations are perceived by female and male teachers to be suitable for male and female students? (Item 19,20,22,23,: 72,73,74,75)
4. Which occupations are recommended for male and female students by male and female teachers.? (Item 11,16,19,20,22: 68,72,73,75,78,79)

## 1.5 DEFINITION OF TERMS

### **Gender**

Morris and Maisto (1998:16) defined gender as the psychological and social meaning attached to being biologically, male or female. Papalia (2001: 210) defined gender as significance of being male or female. "It is the social expectations about behaviour regarded as appropriate for the members of each sex, the socially formed traits of masculinity and femininity" Giddens (1993:27). For this study it refers to the roles and responsibilities of boys and girls in schools that are created in our families, societies and our cultures. It also includes the expectations held about the characteristics, aptitudes and likely behaviour of both boys and girls.

It is also defined as the socially, historically and culturally constructed differences between men and women as opposed to their biological differences.

### **Gender roles**

Papalia (2001:287) defined roles as the behaviours, interests, attitudes, skills and personality traits that a culture considers appropriate for males or females. Sdorow (1998:125) refers to gender roles as the behaviour that are considered appropriate for females or males in given culture. "Behaviours that we expect each gender to engage in" Maisto and Morris (1998). In this study it will be a set of behaviours and attitudes that are socially associated with being male or females.

### **Gender equity**

"Means that women and men have equal conditions for realising their full human rights and for contributing and benefiting from economic, social, cultural and political development" ( William. 1994:9). It is the equal valuing by society of the similarities and differences of men and woman and the roles they play. Equality between men

and women entails the concept that all human beings, both men and women, are free to develop their personal skills and make choices without limitations set by stereotypes, rigid gender roles and prejudices. Gender equality means that the different behaviours, aspirations and needs of women and men are considered, valued and favoured equally. It does not mean that women and men have to become the same, but their rights, responsibilities and opportunities will depend on whether they are born male or female.

### **Gender Stereotypes**

According to Morris and Maisto (1998) these are general beliefs about characteristics that are presumed to be typical of each gender. For example: in most cultures men are seen as dominant, strong and aggressive, whereas women are viewed as affectionate and soft-hearted.

### **Gender Analysis**

Rush (2000) defined gender analysis as a thorough analysis between men and women and the impact that certain policies have on both sexes. Gender analysis also facilitates strategic use of distinct knowledge and skills possessed by women and men.

### **Gender mainstreaming**

Based on gender analysis (Rush 2000) defined gender mainstreaming as a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programs in all political, economic and societal spheres. This is done so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality.



For the purpose of this study it is defined as the process of being fair to boys and girls in the school. To ensure fairness, measures must often be put in place to compensate for the historical and social disadvantages that prevent boys and girls from operating on a level playing field. A gender equity student is a female student in a predominately female study option.

### **Culture**

Giddens (1993: 18) explained culture as consisting of all tangible things a society produces as well as the intangible beliefs, values, traditions and norms of behaviour, its people share. In a society as large and diverse as South Africa is, there are many sub cultural groups with their own cultural identities.

### **Career**

A profession one intends to follow for the part or whole of one's life (Giddens 1993:269).

### **Career developments**

According to Aabobe, Bogwasi and Ojang (2001) career development is the process of choosing, taking up, adjusting to and advancing in an occupation. With students career development mostly focuses on long range planning with short term implications. This means that even though entry into the world of work might be a decade away, the planning has to be done in the immediate future

## **1.6 LIMITATION AND DELIMITATION OF THE STUDY**

The nature of the topic of this study is a limitation in itself since senior secondary schools in the southern region of Botswana are many and further apart from each other in terms of distance. Finance and time factor contributed to the researcher not meeting the deadline and thus most respondents were unreachable. A particular interest was developed in the Southern schools because the researcher is also

based in the southern region in carrying out this study certain problems were encountered. The study itself was perceived by male respondents as not necessary since they maintain that gender bias does not exist in the schools. As a result of this kind of attitude, the researcher found himself with problems such as unfriendly attitude and lack of clarity with some answers. There were attempts to conceal gender biases by some of the respondents in this study and it is the researcher's thought that a study such as this should be carried out with both observation and with a questionnaire.

## **1.7 ACCESS AND ETHICAL CONSIDERATIONS**

The following institutions and individuals were acknowledged for giving the researcher access to their premises to gather knowledge and the relevant information for this study. They were also assured of confidentiality and anonymity in the writing of this research.

- All teachers – Senior Secondary Schools used in this study
- Schools Heads of the sampled schools
- North West University Library
- University of Botswana Library
- Mr. Joe Mensah – Molepolole College of Education
- Dr Rex O' Mara – Principal T.C.E. Botswana
- The Southern Regional education Officers.

## CHAPTER 2

### 2. LITERATURE REVIEW

#### 2.1 GENDER-BIASED TEACHING STYLE

The differences that exist between males and females reflect the labels put on women and maybe worsened by teachers at school. Grugeon (1993:19) observed that though male and female come to school with preconceived ideas about, gender roles, gender bias seems to be encouraged by teachers at school. All these factors will affect the academic performance of females and finally the type of career they will pursue. According to Duncan (1990:20) girls are continuously reminded by various aspects of the school structure, the expectations of their teachers and teaching practices that their primary roles are to be wives and mother.

Students learn a lot about their strengths and weaknesses from their teachers, even if teachers do say much about the strengths and weaknesses of each gender. Williams and Best (1990:17) indicated that if teachers themselves hold a belief that male students are different from female one's then they are bound to recommend certain courses to female students and others to male students. Students are able to infer from what Duncan (1990:21) termed the "hidden curriculum". This hidden curriculum is conveyed through the teachers' attitudes and behaviours. One of the ways teachers show their bias is through their tendency to concentrate more on the type of gender, either male or females.

Bryne (1998: 58) revealed that;

*"... what we do not teach, highlight or illuminate for bias, is often more influential as a factor for bias than what we do. Much of what girls learn and experience in secondary years will*

*condition their attitude to husbands, colleagues, workmates, their acceptance or questioning of governmental systems."*

Skolmick, Langbort and Day (1995:39) also maintain that though in theory teachers believe the democratic function of education, that it should give equal opportunities to all students, they themselves influence sex stereotypes. They further observed that even the most egalitarian minded teachers sometimes unintentionally respond to children in sex typed fashion.

According to the American Association of University Women (AAUW (1992) differential teacher classroom behaviour, student performance and subject choice discrepancies are among the detrimental effects that have been investigated with respect to teacher perceptions of gender roles. In the area of performance discrepancies, the AAUW report noted an approximately 40 point difference in mathematics scores favouring boys. It is also reported that in Israel, the gap between girls' and boys' achievements in mathematics is the highest in the world (Rotem, 1998:43).

## **2.2 GENDER INEQUALITIES IN EDUCATION IN BOTSWANA**

*"Botswana government is well aware of the gender imbalance in the vocational education and is seeking ways to address this. Greater access for girls and women is one of the main goals and the Ministry of Education is actively engaged in addressing this area." (The Revised National Policy on Education, Botswana 1999:41)*

The following table shows enrolment in vocational and technical training from 1988 to 1998 in Botswana.

**Table 2: Enrolment at all levels in Vocational and Technical Training**

| Year   | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Male   | 1.676 | 2.136 | 2.558 | 2.474 | 2.730 | 3.263 | 3.814 | 5.563 | 4.351 | 5.598 | 6.226 |
| Female | 838   | 1.007 | 956   | 1.135 | 1.368 | 1.412 | 1.667 | 2.532 | 1.857 | 3.232 | 3.713 |
| Total  | 2.514 | 3.143 | 3.514 | 3.609 | 4.098 | 4.675 | 5.481 | 8.095 | 6.208 | 8.830 | 9.939 |
| %      | 33.3  | 32.0  | 27.2  | 31.4  | 33.4  | 30.2  | 30.4  | 31.3  | 29.9  | 36.6  | 37.4  |

(Source: Education Statistics, Botswana, 1998: 1).

Table 2 clearly shows greater imbalances in Vocational and Technical Training in Botswana as was observed by the Revised National Policy of Education Report of 1999. More boys are enrolled in the technical and vocational field more than girl students.

Since girls have been made to understand that certain subjects are not for them, but for boys, their chances of taking courses related to these subjects are limited. Data collected from the education statistics shows that women at the university are predominantly enrolled in the humanities, social and commerce degree programme.

(Educational statistics 1998: 1)

**Table 3: 1998/99 University of Botswana enrolment by faculty and year of study**

| SCIENCE                       | YEAR 1 |        | YEAR 2 |        | YEAR 3 |        | YEAR 4 |        | YEAR 5 |        |
|-------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                               | Male   | Female | Male   | Female | Male   | Female | Male   | Female | Male   | Female |
| Total<br>fulltime<br>students | 1 548  | 1 038  | 1 243  | 871    | 705    | 576    | 476    | 455    | 25     | 16     |

(Source: education statistics Botswana, 1998: 129)

Table 3 shows that a total of 3 997 males were enrolled in science subjects while only 2 956 females were also enrolled in the science subjects.

**Table 4: University of Botswana enrolment by faculty and year of study****1998/99****Humanities**

| YEAR 1 |        | YEAR 2 |        | YEAR 3 |        | YEAR 4 |        | YEAR 5 |        |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Male   | Female | Male   | Female | Male   | Female | Male   | Female | Male   | Female |
| 196    | 251    | 198    | 256    | 118    | 165    | 94     | 122    | -      | -      |

*(Source: Education Statistics Botswana, 1998: 132)*

Table 4 reflects that a total of 794 female students were enrolled in Humanities as compared to only 606 males. Perhaps the most of gender discrepancies or unequivocally is clearly shown by the engineering and technology faculty of the University of Botswana. The table below shows an all-round male dominance in the field of Engineering and Technology.

**Table 5: University of Botswana enrolment by Faculty and Year of study****1998/99****Engineering and Technology**

| YEAR 1 |        | YEAR 2 |        | YEAR 3 |        | YEAR 4 |        | YEAR 5 |        |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Male   | Female | Male   | Female | Male   | Female | Male   | Female | Male   | Female |
| 271    | 32     | 289    | 33     | 162    | 21     | 43     | 11     | 14     | 3      |

*(Source: Education statistics Botswana 1998:133)*

Table 5 shows that during the years 1998/99 a total of 779 male students were enrolled in the Engineering and Technology faculty of the University of Botswana as compare to only 100 female students in that field.

The Botswana Vision 2016 observed that women are under represented in key decision making positions. The vision indicated that Science and Technology must be emphasised through the education system and that all children with appropriate aptitude, male and female should be encouraged to study sciences. The vision further emphasised that gender awareness must be institutionalized throughout the education system in order to create a gender sensitive, caring and equitable society by the year 2016. It recommended that educational materials, curricular and teaching methods must be reviewed to make them more gender sensitive. The vision also demanded the need for teacher to be sensitized to change attitudes that discriminate against female students.

Science and Technology has become an integral part of human life. The economic prosperity of a nation like Botswana is interlinked with its skilful utilization and management of science and technology. This underscores the importance of skilled human resources in the science and technology fields. The key agency through which such skilled human resources can be developed is the educational system of the country; and the role of Senior Secondary Schools as such a development cannot be under estimated (Report of the Education Commission on Education, 1993: 139).

In Botswana, there is a shortage of skilled human resources, particularly in the fields of science and technology (Republic of Botswana, 1996). Debate in education is abused on how the Senior Secondary Schools system can be geared to prepare youngsters, in particular girls, effectively, for the world of work in science and technology dominated Society. According to Ray (1998) very few women in Botswana are being trained to become scientists, doctors or engineers. Enrolment figures in the faculty of Science University of Botswana illustrate the point.

The 2001/2002 University of Botswana enrolment in engineering and technology still showed a grand total of 1,125 males to only 147 males in this field (Education Statistics, 2001: 53).

The same disparity is experienced in the faculty of science as shown by the table 6 below.

**Table 6 University of Botswana Enrolment by Faculty and Gender 2001/2002**

**FACULTY OF SCIENCE**

| <b><u>DIPLOMA</u></b>  | <b><u>MALE</u></b> | <b><u>FEMALE</u></b> |
|------------------------|--------------------|----------------------|
| Computer Science       | 124                | 62                   |
| <b>SUB TOTAL</b>       | <b>124</b>         | <b>62</b>            |
| <b>DEGREE</b>          |                    |                      |
| Bachelor of Science    | 768                | 235                  |
| BSc (Computer Science) | 112                | 41                   |
| BSc (Urban & Regional) | 27                 | 15                   |
| <b>SUB TOTAL</b>       | <b>907</b>         | <b>291</b>           |
| <b>TOTAL SCIENCE</b>   | <b>1031</b>        | <b>353</b>           |
| Percentage Share       | 74%                | 26%                  |

(Source Botswana Education Statistics 2001/02)



**Table 7 University of Botswana enrolment by Faculty and Gender 2000/2001  
ENGINEERING AND TECHNOLOGY**

| CERTIFICATE                                       | MALE        | FEMALE     |
|---|-------------|------------|
| Construction ( technician)                        | 41          | 5          |
| Electrical engineering                            | 65          | 8          |
| Motor vehicle (technician)                        | 65          | 1          |
| Plant engineering                                 | 62          | 3          |
| Refrigeration (technician)                        | 34          | 3          |
| Science laboratory (technician)                   | 15          | 9          |
| Vocational training instructor                    | 20          | 5          |
| <b>SUB TOTAL</b>                                  | <b>302</b>  | <b>34</b>  |
| <b>DIPLOMA</b>                                    |             |            |
| Civil engineering                                 | 1           | -          |
| Electrical engineering                            | 78          | 6          |
| Land survey                                       | 19          | 2          |
| Mechanical engineering                            | 77          | 4          |
| Mining  | 50          | 4          |
| Water & Environmental engineering                 | 18          | 5          |
| High diploma in water and environment engineering | 3           | -          |
| High diploma in electrical engineering            | 36          | 6          |
| High diploma in mechanical engineering            | 10          | 1          |
| Tech diploma in civil engineering                 | 69          | 7          |
| <b>SUB TOTAL</b>                                  | <b>361</b>  | <b>35</b>  |
| <b>DEGREE</b>                                     |             |            |
| B.Ed (design & technology)                        | 90          | 10         |
| Bach eng (Building)                               | 20          | 4          |
| Bach. Engineering (civil)                         | 82          | 14         |
| B.Eng (Elect and electronic)                      | 105         | 15         |
| B.Eng (Mechanical)                                | 76          | 9          |
| <b>SUB TOTAL</b>                                  | <b>373</b>  | <b>52</b>  |
| <b>TOTAL ENGINEERING &amp; TECHNOLOGY</b>         | <b>1036</b> | <b>121</b> |

(Source: Education Statistics, Botswana 2001/2002)

According to Hobona (1993:98) pure sciences options (biology, chemistry and physics) in Botswana Senior Secondary Schools is usually meant for pupils aspiring for Science based careers. Mathematics is compulsory for all pupils preparing for the Cambridge Overseas School Certificate (COSC) Examinations .Pupils are selected for pure sciences on the basis of their academic performance in form 3, although they may opt for art subjects, if they wish.

Low academic achievements by females in Botswana schools are well documented (Marope 1994:219). In Senior Secondary Schools girls outnumber boys, but due to under achievement very few are selected to take pure sciences ( Hobona, 1993: 98).

Policy makers are aware of the problem of access of women in science and technology education. One of the recommendations of the National Commission on Education in Botswana with respect to science and technology is that:

Special measures should be developed to increase the participation and performance of girls in science, mathematics and technology.

(National Commission on Education, 1993: 181)

It has been suggested that the apathy of girls towards mathematics and science subjects, is mainly due to the socialization process, rather than being biological in nature. ( Marope, Taiwo and Molobe, 1994: 3). This socializing process includes the development of social values regarding the gender role and gender typing of some areas of study which leads to a set of restricted career options. According to Gilbert & Webster (1991: 1063) the perception that on average, girls are less intelligent than the boys is a by-product of acculturation process, and has no scientific basis whatsoever. Women are considered by many societies to be the inferior sex. This negative attitude of society lowers the self

concept and confidence level of the girls which in turn is reflected in lower performances in science and mathematics

Fountain (1991) found that gender inequities between boys and girls in schools continue to be amplified through the curriculum. He observed that patterns of interactions between boys and girls in school grounds, laboratories, refectories, language used and school management strategies seem to have elements of gender bias. He argued that the education system does not operate fairly for all pupils and that pupil achievements depend on a number of factors other than abilities.

Another study carried out by Fountain (1991) on the Curriculum demonstrated that boys and girls regarded occupations such as nursing, clerical and teaching as feminine, while males professions were viewed to scientific and technical field. The table below shows enrolment from the University of Botswana in faculty of Education by gender. There is still evidence as shown by the table below that females are still channeled through humanities subjects,

**Table 8 University of Botswana Enrolment by Faculty and Gender (2001/2002)**

**FACULTY OF EDUCATION**

| <b>CERTIFICATE</b>  | <b>MALES</b> | <b>FEMALES</b> |
|---------------------|--------------|----------------|
| Adult education     | 3            | 13             |
| Physical education  | 16           | 6              |
| <b>SUB TOTAL</b>    | <b>19</b>    | <b>19</b>      |
| <b>DIPLOMA</b>      |              |                |
| Adult education     | 22           | 31             |
| Home economics      | 6            | 61             |
| Physical education  | 81           | 61             |
| Secondary education | 72           | 25             |
| Special education   | 7            | 52             |
| <b>SUB TOTAL</b>    | <b>188</b>   | <b>230</b>     |

| <b>DEGREE</b>                             |            |            |
|---|------------|------------|
| B.Ed (adult)                              | 21         | 14         |
| B.Ed ( Home economics)                    | 3          | 77         |
| B.Ed ( Primary)                           | 68         | 270        |
| B.Ed (Science)                            | 290        | 112        |
| B.Ed (Secondary)                          | 47         | 57         |
| B.Ed (Special)                            | 71         | 89         |
| B.Ed (Physical)                           | 56         | 36         |
| Bachelor. of Nursing Science (Completion) | 10         | 74         |
| Bachelor of nursing SG (General)          | 47         | 78         |
| <b>SUB TOTAL</b>                          | <b>613</b> | <b>807</b> |

Even though the revised National policy in Botswana's Education has been implemented since 1994, traditional notions about female and male roles in our society hinder most males from studying traditionally feminine considered subjects. The statistics show female dominance in the field of Education, with overwhelming dominance of females in Home Economics, nursing and special education. These were subjects or roles traditionally considered to be feminine. There is still dominance of males in the field of science in education.

### 2.3 GENDER ROLES THAT STUDENTS ARE PREPARED FOR BY SCHOOLS

All students should have access to all school offerings, but in their daily lives students often have different needs and skills. Stromquist (1997:25) observed that girls may be responsible for and skilled at small plot farming and food preparation, while boys may be skilled at herding. Gender is a maker for many of these differences. He observed again that responding to these gender specific skill needs in the classroom can be regressive because it reinforces gender stereotypes. Girls may need to learn about cooking or vegetable gardens or traditional dancing but if these are only taught to girls, stereotypes and gender barriers are reinforced. The author further stated that when girls of today are women, they may need technical, scientific, mechanical and mathematical skills formerly needed only by men. When today's boys are men, they may also need domestic skills, which their fathers did not have. If the skills each gender requires are taught to all students, they will be equipped for whatever is required of them in their future careers.

Huang (1998:601) also observed that the school system itself plays a significant role in creating and maintaining gender differences. He noted that textbooks often represent gender bias present in society's view of the technical fields. Teaching styles also perpetrates the gender difference. A study conducted by the American Association of University of women (1999:3) revealed that teachers tend to focus more attention on boys, directing more encouragement to them, while girls are often overlooked in class. In light of these results teachers are apparently unaware of their biased actions. Traditional teacher training tends to cater for boys interests and behaviours as a means of keeping classroom order. Boys generally act out their frustrations in a manner often disruptive to the classroom. In contrast, girls predominantly repress their frustrations by withdrawing. Teachers' methods of

controlling boys included making them contribute often. Thus teachers have inadvertently favoured boys to girls in the traditional classroom setting.

As a result cultural bias, adults' expectations vary with respect to boys and girls. Even teachers often see a difference in potential between boys and girls, especially in technical areas. In problem situations where students appear stumped, adults tend to rescue girls then either by giving them easy tasks or by blatantly revealing the answer. With boys, however the general practice is to force them to figure it out themselves. Research by Huang (1998:604) has shown that this kind of "help" undermines girls' confidence in their abilities. Because of different self-esteem levels, boys and girls come to very different conclusions about themselves; even when the data on which they base their decisions are the same. Studies have demonstrated that boys accept success and take the credit for their accomplishment more readily than girls in schools. Thus, if girls continue to be bypassed when considering technical work, women will never have a stronghold (Huang 1998:605) in the technical fields and the traditional views will never be changed. In order to rectify the cycle, these stereotypical roles must be re-evaluated and girls must be encouraged to pursue more technical careers.

Historically women (like minority group members) have not been given career development opportunities equivalent to those available to majority group workers (Davis, 1996:325). When women were allowed to work their career opportunities have been confined to jobs at the lower levels of the occupational hierarchy. American Society has demonstrated the discouragement of women in the workforce, as established when laws were made preventing married women from working outside the home as the men returned from World War II (Grugeon, 1993).

More subtle discouragement continues to exist today with many working mothers feeling lack of support from their families and community.

Some cultures support working women and believe that husband and wife should have the same opportunity to work. Sweden, for example, has an 'equal roles family model' (Berk, 2000:534) programme in which child care centres are provided for all families by the government.

According to the United States Department of Education (1997:3) the labour force participation rate of males from 16 to 19 years of age with a high was 73.1 percent in 1996 compared to 65.6 percent of females in the same age group who were in labour force. The rates were also similar in the male and female populations who had less than a high school education with 16-19 year old males and females represented in the labour force by 46.9 percent and 44.4 percent respectively.

Early predictions that women would be increasing in numbers in college enrollment and employment seem to be accurate. According to Hotchkiss and Borrow (1996:281) women are currently earning more bachelor's and master's degrees than their numbers equal or exceed those earned by men, however, they continue to approach career development differently than men, earn less than men and enter into traditionally female jobs.

Specific career areas in which percentages of women have increased since 1972 include engineering (from 0.8 to 9.6%), law from (3.8 to 26.6%) and business executive and managerial (from 17.6 to 43%) although they only make up ten percent of senior management at big firms (Berk, 2000:534).

Berk (2000:534) also noted that in spite of these gains gender typical message influence a decline in academically talented females' achievement and career expectations during high school and college and in most career fields, women's achievements lag behind men's. Men are still writing more books, holding more leadership positions and producing more works of art. Women's progress into entering and excelling at traditionally male dominated professions has increased, but is still very slow.

*"Women remain heavily concentrated in the less well paid, traditionally feminine professions (Berk, 2000:534).*

In addition to the effect of role models on girls career decision-making styles, attitudes about child rearing and marriage also have an effect. Leo-Rhynie (1998:79) found gender role beliefs about parenting, marriage and career were central to the decision-making process of the rural women. The participants were women who had graduated in the upper 10 percent of their classes in high school. Conversely, men typically consider job status before marital status as priority in their lives.

Economic class status may also effect how high school girls and boys determine career choices. Hannah and Kahn (1989: 161) studied grade 12 students in urban schools where they were assured presentation from high and low income areas. The findings indicated that males predominantly selected male-dominated careers, while high socioeconomic status females were more likely to than low status females to choose male dominated occupations. Regardless of career prestige



levels, both genders in the low status group reported lower career expectations than the high status group.

Academic achievement and self-confidence levels of adolescent female students are also indicators of career decision-making styles and confidence levels. Girls are often more confident and have higher grades through elementary and middle school than when they reach high school (Reis, Goldsmith and Callahan, 1996:434). Studies conducted with gifted adolescent girls show self-efficiency levels which decline in high school (Kline and Short, 1996:118) and girls typically do not attribute their success to academic ability (Callahan, Cunningham and Plucker, 1994: 99).

However, Spielhagen (1996) observed that adolescent gifted females demonstrated pride in their potential and achievement. Similarly, Reis, Callahan and Goldsmith (1996:435) claimed the majority of their sample of poor Puerto Rican and African American female students to be able to demonstrate confidence in their abilities and attributed their success to their abilities. In this study, women prioritized their educational experience over dating and found support in their female peer groups. Adolescent girls may be beginning to look at careers and prioritize jobs differently than their mothers. However, women are continuing to choose careers that fit their care-giving needs and adolescent girls are continuing to be socialized to make similar decisions.

According to Papalia, Olds and Fieldman (2001: 293) the 1970s men were less likely than men to go to college and less likely to finish. The authors observed that during the 1990s the number of men enrolled in college graduate schools has declined steadily in relation to the rising number of women. However, women still

tend to major in traditionally 'feminine' fields, such as education, nursing and psychology. The great majority of engineering, computer science and mathematics degrees go to men, though the gender-gap in the life sciences has reversed in the past twenty years.

The combination of the facts that girls are given less chance to independently solve problems and that girls are harsher in judging their own achievements, has serious effects on their self-confidence. Thus, any differences in achievement may be rooted in these culturally different expectations (Papalia, Olds and Feldman 2001: 294).

While increasingly many women pursue higher education and careers, society still raises its girls with the option not to work for a living. However, current demographic statistics point out that nine times as many women as men are single parents, thus forcing more women than before to make a living. Because women have not been directed on career paths from the start, they often must settle for lower level jobs (Giddens, 1993:29). Thus women continue to be funneled into traditionally female occupations. In order to keep up with recent technological trends girls must be introduced at a young stage to science related subjects in schools.

Education has certainly been permitted by Patriarchal beliefs. This is clearly seen in the structure of the schools. Duncan(1990) is of the opinion that many research workers in education claim that gender disparities in participation and achievement are partly the product of the schools themselves. Research by Mutasa and Wills (1998) and mainly within industrialize countries has indicated that formal schooling can be a significance agent in teaching and reinforcing cultural expectations of

males and females schools, like other facets of society, transmit implicit messages and a attitude to their pupils and staff through everyday events that take place. Since the school is a mini community it often reflects the traditions and stereotypes that may exist within the population outside. These stereotype images have the effect of reducing people to conventional forms without any individuality. Stereotype images are often reinforced by the media and the society. According to Duncan (1990:52) imbalances between the sexes and the uneven distribution of power can be seen in staffing and authority structures of many schools. These usually indicate male dominance at senior levels especially in Secondary Schools institutions. It is common to find both the head and deputy head of a school to be male. Even though there could be many more female teachers in the school, they usually occupy less responsible posts.

The existence of gender typing within the curriculum is demonstrated by the attitudes of pupils to their school subjects. This can have a dramatic effect on subject and career choice. Intensive study in Europe according to Kelly (1994: 133) indicated that certain subjects like woodwork, physics, mathematics and chemistry are often identified by pupils as being masculine, while subjects like English, French, typing and cooking are more feminine ones. It should be remembered that gender typing is not standard throughout the world. Mutasa (1990:23) pointed out that the situation in Eastern European Countries has been quite different. Female involvement in Science at school and beyond has been much greater and this may be attributed to the higher status of women or their greater equality within the society. Other regional differences in gender typing have been noted. Research by Duncan (1990: 52) in Botswana found that mathematics was a more neutral subject for many students, while history a more masculine one. What is significant for teachers is to realize that how pupils view their particular subjects can often affect

their ultimate choice and performance in them. Duncan (1990: 52) also found that the enrolment of pupils in schools may not be a 50% split between the genders. In African countries girls and boys are often concentrated differentially across different types of schools. In 1985 only 42% of all form five pupils in Botswana were girls (Duncan 1990:53). The reason for this imbalance was found to be that in some rural areas girls predominate in primary classes because many boys are still involved with traditional tasks like cattle handling. Yet in secondary schools girls often leave earlier because of marriage, pregnancy or lack of funding. Some families may prefer boys to be educated rather than girls.

Kelly (1994: 133) has argued that science is perceived as a masculine activity. Some of the reasons for this are as listed below.

a) **DIFFERENCE OF NUMBER**

Larger number of boys compared to girls study science subjects (especially physical science and chemistry). For example, in Britain about seventy to eighty percent of all examination entries in physics are from boys. This according to Duncan may differ from country to country but figures in Botswana in 1991 were comparable with 69% of all physics entries from boys (National Commission for Education 1993). These figures are complimented by the fact that there are usually more male than female science teachers, especially in physics and chemistry. Duncan (1990: 53) also noted that this conveys the message that this area of curriculum is a male domain. This is manifested even at the senior level of science careers. For example, only 3% of senior science positions in British Universities have been held by women since the 1960's (New Scientist 1994: 3) although this figure could be different in other countries.

**b) PACKAGING SCIENCE**

Kelly (1994: 133) also found that science has been packaged in ways that tend to associate it with males. Textbooks and Courses appear to reinforce male interests. Science in this respect is seen to be more about things rather than people. Male images have traditionally tended to dominate the pages of science textbooks with many more illustrations and references than for females. Kelly and Smail (1994) argued that when women have been featured in textbooks stereotyping of their expected roles is often over emphasized. Images of women as nurses, pushing prams, cooking and playing with children have been common place

**c) CLASSROOM BEHAVIOURS AND INTERACTIONS**

Kelly and Smail (1994: 154) discovered that many of the activities that take place within the science room continue to reinforce the gender differences that exist in out of school contexts. Teachers are often seen to take more notice of boys at the expense of girls. Boys are often observed to dominate the laboratory especially during practical sessions establishing it as their territory. Girls may feel less inclined to get stuck in to certain aspects of practical work preferring a more cautious approach to areas of uncertainty

**d) TEACHING AND LEARNING STYLES**

Girls and boys differ in interests and experiences in Science (Kelly 1990). Many boys are attracted to the physical aspects of science whilst many girls suffer from the lack of involvement in electrical and mechanical experiences. The traditional teaching methods of physics involving wires, tools, abstract

objects and mechanical things are not always attractive to girls. The general move in course design from the science of "things" and facts to the science of people, real life and human needs is potentially much more attractive and accessible to girls.

"The gender stereotyping of science cannot be divorced from gender stereotyping generally" (Alison Kelly 1994:65)

Kelly also observed that a major step in addressing gender problems is to appreciate they are an issue that has to be handled. Unfortunately, many teachers are so preoccupied with other aspects of teaching, they fail to recognize, gender inequality in the classrooms like other members of the society, Kelly found that teachers are also affected by habit, stereotyping and cultural norms.

According to Acker (1994) many studies in gender and education literature imply that teachers play an important part in thwarting of girls' potential. This impact happens in a variety of ways, such as treating the sexes differently or holding differential expectations for them. Acker found that sometimes the input is more direct part of the school's gender regime or gender code, whereby messages about models of masculinity and femininity are contained in everyday school practices such as pupil grouping and timetabling, and in the sexual division of labour among teachers.

*"By starting out on the same fast motorway or slower coveyting road to their destination, as their brothers. But whereas we teach boys the intricacy of the spaghetti junctions of curricular routes..... We have other girls on single tracks or at best, dual carriageways,*

*with very few side turning junctions, or crossroads. The traditional arts/science split dies hard" ( Acker 1994).*

Grant (1992) observed that girls apparent avoidance of physical science and technical craft subjects is practically the only gender issue to reserve national attention. He found that there is a wide range of other issues found in the feminist literature such as sexual harassment, career blocks against women teachers, unequal teacher treatment of boys and girls and the weaving of gender differentiation into the fabric of school life. Apart from these historical studies (Grant 1992) also discovered that most of the empirical work on gender and education concentrates on processes within the classrooms and schools, especially teacher-pupil interaction. A study by Grant has tended to suggest that boys get more attention or teacher time than girls do. Using a computer technique called meta – analysis to review and combine data from more than 80 studies on the topic (many of them from United States). Grant (1992) reported the general trends as follows:

- Boys got more teacher interaction
- Girls on average participated in 44 percent of classroom interaction, although they were likely as boys to volunteer to answer teacher questions.
- Male Teachers gave less attention to girls than did female teachers.
- Girls got less criticism but also less instruction.
- Boys received more academic and more behavioural criticism.
- Girl's share of instruction was smallest among the oldest age group and in mathematics, but generally subject differences were minor.

Spender (1990) confidentially asserted that in many classrooms, as teachers persistently spend more time with the boys, accord more value to male experience treat the boys more as named individuals and identities, the pattern of making females marginal is relentlessly reinforced. He also found that what is most striking is the unselfconscious way in which mixed schools have used gender as a convenient administrative divider to organise registers, seat allocation, queuing, even coat hanging and story telling. The secondary

school option choice system, the stereotypes in textbooks, stories and examination materials and division of labour among the teaching staff have all been singled out as providing a lightly hidden curriculum of gender differentiation.

Joyce(1990) conducted a survey on teachers towards equality of genders. The results suggested that teachers were reluctant to accept equal opportunity initiatives such as girls into science and technology (GIST), a project intended to increase the proportions of girls opting for physical science in secondary school. The GIST researchers found science and craft teachers who were mostly men, believing there are natural gender differences and that sex equality is not an educational problem. They warned that positive action for girls would mean unacceptable discrimination against boys. Other surveys of secondary teachers (Acker,1994) found that there is support for equal opportunities in principle, but that teachers are disinclined to believe schools actually favour boys are wary about interfering in the processes whereby girls make traditional career choices

According to Acker (1994) feminist literature makes a strong case that girls and boys are treated unequally. Teachers are committed to advancing the interests of all the individual children in their charge. Yet gender equality initiatives, while most unknown are scarce and apparently failing to transform teachers attitudes and actions. Beliefs about education and gender may be particularly important as a source of resistance to anti – sexist initiatives. Acker (1994) argued that for implementation of an innovation to occur, changes to materials, teaching approaches and beliefs are necessary. He observed that materials are simplest to alter beliefs the most difficult, as they may be buried at the level of unconscious assumption.

The Teachers in Riddell's (1989) study were wont to ascribe responsibility for girls stereotyped subject option choices or narrow vocational horizons either to biological gender differences in ability or to childhood socialization, with some reference to parental,



peer and employee expectations. The influence was that there was little the school could do. Ridell's teachers believed strongly that the job of the school was to provide a value free environment in which pupils could exercise freedom of choice over subject options. There were, as she noted, contradictions between this claim and a number of administrative practices in the school that clearly limited free choice. Mickleson (1990: 44) know that explanation in gender differences in academic mathematics is done by examining of educational and occupational opportunities are stratified by gender. A sociological position would predict that the more opportunities are stratified by gender, the more performance will also be stratified by gender. He is of the opinion that a sociological interpretation of why one group of students such as males do better than another group, such as females can stem from making of differences in opportunities offered to the groups. He also observed that if males are afforded the possibility of greater future educational and occupational opportunities as a function of their mathematics performance, they may try harder. Teachers may encourage them more, and parents and friends may help them see that mathematics is a domain of performance that they should take very seriously. On the other hand female students faced with less opportunity may tend to see mathematics as less important for their futures and they may be told so in a number of ways by teachers, parents and friends. Wrigley (1992:83) also concurred with Mickleson that educational and occupational opportunities are stratified by gender in most sciences but the degree of inequality varies considerably across nations. Women's access to advanced educational and labour market opportunities are quite different in different nations and there is evidence to suggest that although gender stratification is decreasing worldwide, there is still variation among nations. Wrigley (1992:83) discovered that a sociological argument suggested that if opportunities and performances were limited, there should have been a relationship between large – scale trends in gender stratification of opportunities and gender differences in the mathematics of performance of students who are preparing for a particular opportunity structure within a country.

David Bakker and Parkins Jones (1991:171) conducted a study on opportunities and performance in a hand to explain gender differences in mathematics. They calculated the association between the various indicators of gender stratification in each system and the size of the gender difference in mathematics performance. They found that, as females gain more access to advanced training and to workplaces (in other words, as gender stratification decreases), Gender differences in middle school mathematics decreases. In countries with large proportions of women in higher education, gender differences in eight grade mathematics performance are smaller (or more away from a clear male advantage). Similarly, they found that the occupational status of females is related to the size of the gender difference in test performance among that society's eighth grade students. In systems with higher percentages of women working in formal work force, girls are more likely to perform as well or better than boys in mathematics. They also found that countries with the largest increase in women's access to advanced education and the labour market over this period had the largest declines in male advantage in school mathematics. They finally observed that concern over gender equality is increasingly incorporated into many organizations. Government, schools, armies, political parties and cultural associations are all examples of organizations which can promote gender equality. Gender stratification, particularly in terms of equal access to opportunity, is a source of legitimation that organizations cannot ignore. For example, the current Botswana army is 100% male only and there is a public outcry that females must form part of the army.

#### **2.4 GENDER ISSUES IN EDUCATION IN OTHER COUNTRIES**

One of the stated aims of the Israeli education system is to provide a learning environment in which all students can strive to achieve that potential. Despite that goal, gender inequality is manifested in the existence of educational discrepancies

in male and female student achievement aspirations, and self motivation. Research has shown that discrepancies are caused by Societal stereotyping by parents, peers and teachers who influence and reinforce gender role stereotypes. Eccles (1989:36) has found that teachers display differential behaviours toward their male and female students. The differential behaviour is often the results of teacher perceptions and attitudes toward their students, gender role, which mirror prevailing societal stereotypes. Tsvi-Mayer (1993:171) observed that despite indications that teacher perception of gender roles is one of the most influential factors concerning teacher differential behaviour and educational discrepancies, relatively few Israeli studies have addressed the issue of gender and teacher student classroom interaction.

In a society permeated by gender divisions and inequalities, it is implausible to suppose that the treatment of girls and boys as though they were already equal will result in the creation of genuine equality of opportunity. Gender is well established according to Wolpe (1990:15) as an organizing principle of the practices and power structures embedded within educational institutions and these will need to be fully addressed if access is to be meaningful. Management hierarchies within most schools are dominated by male teachers' Wolpe (1990:15) found that within the classroom there is evidence that both male and female teachers give more of their attention and time to boys, ask them more questions give them more praise and generally find them more interesting. Boys monopolize formal interaction, classroom workplace and resources especially in lessons of science and technology.

Research by the Assessment of Performance unit (1991:15) in London has shown that 15 year old boys enjoy mathematics and science (with the exception of biology) more than their female peers. Boys fared better in applying concepts in physics and

chemistry and in tests of physics knowledge but do less than girls in observational tests. The differences observed at age 15 do not appear to reflect natural aptitudes. Boys and girls are found to have similar attitudes towards mathematics at age 11 – both genders recognize its usefulness and girls actually enjoy it slightly more than boys. According to Wolpe (1990:19) attitudes towards mathematics emerge at a later stage. Performance and attitude differences in physics, however are established at a much earlier age and many plausibly be interpreted “as arising from differences in the science relevant out of school activities and interest of boys and girls as young children”. In part, girls’ disaffection from science appeared to be a response to sciences masculine and impersonal image.

“Whereas boys are interested in controlling the material world, girls consistently show greater interest in subjects they regard as having more to do with people than things (Gilligan 1991:15)”.

According to Gilligan (1991:16) attention should be paid to the structure and content of the science curriculum and to the way it is taught. Many science educators should propose the development of a “girl – friendly” science which could aim to teach traditional scientific principles but would do so initially through topics that are likely to interest girls. Other approaches emphasized the importance encouraging co-operation rather than competition within the classroom and developing a concern for social moral and ethical issues.

Velasco (2001:72) carried a research in Cambodia examining the views and perceptions of local stakeholders on issues on girls’ education. Local stakeholders consisted of Provincial/district education officials, school activities and teachers,

parents of girls in and out of school. The study aimed to gain better insights of the local access and equality in education opportunities faced by Cambodian girls. Six provinces of Kompong Cham, Kompong Thom Banteay, Meanchey, Kratie, Siem Riep and Ratana Kiri were included in the study. These provinces represented distinct geographic variation (urban, rural and remote) in Cambodia and presence of education programme intervention. These were expected to have important implications to girls' access to schooling opportunities. Focus Group discussions (FGD) were conducted with approximately 242 respondents across 5 types of unknown groups in the 6 selected provinces. The research findings showed an overwhelming pattern of responses across all types of respondents indicating housework, sibling care, farmwork and earning income as predominant reasons why girls do not attend school or would drop-out from school in highly significant rates compared to boys. It confirmed that constraining gender socialisation and rigid ideas of gender roles in household division of labour combined with parental perceptions of benefits on girls' education and socio economic and geographic disadvantages resulted to marked gender imbalances in the education outcomes in Cambodia, which significantly favoured males more than females. In the school system, three factors found to be significantly determined girls' attendance and combined stay in school were:

- a) Adequate school facilities such as classrooms and water and sanitation facilities.
- b) Quality of interaction between teachers and students (girls) and among students themselves.
- c) Quality of teaching and relevance of the curriculum.

While majority of respondents believed that boys and girls have equal rights to education and support the idea that women should actively participate with men in the economic sphere and contribute to household income. They are revealed a non-questioning attitude that housework and childcare remain to be the exclusive responsibility of women and girls. This posed a tremendous challenge and burden to women in their desire to develop their full potentials as individuals. Recommendations of the study were that there was a need to strengthen the Ministry of Education, Youth and Sports commitment and capacity to systematically integrate gender concepts in education planning, implementation and monitoring. It also calls to immediately put in place affirmative measures that will address the socio-economic, cultural and geographic disadvantages of girls' access to education and women's representation in the education management and delivery services at all levels. This should be supported with a massive multi-media campaign to promote women's role in the society and girls' equal access to education directly targeting parents, communities and schools.

In the area of subject choice discrepancies, Gillborn (1990:161) found that some high-status academic subjects, such as physics, are linked to a largely male student up-take.

Shamai (1994:665) stated that in Israel, the prevailing gender stereotypes in society reinforce the fact that female students choose predominantly humanities and domestic sciences, whereas male students choose science and technology. Placement in higher-level mathematics courses is said to be particularly selective in most schools and female students are proportionally underrepresented in these higher level mathematics and science courses. Ayalon and Yogev (1994:320) discussed that the differential course placement of both genders is not explained by variations in their ability but by the masculine image of mathematics and science.

Therefore, according to Oakes (1990:153) female students do not choose those courses, schools, teachers and counsellors operate different selection policies for female and male students regarding mathematics and science.

With respect to differential teacher classroom behaviour, Eccles (1989:36) and Shields (1992:53) found that boys are more likely to monopolise teacher-student interaction time. These authors found that some boys had 14 or more interactions per hour, compared with over half the students who had no interactions with the teacher over 10 days. Parsons, Kaczala and Meece (1982:322) found that expressions of high expectations raised student's expectations. They also found that praise to girls was less enthusiastic and less meaningful compared with that given to boys. According to Elwood and Comber (1996:6) girls are generally perceived to be more motivated and conscientious than boys, but boys are perceived as more self-assured and anxiety free. Words like brilliant, flair, sparkle and unique characterise descriptions of a good A level performance by boys. It is the boys who would come with something absolutely unique.

Ben, Lazarowitz and Safir (1989:231) found that in Israel, teachers of Grades K to 6 recalled significantly more boys than girls as their prominent students, and in general, boys were perceived as the best overall students. Boys were also perceived as being the best mathematics students, having the highest potential, occupying the teacher's mind the most, and presenting the most discipline problems. Girls were received as excelling in social skills and language arts. In a similar study concerning student perceptions of prominent peers, Safir, Ben and Kupermintz (1992:439) found that despite the tendency for each gender group to view same-gender as prominent, more boys were nominated. Boys ignored girls in their classes. That finding may indicate student absorption of the view that it is a

man's world, obtained from societal stereotypes in general and teachers' attitudes in particular.

According to Giddens (1993:53) school reading texts also help to perpetuate gender games. This author observed that storybooks in primary schools often portray boys as showing initiative and independence, while girls, if they appear at all, are more passive and watch their brothers. Statham (1986) also observed that stories written especially for girls often have an element of adventure in them, but usually taking the form of intrigues or mysteries in a domestic or school setting. Boys adventure stories are more wide ranging, having heroes who travel off distant places or are sturdily independent in other ways.

## **2.5 SOCIALIZATION AND GENDER STEREOTYPING**

It is mainly through socialization that in cell societies the females have to learn to behave differently from the males in order to conform to the image of an ideal male and female. The feminist movement has brought the whole issue of the subjugation of females by the male dominant society into the limelight (Abosi, Murangi and Kandjii, 1996:78).

According to Abosi, Murangi and Kandjii (1996:79) terms such as 'the female eunuch', 'the male chauvinist', 'the feminine mystique' became popular in 1960s and 1970s. The inequalities experienced by women all over the world have drawn the attention of sociologists to the issue of sexism and socialization, particularly in the educational systems. Abosi et al (1996:79) reported that 179 stories in six reading schemes in Britain reinforce gender stereotyping found in society at large:



*The girls who read them have already been schooled to believe, as our society does, that males are superior to females and better at everything other than domestic work (Abosi et al (1996:79).*

Hough (1988) point out that gender stereotyping starts even before the children go to school through the types of toys given to girls and the kinds of play they are encouraged to participate in. These stereotypes are reinforced by the media through books, TV shows, advertisements and others. Sharpe (1986) found that working class girls in London in 1970s showed their concern for love, marriage, husbands, children, jobs and careers more or less in that order. The research also indicated that in some British families more resources are allocated to the education of sons than daughters.

The findings of these research studies in Britain are equally pertinent in the developing countries, where the plight of women becomes much more conspicuous. Gender stereotyping in Botswana could be responsible for smaller enrolment of females in education and their still smaller representation in science, mathematics and technical subjects courses. The 2001/2002 Educations Statistics in Botswana revealed that 1,125 males were registered in engineering and technology as compared to only 147 females at the University of Botswana. The statistics also confirmed that in the same years 1,031 males were studying science at the University of Botswana as compared to only 353 females. These findings suggest that females are well represented in primary classes, but as they advance up the ladder they start dropping out till enrolment and achievement in sciences in Senior Secondary and tertiary education favours males. More importantly according to Abosi, Murangi and Kandjii (1996:79) gender stereotyping at home and in school affects the attitudes of female students negatively to influence their decisions to go

for non-science and non-technical subjects in a country of extreme manpower shortage in these areas. According to Kelly (1987:136) these findings are consistent with those in British research studies. All these studies indicate that early gender stereotyping is continued during schooling of the females and is ultimately responsible for their failure and subservience in the male dominant society.

In the light this review there is need therefore for the investigation of teachers' perception of their students' subjects and career choices by gender.

According to Mutasa and Wills (1998:77) there is little evidence to suggest any learning or achievement differences to women, compared to men are related to biological factors. The authors argued that research into visual spatial ability and scientific thinking between men and women is very inconclusive. The innate differences detected in males and females in the use of the left and right side of the brain also adds little weight to the discussion that men and women's brains are different. There is more evidence to suggest that gender differences between men and women are socially constructed and these have important influence on learning.

Mutasa and Wills (1998:77) argued that children are born with sexual differences. These differences are strongly reinforced in the gender roles that are adopted by individuals as a result of inclusion or conscious pressure applied by parents and after adults during the early years of childhood. This powerful natural "processing" involves emphasizing expectations and beliefs regarding how boys and girls should be treated in any particular society. The patriarchal nature of many societies has meant that men exercised unfair control and power over, women within the social

arena. Women have often been deliberately ignored and omitted from situations where they could and should compete equally with men. This situation, apart from creating imbalances between the genders, has resulted in quite different expectations arising as the norm. For example, the leadership and autonomy characteristics in men are often compared with submissiveness and dependence in women. This has tended to place females at a disadvantage to men in many aspects of their life, not only in education. Spender (1990:65) noted that girls have been reared into a world where women are encouraged to be emotionally and financially dependent upon men tending to make them a dependant group. This is a recurring theme in much of the literature concerning gender, especially from the feminist point of view.

Wood (1994:35) reported that women experience internal restrictions when considering full-time careers or nontraditional roles. To project oneself into an occupational environment dominated by men may indeed be a difficult task for many women who grew up under the influence of traditional gender stereotyping of occupations. Women who have considered only traditional jobs as a teacher, nurse or clerical worker find the contemplation of many other careers foreign to them. On one hand, early socialization has instilled identification with certain society-sanctioned gender roles, on the other hand, women are being told to break away from the traditional gender role. In general, some women lack confidence and self-esteem which tends to limit their career choice.

Lindsey (1990:21) suggested that our cultural heritage does not encourage women to excel in business related occupations. In our culture, the model for a business manager is typically masculine. Through social conditioning, men are perceived as teachers and better able to carry out demanding tasks. Women who have taken

leadership roles are often regarded merely as takers and their abilities and skills are questioned, even by their colleagues. Women are often made to feel like outsiders in organizations and are ostracized by the existing female and informal structure.

Wood (1994:24) contends that women need more experience (access to formal and informal structure) and exposure to feminine leadership role models to encourage a greater degree of motivation to attain leadership positions. He pointed out that women need special assistance with preparing applications for jobs that are primarily reserved for men. Displaced homemakers especially need this component because most have little experience in applying for a job. Women must not only learn the general skills needed for interviewing and resume writing, they must also be prepared to deal with discriminating practices associated with gender role stereotyping. In typical gender role stereotyping the woman is considered best suited as a homemaker and mother. When women work, it is assumed to be a necessity, as the man is perceived to be the primary breadwinner. Thus men are typified as leaders who make decisions; women are seen as passive, cooperative and unable to rise to leadership positions in the world of work. In essence, traditional gender role stereotyping implies that women are generally inferior in marital roles and work roles.

Bascow (1992:264) presents the current picture of the barriers women face to reach the top ranked jobs as rather discouraging women "confront a glass-ceiling" when trying to reach top ranked jobs. In 1990 fewer than three percent of the 6502 top jobs at Fortune 500 Companies were held by women, although this is up from one percent a decade before. At the current rate of increase. Gender equity will be reached in the executive suite in the year 2466 (Bascow 1992:264)

He also contends that career counseling approaches should be androgynous; that is free from gender role stereotyping. Counseling strategy components include job search skills, working climate, lifestyle skills, and support and follow up.

According to Bascow (1992:264), the preference for male children over female children is a worldwide phenomenon. For some cultures, female infants are swiftly disposed of following birth (French 1992). Thus it should not be surprising that many pregnant women place a higher value on giving birth to a boy than to a girl. These parental attitudes are relayed to children in terms of gender stereotypes that affect children's development. Lindsey (1990) supports the concept of differential parental attitudes towards infants, finding that parents regard boys as sturdier than girls and tend to play more roughly with baby boys. Evidence supports the contention that parents expect sons to be more active and aggressive and daughters to be passive and non assertive (Bascow, 1992:264).

Salomone (1996) contends that the growing boy is surrounded by a multiplying of social influences, including parental attitudes that facilitate his internalization of the masculine role. For example, parent tends to choose different types of toys for boys than for girls (Wood 1994). "Although this method of gender typing has decreased in recent years, there is evidence that parental choice of toys continues to be based on perceived appropriate gender – roles" (Lytton & Romney, 1991:267)

Differential parental expectations of boys and girls may, to some extent, influence career choices and other roles children envision for themselves. According to Wood (1994:24) parents as models and children's tendencies to associate or identify with same gender parents are powerful gender stereotypes that lead children to

prescribe to certain, they have observed. Boys are vigorously socialized into gender by their fathers; fathers and men in general appear to enforce appropriate roles on children and more intensely than women do (Wood, 1994:24). Fathers tend to attribute intelligence and aggressiveness to boys as role models that define manhood for them. They emulate fathers' examples to be masculine.

According to the cognitive development theory, once gender identity is developed much behaviour is organized around it (Lindsey, 1990:21). Parents who have been gender role socialised provide models to their children, who actively seek identification with the same gender parent. As boys learn gender concepts there is an increasing agreement with adult stereotyped. Thus, home tasks that parents consider appropriate for boys and girls reinforces learned gender role concepts. Rosenwasser (1989:9) suggested although there are changes as mothers' perceptions of appropriate tasks for girls and boys, tasks still tend to be gender typed.

The process of formal education further reinforces expectations learned in the home. Elementary school is often described as being very feminine in that the vast majority of teachers are women, thus providing feminine models for children (Tracy 1990:637). Evidence suggests that teachers in schools treat boys and girls differently. After reviewing research on this subject Doyle (1989) found that boys were encouraged to be more aggressive than girls, whereas girls were more likely to be noticed for independent, clinging behaviours. Boys are portrayed as being resourceful, brave and creative whereas girls are portrayed as passive, helpless and dull.

According to Etaugh and Liss (1992:129), there is a significant influence from our educational system on the development of gender stereotyped work roles.

"Feminine appropriate courses are language home economics and typing. Boys are encouraged to take mathematics and science courses.

Teachers respond differently to boys and girls in all grade levels, K-12; partly because teacher education training books are gender –biased."

(Etaugh and Liss: 1992:129)

Wood (1994:24) also suggests that schools reinforce gender role stereotypes in their curriculum by making women's achievements invisible. He gave an instance where men's accomplishments are highlighted in curriculum materials, whereas women's roles are often excluded. Thus, more attention given to males emphasizes that males are more important than females and that they are more able than females to lead and exert influence. Following this logic, men are to be chief executive officers, whereas women are more suited for supportive roles.

Wood (1994) also noted that appropriate future work role is made clear by educators and counselors, who further socialize boys and girls to conform to the established norms society has fostered. Teachers and counselors who endorse traditional gender role behaviour directly influence the choice of career options, and the message is clear to the boy that much more is expected of him in the way of career development.

Many children and adolescents watch television on the average on the average of 2 to 3 ½ hours. Some watch up to 7 hours (Nielsen Media Research, 1990). According to (Signorelli and Lears, 1992:157) what is relevant to our concerns here is that masculine and feminine roles , children observe on television programmes

may affect their perception of reality and of what is appropriate for adults to do in the real world. As Wood (1994) points out, Media are the "gatekeepers of information and images". Furthermore, the media greatly influence how we perceive gender roles.

Several researchers have charged that television programmes continue to reiterate the gender stereotyping of women as dependent and passive, as needing to look good in order to please men, and as greatly involved in relationships or housework, (Davis, Pareles 1990: Woodman, 1991). Children's television shows typically portrays of men as aggressive, dominant and involved in masculine accomplishments. Men are also seen in high status positions, where as women are expected to be younger, very physically attractive, and less outspoken than males. In sum, children see more males in significant roles, whereas females are usually relegated to minor roles with little responsibility concerning the outcome of a story. (Wood,1994). Jones (1991:231) also found that television commercials may also contribute to children's perceptions of appropriate gender role stereotypes .Products advertised by men represent a broad variety of uses and depict men in more dominant roles or as tough and rugged as in the " Marlboro man". On the other hand, women have been used to advertise products used in kitchens and bathrooms.

Wilson (1990) found that there is substantial evidence that boys and girls are highly stereotyped in children's books as well. He reviewed 206 children's books and grouped them into the following three categories: books published before the women's movement, books published since the women's movement and books selected from non stereotyped list of books, about girls. These results revealed that boys were the central character twice as often as girls in the first two categories of



children's books. Furthermore, boys were pictured more often – 3.2 ratio – on the covers of the books reviewed. The titles of books in the first two categories used boys more often than girls by more than 2.1. Interestingly, he found that, with the exception of books from stereotyped lists, the proportion of boys to girls on the covers of children's books was increased. Since the women's movement, an examination of the character roles portrayed in children's books indicate that girls were more expressive than boys, whereas boys were more likely to be portrayed as fulfilling goals.

In a more recent study of children's books, Purcell and Stewart (1990:177) concluded that significant differences still appear to how male and female roles are presented, males, continue to be presented as clever, brave, adventurous and as primary breadwinners, while females continue to be presented passive, victimized and goal constricted. Bascow (1992) argues that because males have greater visibility in children's readers and are given more active roles than females are, especially in occupations, stereotyped gender roles are reinforced.

Sapiro (1990:36) noted that women's care giving roles conflicts with their realization of economic reward for their educational investment. Traditionally women met needs of the old, the young and the sick within their families, but these needs are socially defined.. According to Sapiro (1990:36) the standards of mothering, for example, vary from era to era and from social class to social class. The increasing importance of education has led mothers to add a new element to care giving roles. Many now serve as the managers of their children's educational career. As education has become critical in getting good jobs, children's school success has mattered more within families. Parents increasingly worry about their children's performance and cognitive capacities. Mothers gauge their success as parents not

only by how likeable their children are, but by how well their children do in school.

According to Wrigley (1992:35) American schooling arrangements put a premium on active parental efforts to secure "good" schooling for their children. Those children who want their children to succeed in school typically do not rest once they have supported a home environment conducive to learning they also investigate schooling options and if need be, move to a new neighborhood pay for private schools or work through the education bureaucracy to get their children into desirable public schools. Once they have their children in what they consider acceptable schools many try to get their children good teachers and get them into high ranking courses. As Wrigley (1992:35) put it, parents do a long series of small things to assist their child toward maximum educational attainment. This may range from maintaining performance to managing a specific school problem. This kind of bureaucratic intervention takes time, information and vigilance. Overwhelmingly, mothers maintain contact with schools, pick up information from networks and other mothers, and monitor their children's educational progress. According to Wrigley (1992:36) educated mothers do not invest their cultural capital only in their own careers; they also invest in their children's career. Wrigley also found that married working women gave priority to their families in balancing their work and family identities, while married men did not feel they had to stress one identity over the other. Women perceive spending time with their families will detract from their economic success.

"Manage tends to increase the wages of men while parenthood lessens the labour force attachment. This is one factor that helps keep women out of career in science"  
(Smith and Powell: 1989: 205)

In a national survey by Ware and Lee (1990:153) high schools reported that they see scientific careers as incompatible with family life. Care giving according to these two authors is demanding, both actual and anticipated, help shape women's educational choices and funnel them into low paying gender – segregated occupations. Wrigley (1992:52) pointed out that social policy has been based on the assumption that women can and will depend on men for economic support. Policy makers accepted practical norms without questions and built programmes around the idea of men earning a "family wage" and supporting women and children. In their narrow calculus, male headed households constituted the norm, both practically and ideologically. They ignored the many households where men earned less than a family wage or where they failed to give their wives and children an adequate share of the family income. They also ignored those women who lived without men. Men's economic security depends on their ability to hold a job. For most women, such security depended on their ability and willingness to maintain a relationship with a wage earning man. Both strategies for finding economic security involved risk but without question the risk to women was much greater. The state provided only the most major and paltry of alternatives to women who lacked men's economic support.

Jonsson (1992:231) contended that in the 1950's women were encouraged to get an education in order to prepare for work after raising children. Women still carried the main responsibility for children and family, though they could work before having children or after the children have grown up. Education has been given an important role in the struggle for equality between man and women. According to Jonsson (1992:231) the experiment of giving priority to pupils who make a non traditional choice of education in upper secondary school has not influenced the number of influenced the number of girls who choose male dominated education. Boys instead

benefited when applying for female dominated education. He also found that the drop out rate among girls in male dominated educational programmes is much higher than the drop out rate among boys in female dominated study programmes. The school system is also assumed to function in a gender neutral way but both in the past and the present educational system was and is controlled by men. The idea that boys and girls are socialized into different but complementary roles, which then shape their expectations of life and other people's expectations of them, is an appealing one. It fits much of common sense knowledge of how children are treated and provides a language for describing the pressures exerted by Parents, peers, mass media and ideals, perhaps most important, it provides a strategy for change. (Ibid, 1992)

According to (Johnson:232) socialisation in middle class professional and affluent families includes expectation of achievement, meaning success in the world of public work, this is also imprinted in the daughters of these families. When making a non traditional choice of education the option for a working class girl is mostly male dominated vocational training. Such education implies quite different experiences both at school and in the future work places, compared to those encountered by middle class girls. The dropout rate from the four year engineering course programme chosen largely by women from middle class families is substantially lower than among the few girls choosing non traditional vocational training. The reason for dropping out also differs. Girls attending non traditional vocational education programmes often feel embarrassed about being in the minority. Their motivation is also low as hardly any of them are accepted into their first choice. On the longer engineering course programme, school difficulties are more often mentioned (Civil departmental, 1990). Ibid (1992:233) also found that over half of all Swedish girls finishing male dominated vocational course programmes in upper

secondary schools become unemployed once or more during the following four years compared with about a third of the boys, fewer girls than boys graduating from these course programmes got jobs appropriate to their education. After graduating from male dominated course programmes about one fifth of the girls took a second vocational course in upper secondary school.

## **CHAPTER 3**

### **3. RESEARCH METHODOLOGY**

#### **3.1 Research Design**

The research was mainly descriptive. Descriptive research according to Cohen and Manion (1997:83) is the systematic collection and presentation of data to give a clear picture of the situation or a problem. It may be carried out on a small or large scale. It is concerned with how what is or what exists is related to some preceding events that has influenced or affected a present condition or event. Questionnaires were designed and used as the main data collection method. The questionnaire has three parts.

The first part dealt with the demographic profile of the respondents.

The second part focuses on teachers perception of their learners in relation to subjects, gender and materials they use.

The third part asked teachers to clarify their views from short questions in the second part.

#### **3.2 Population'**

The population of this study consisted of 17 senior secondary school teachers in the Southern Region of Botswana. The imbalances in teacher gender, is attributed to the fact that there is no gender consideration when teachers are employed or posted to schools. In all the schools in Botswana there is no balance of male and female teachers. The short questions on part B were of the Likert type (five response categories, from strongly agree to strongly disagree).

### **3.3 SAMPLE AND SAMPLE PROCEDURE**

Out of a total of 17 Senior Secondary schools in the Southern region of Botswana, six schools will be drawn for use as a sample in this study. The subjects of this study were 36 teachers from these six selected schools. The sample was selected using the simple random technique. According to Cohen and Manion (1997:83) this method involves selecting at random from a list of the population (a sampling frame) the required number of sample. Mason (1978:79) described this method as one in which each member of the population has an equal chance of being chosen for the sample. Also in a random sample the selection of one member of the population does not affect the chances of any other member to be chosen.

For this study, names of schools were written on pieces of paper and then drawn from a box whereby the randomly drawn papers were returned to the box before the next draw. This was to ensure that each school had an equal chance of being selected. This was done until a total of six schools were selected. The researcher then use the simple random technique to select 10 teachers from each school and arriving at a total of 36 teachers from the six selected schools that was used for this study.

### **3.4 INSTRUMENTATION**

Questionnaires for teachers were used for data collection. Questionnaires obtained information on how teachers perceive subject and career choices of their students. The Likert Scale type of questionnaires was used on respondents.

According to Kubiszyn and Borich (1990:176) the Likert Scales consist of a series of attitude statements about some person, group or thing. Respondents indicate the extent to which they agree or disagree with each statement and the overall score then suggests whether the individual's attitude is favorable or unfavorable. Likert Scales are quick and economical to administer and score, adapts easily to attitude measurement situations and provides direct and reliable assessment of attitudes when scales are constructed.

The open ended and close ended questions were used also on teachers requesting them to write down their opinions on some of the gender issues from the questions. Advantages of using questionnaires of this type were that teachers were able to express themselves fully by responding to the questions. The questionnaires helped the researcher to compare and contrast information given by different respondents. They also permitted the researcher to collect reliable and reasonable valid data, relatively simple, cheap and in a short period of time. They also enabled the researcher to administer them in several locations of schools widely dispersed and greater anonymity can be provided to respondents.

### **3.5 DATA COLLECTION**

Permission was sought from Education officers and school heads for the sampled schools to allow the researcher to carry out the study. Questionnaires were directly administered and collected from the population by the researcher with the assistance from teachers and other post graduate students. Data for the study was collected from the samples of study when schools were not on vacation.



Data analysis was mainly quantitative. Frequency distributions were sought and data emerging from the analysis was presented in tables, picture charts graphs and percentages. Data from open ended questions will be analysed qualitatively.

According to Denscombe (2000) descriptive research tends to be associated with words as the unit of analysis, description and was also associated with small scale studies. It was recognized that the researcher's self ( his or her social background, values, identity and beliefs) would have a significant bearing on the nature of the data collected and the interpretations of that data. And the sample to be investigated will depend on following up leads so that the researcher can know neither how many or which people or events will be investigated until the end of the research. The emphasis is on discovery not proof.

## CHAPTER 4

### 4. DATA ANALYSIS AND INTERPRETATION

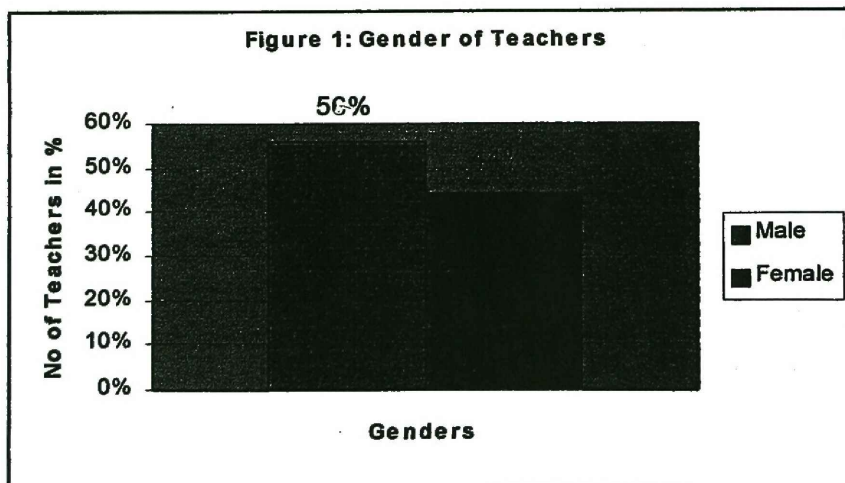
#### 4.1 INTRODUCTION

The results of this study were organised and prescribed in three parts. The first part (part A) dealt with the biographical questionnaire of teachers, the second part dealt with the type of questions and the third part dealt with the open ended questions.

#### 4.1.1 PART A, TEACHERS RESPONDENTS BIOGRAPHICAL QUESTIONNAIRE

ANALYSIS N =36

Figure 1: Gender of Teachers

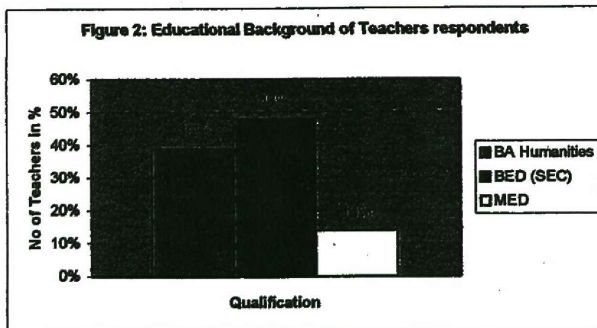


The figure above shows that in an area of study more males (56%) responded to the questions than females (44%). The questionnaire was administered to all teachers irrespective of gender. The reason for imbalances in response to questionnaires by males and females in the area of student could be attributed to the fact that there is no such balance of genders among teachers in schools.

**Table 9 Ages of Teachers**

| Age (in numbers) | Frequency | %    |
|------------------|-----------|------|
| 26-30            | 2         | 5.5  |
| 35-40            | 33        | 91.7 |
| 41-50            | 1         | 2.8  |
| TOTALS           | 36        | 100  |

Table 9 above provides age of teachers who responded to the questions. As shown in the table most teachers who responded to the questions are in the range of 35-40 years. According to Morris and Maisto (1998:16) most of these respondents are in the stages described by Erik Erikson, a psychodynamic theorist as that of generativity versus stagnation. According to Erikson some people of this age have successfully negotiated the six earlier stages and are likely to have found meaning and joy in all the major activities of their career.

**Figure 2. Educational Background of Teachers Respondents**

The bar diagram for educational of teachers indicated that all teachers respondents in this study have been well trained and are qualified teachers. The diagram show the majority (48%) of respondents holding Bachelor of Education in secondary

education. The other respondents have Bachelor of Arts in Humanities Subjects (39%) and Masters of Education at only 14%. The results means that the teachers used in this study possessed the necessary qualification and therefore are relevant in the answering of the questions for this study.

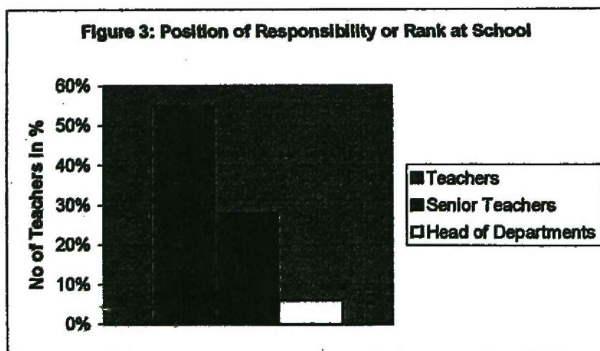
**Table 10 Experience of Teachers**

| Teaching Experience | Number of Teachers | %   |
|---------------------|--------------------|-----|
| 6-10 years          | 12                 | 33  |
| 11-15 years         | 18                 | 50  |
| 16-20 years         | 6                  | 17  |
| TOTAL               | 36                 | 100 |

The table above shows that all teachers interviewed has a reasonable number of experience in the teaching field . 33% are between 1-10 years of experience, 50% of the teachers forming the majority have 11 – 15 years experience in the teaching field 17% have 16-20 years experience.

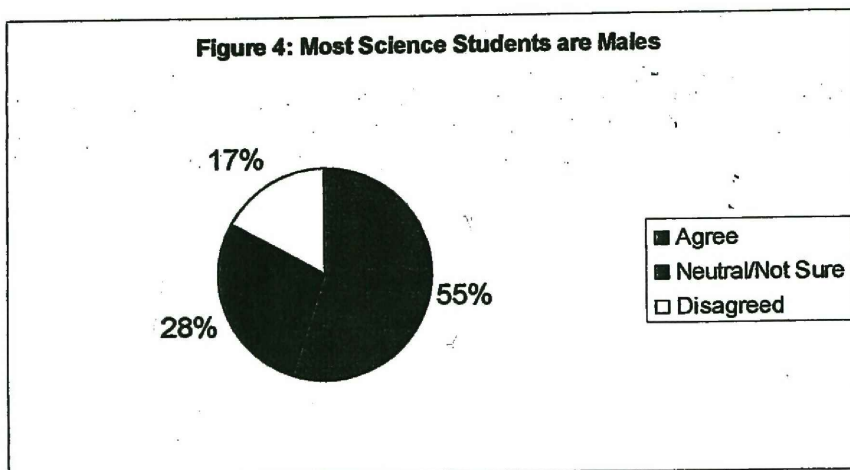
Concerning the question of responsibility the chart below indicates that 55% of the respondents are in the position of teacher 28% are senior teachers while only 6% of them are Heads of departments.

**Figure 3 Position of Responsibility or rank at School**



#### 4.1.2 PART B SHORT RESPONSES ANALYSIS

**Figure 4 (Item 1) Most Science students are males.**



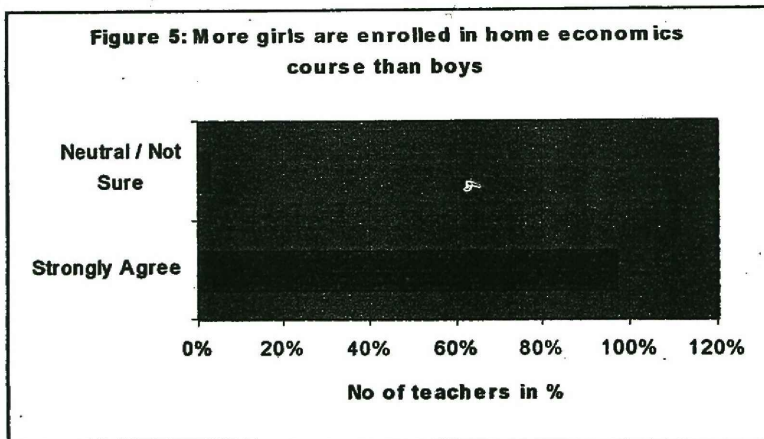
The figure 4 indicates that 55% of the teachers agree that most science students are males. The figure also shows that 28% are neutral or not sure of the available figures on students gender in science subject. About 17% of the teachers were opposed to the idea that most science students are males. This is also supported by the statistics on Table 1 by Nyathi and also the statistics from Table 2 and Table 3 which shows enrolment in vocational and Technical Training and in science subjects at University as provided by the education statistics in Botswana.

**Table 11 (Item 2) MOST MATHEMATICS Students are Females**

| Agree |    | Not sure | Neutral | Disagree |     |
|-------|----|----------|---------|----------|-----|
| NO    | %  | NO       | %       | NO       | %   |
| 0     | 0% | 1        | 3%      | 35       | 97% |

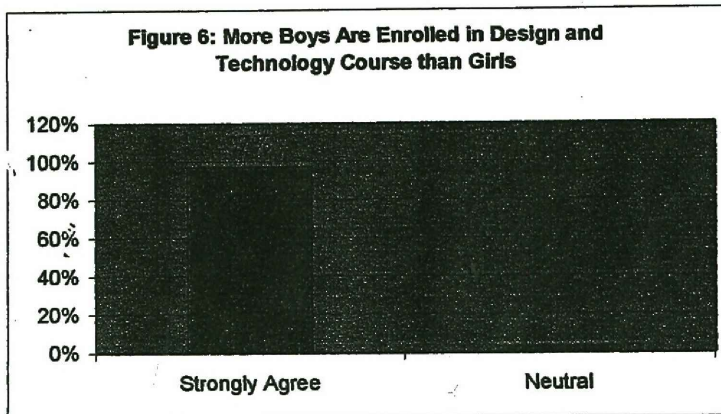
Table 11 shows that an overwhelming majority of teachers disagree that most Mathematics students are females. About 97% of the respondents disagreed with the statement while 3% were not sure or neutral. This clearly indicates that in Botswana most boys still dominate in mathematics and girls only form a small number in the subject. This indicates that mathematics is still regarded as a male subject.

**Figure 5 (Item 3) More Girls are enrolled in Home Economics Course than Boys.**



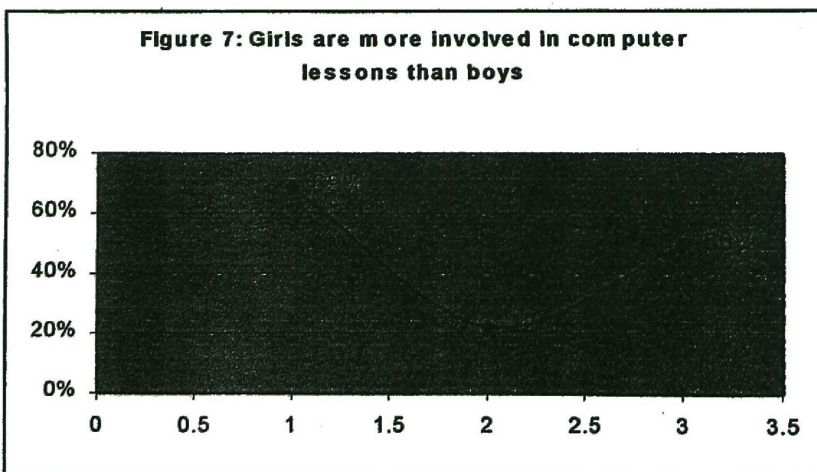
Almost all the teachers 97% in figure 5 agreed that more girls are enrolled in Home Economics Course, 3% of the respondents were not sure. This therefore reflects that domestic chores such as home- economics which were in the past dominated by females are still regarded by most people as a female role. This is further evidenced by majority of school going girls who are more involved in home economics course than boys.

**Figure 6 (Item 4) More boys are enrolled in Design and Technology Course than girls.**



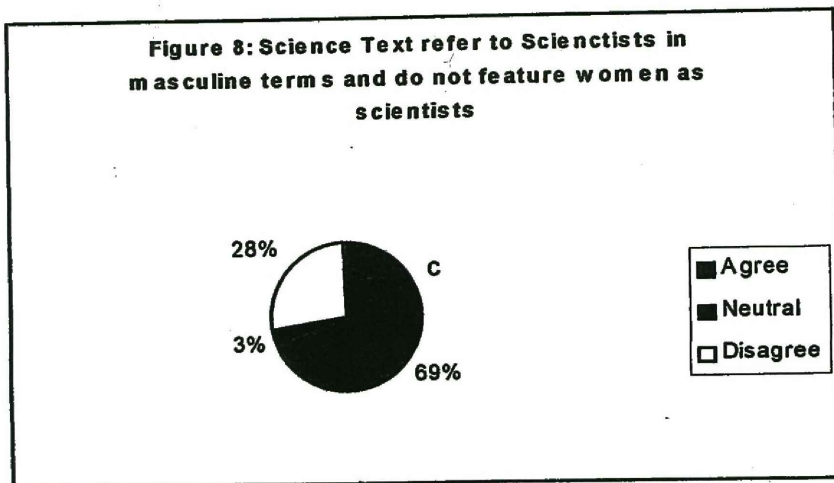
The bar graph shows more boys are involved in traditionally male dominated subject than the females. About 97% of the respondent's sampled schools agreed that more boys are enrolled in Design and Technology Courses than girls. Only 3% of the respondents were not sure or neutral of the situation.

**Figure 7 (Item 5) Girls are more involved in Computer lessons than boys.**



As illustrated in the line graph 50% of the respondents disagree that girls are more involved in computer lessons than boys. This shows that Computer lessons are also dominated by male students in Senior Secondary Schools. Only 28% agree that girls are involved, indicating more positive development on the side of girls in involvement in Computer lessons. 22% were neutral or not sure.

**Figure 8 (Item 6) Science Text refer to Scientists in masculine terms and do not feature women as scientists**



The chart shows that indeed most science text refers to scientists in masculine terms as indicated by 69% of the respondents. About 28% disagreed with the statements while only 31% were neutral or not sure. This was earlier discussed and supported by Gilligan (1991) who found that boys were interested in controlling the material world, whereas girls consistently show greater interest in subjects they regard as having more to do with people than "things"



**Table 12 (Item 7) Science Related Subject Teachers Perceive male Students to perform better than female students.**

| AGREE |    | NEUTRAL/NOT SURE |    | DISAGREE |    |
|-------|----|------------------|----|----------|----|
| NO    | %  | NO               | %  | NO       | %  |
| 6     | 16 | 20               | 56 | 10       | 28 |

The table reflects that 56% of the respondents were not sure or neutral on whether science related subjects teachers perceive male students to perform better than female students. About 28% disagreed and only 16% of the respondents agreed. This shows that science related subjects teachers do not perceive certain students to perform better than the other in terms of gender.

**Table 13 (Item 8) Non science related subject's teachers perceive male and female students performance the same.**

| AGREE |   | NEUTRAL/NOT SURE |    | DISAGREE |    |
|-------|---|------------------|----|----------|----|
| NO    | % | NO               | %  | NO       | %  |
| 1     | 3 | 25               | 69 | 10       | 28 |

Table 13 above indicates that the majority (60%) of respondents were not sure or neutral about how non science related subjects' teachers view the performance of the male and female students. About 28% of the respondents disagreed that male and female students perform the same, therefore the performance of the male and female students is different as viewed by respondents. This therefore means each student is perceived to perform different from the others according to peer abilities and gender by the teachers. Papalia, Olds and Feldman (2001) also found that differences in motor skills of boys and girls become greater as children approach puberty. Part of this gender differences may be due to differing in cultural

expectations and experiences, differing levels of coaching, and differing rates of participation.

**Figure 9 (Item 9) Experienced Teachers perceive male students to perform better than female students.**

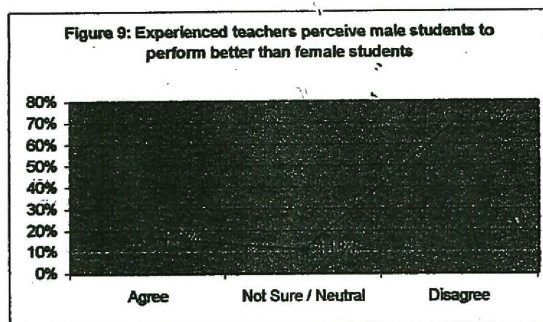


Figure 9 indicates the majority (72%) of respondents disagreeing that male students perform better than female ones, as perceived by experienced teachers. Only 17% agreed and 11% were either neutral or not sure. Performance of students is viewed by experienced teachers in terms of students' ability to perform given tasks correctly not in terms of gender.

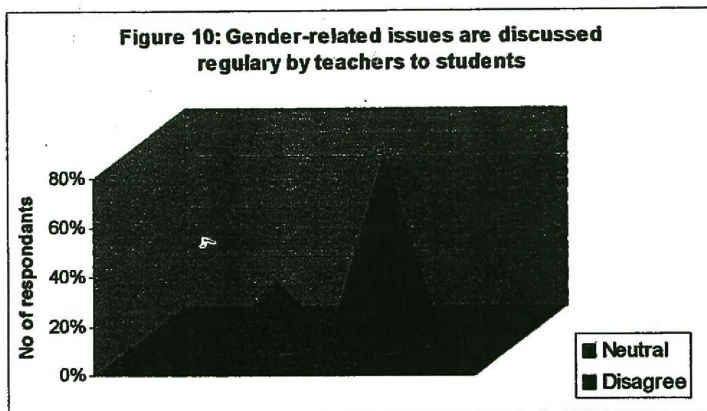
**Table 14 (Item 10) In Experienced Teachers perceive female students performance to be the same with the male students.**

| AGREE |    | NEUTRAL/NOT SURE |    | DISAGREE |    |
|-------|----|------------------|----|----------|----|
| NO    | %  | NO               | %  | NO       | %  |
| 5     | 14 | 27               | 75 | 4        | 11 |

With regard to inexperienced teachers' perception of female students' performance to male students performance, 75% of the respondents were not sure or neutral about how these teachers view female and male students to perform the same.

However 14% of the respondents agreed. This shows that inexperienced teachers do not really think female students perform the same with the male. This is the same as under table 14 where the variance of performance was attributed to gender by Papalia, Olds and Feldman (2001). The conclusion then is that in experienced teachers believe that both sexes perform the same.

**Figure 10 (Item 11) Gender related issues are discussed regularly by teachers to students.**



According to the figure above 75% of the respondents felt that gender – related issues are not discussed regularly by teachers to students and 25% were neutral or not sure. This strongly means gender related issues are ignored by teachers in the classrooms. According to Fountain (1991) there is what is called a hidden curriculum in schools. A hidden curriculum according to Fountain refers to messages conveyed by the school through various structures and organizational practices. In Botswana, the curriculum is largely the same for both sexes, but pupils learn a variety of things in addition to what they are taught in class. Pattern of interaction between both sexes reflects bias elements of socialisation and

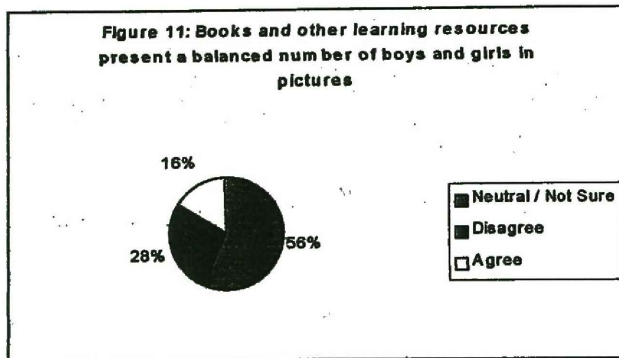
upbringing. Therefore, the socialization process that begins at home is continued in school

**Table 15 (Item 12) Teachers are trained and prepared to orientate students on gender issues in schools.**

| AGREE |   | NEUTRAL/NOT SURE |   | DISAGREE |    |
|-------|---|------------------|---|----------|----|
| NO    | % | NO               | % | NO       | %  |
| -     | - | 1                | 3 | 35       | 97 |

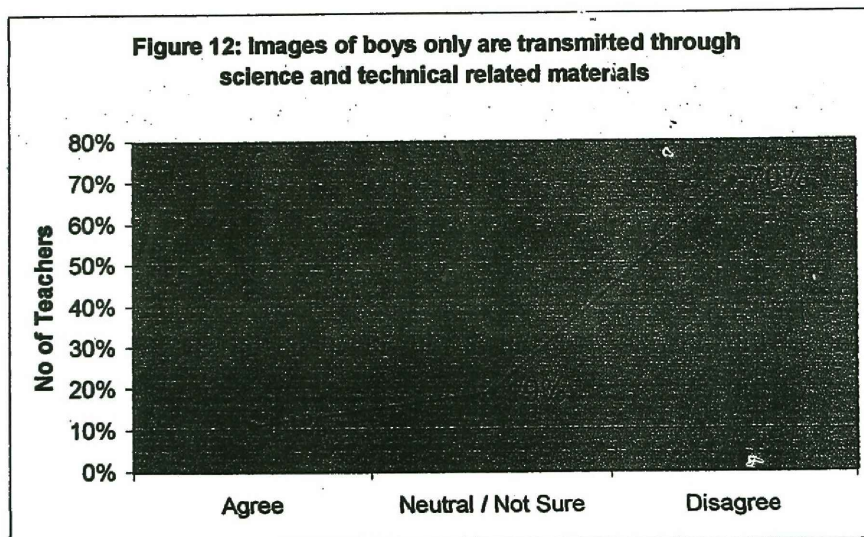
The table above clearly shows that teachers are not trained and prepared to orientate students on gender issues in school as indicated by 97% of the respondents. Only 3% of the respondents did not give their views on preferred to be either neutral or were not sure. Research shows, that inequality in employment arise in part from gender differences that exist through the Educational System. This has been earlier supported by Skolimic, Lambert and Day (1995) also maintain that though in theory teachers believe in the democratic functions of education, that it should give equal opportunities to all students , they themselves influence gender stereotypes.

**Figure 11 (Item 13) Books and other learning resources present a balanced number of boys and girls in pictures.**



The figure above indicates that 56% of the respondents were neutral or not sure of whether books and other learning resources present a balanced number of boys and girls in pictures. 16% were in agreement with the question or statement while 28% disagreed that there is such a balance number of boys and girls in pictures. This could be attributed that science books and other learning resources do not present a balanced number of boys and girls in pictures. According to Bascow (1992) there appears to be substantial evidence that boys and girls are highly stereotyped in books. The titles of the books in a study Bascow (1992) conducted used boys more often than girls. Bascow (1992) argued that because males have greater visibility in books and are given more active roles than females are, especially in occupations, stereotyped gender roles are reinforced.

**Figure 12 (Item 14) Images of boys only are transmitted through science and technical related materials**



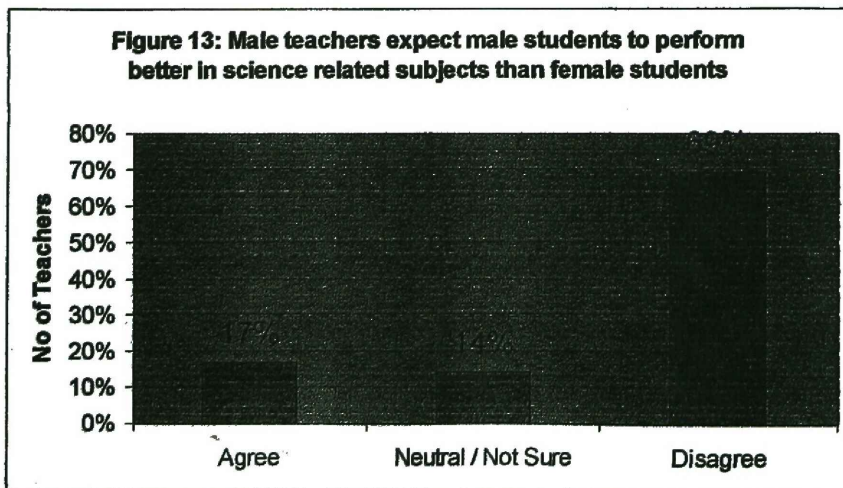
According to this figure 70% of the teachers interviewed are of the views that it is not only boys images that are transmitted through science and technical related materials. About 19% were either neutral or not sure while only 11% agreed with the statement above. This means that images of both girls and boys are transmitted equally to both sexes in science and technical related materials. Their views however, is in contrast with what Wood (1994) suggested earlier in this discussion that the school reinforce gender role stereotypes in their curriculum by making women's achievements advisable, men's accomplishments are highlighted in curricular materials whereas women's role are often executed.

**Table 16 (Item 15) Teacher perceive male students to be performing better than female students**

| AGREE |    | NEUTRAL/NOT SURE |    | DISAGREE |    |
|-------|----|------------------|----|----------|----|
| NO    | %  | NO               | %  | NO       | %  |
| 4     | 11 | 5                | 14 | 27       | 75 |

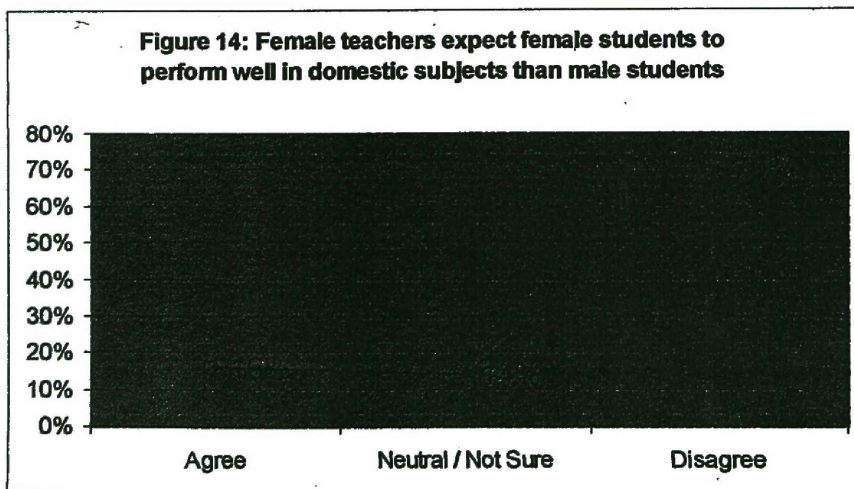
Teachers who endorse traditional gender role behaviour directly influence the choice of career options and the way students should perform (Lindsay 1990). The table above however shows that 75% of the respondents indicated that teachers perceive male and female students to perform equally, while only 11% thought that there is a difference in performance between male and female students. 14% of the respondents were neutral or not sure. Generally this means that teachers perception of both male and female students performance is positive and they do not use gender to judge their performance.

**Figure 13 (Item 16) Male teachers expect male students to perform better in science related subjects than female students**



About 60% of the teachers respondents felt that male teachers do not expect male students to perform better in science related subjects than their female counterparts. Seventeen percent of the respondents however, are of the opinion that male teachers do expect male students to do well in science subjects than female students. Only 14% were either neutral or not sure. Therefore, male teachers do not expect male students to perform better in science subjects than females. These findings are in contrast with what Etough and Liss (1992:129) observed. They found that there is a significant influence from our educational system on the development of gender – stereotyped work roles

**Figure 14 (Item 17) Female teachers expect female students to perform well in domestic subjects than male students**



70% of the teachers respondents indicated that female teachers do not expect female students to perform better in domestic subjects than the male students. Only 16% agreed with the statement and 14% were neutral or not sure. This means that female teachers expect both female and males students to perform equally in domestic subjects. According to Indev(1990) feminine "appropriate" courses are



language , home economics and typing. In contrast to these findings Lindsay found that boys are encouraged to take maths and science courses. Lindsey also argued that teachers respond differently to boys and girls in all grades, partly because teacher education training books are gender biased

**TABLE 17 (item 18) Female teachers recommend subjects traditionally dominated by females to female teachers.**

| AGREE |    | NEUTRAL/NOT SURE |    | DISAGREE |    |
|-------|----|------------------|----|----------|----|
| NO    | %  | NO               | %  | NO       | %  |
| 5     | 14 | 19               | 52 | 12       | 34 |

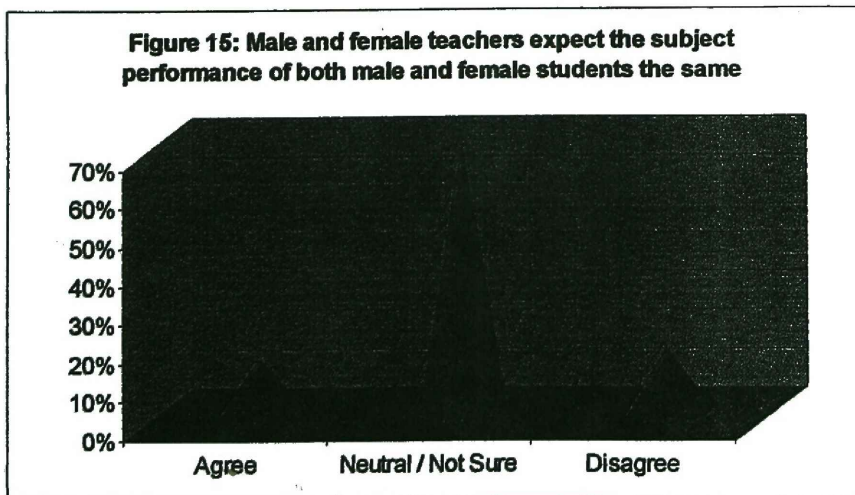
According to the table above 52% of the respondents were neutral or not sure. Whenever female teachers recommend subjects traditionally dominated by females, to female students.34% also indicated that females do not channel female students into traditionally female dominated subjects. Only 14% agreed. The interpretation here could be that female students are not channelled into traditionally female dominated subjects at school. Non traditional occupations according to Bascow (1992) are those that have less then 30% of the same – gender workers. For example; Four careers that are female dominated are:, social work, nursing, teaching and office work. Bascow argued that although there is greater acceptance of men into non traditional careers, there continues to be prejudice, ridicule and negative perceptions of the men who choose them. It appears that gender typing of career is still prevalent in our society and those who deviate, experience the scorn of those whose thinking is dominated by gender role stereotyping.

**TABLE 18 (Item 19) Male teachers recommend subjects traditionally dominated by males to male students**

| AGREE |    | NEUTRAL/NOT SURE |    | DISAGREE |    |
|-------|----|------------------|----|----------|----|
| NO    | %  | NO               | %  | NO       | %  |
| 5     | 14 | 15               | 42 | 16       | 44 |

As discussed earlier in this study, traditionally dominated male subjects are science related subjects. Table 18 shows that 42% of the respondents preferred to remain neutral or not sure. However 44% of the respondents were of the opinion that male teachers do not recommend traditionally male dominated subjects to male students. 14% thought they do recommend them. This means that male teachers do not recommend male dominated subjects to male students. It appears that every student is given a chance regardless of gender.

**Figure 15 (Item 20) Male and Female teachers expect the subject performance of both male and female students the same**



69% of the teacher respondents above were either neutral or not sure whether male and female teachers expect the subject performance of both male and female students to be the same. 17% disagreed with the statement while only 14% agreed. This could be interpreted to mean that both male and female teachers expect the subject performance of both male and female students to be the same. Borow (1996:281) had argued that women are currently earning as much of the bachelor's and masters' degree as their counterparts but continue to approach career development differently than men earn less from men and career into traditionally female jobs.

**4.1.3 PART C****RESPONSES TO OPEN ENDED QUESTIONS BY TEACHERS.****ITEM 21. DO THE SCHOOL ORIENTATE STUDENTS ON SUBJECT CHOICES AT THE BEGINNING OF THEIR SECONDARY SCHOOL?**

Teachers' respondents all agreed that students are all orientated on subject choices at the beginning of form four, which is their first year at Senior Secondary School. Some subjects are necessary as qualification for further studies or their availability as marketable subjects in today's labour market. According to Lindsey (1990) students should be given the opportunity to identify relationships between interests and total life experiences. Experience to career options increases awareness of exploration opportunities. Basic and concrete experiences provide a means of learning the skills utilized in work. Still in planning decision making and problem solving are important for high school students. Lindsay further suggested that the students should understand that gender – role stereotyping, bias and discrimination limit occupational choices.

**ITEM 22 AND 23 WHAT FIELDS ARE BOYS AND GIRLS ADVISED TO PURSUE?**

All teachers responded that explanation is made in all subjects to students in Orientation as explained in item number 21. Teachers wrote that all students are orientated to choose subjects of their choice. However all the teachers also wrote that boys are strongly advised to choose technically orientated subjects so as to pursue fields such as mechanical and engineering, while girls are strongly advised to pursue Hotel and catering, secretarial, teaching, accounts, social work and

nursing in future. This therefore means that the orientation that is given to students is not gender balanced in Secondary Schools. The school further influence reinforces expectations from boys and girls learned from gender stereotypes from the society. Tracy (1990) suggested that boys and girls are treated differently at schools. She also observed in her study that boys in school are portrayed as being resourceful, brave and creative, whereas girls are portrayed as passive, helpless and dull.

**Table 19 (Item 24) Do girls and boys have the same performance in science related subjects?**

| AGREE |    | NEUTRAL/NOT SURE |    | DISAGREE |    |
|-------|----|------------------|----|----------|----|
| NO    | %  | NO               | %  | NO       | %  |
| 5     | 14 | 10               | 28 | 21       | 58 |

Table 19 shows, that 58% of the respondents were of the opinion that girls and boys did not have the same performance in science related subjects. Only 14% agreed that both genders perform equally in science subjects. 28% were neutral or not sure. The teachers further wrote that boys tend to dominate in science subjects because girls underrate themselves and they lack self confidence in science subjects.

**ITEM 25 IF YOU ANSWERED NO TO NUMBER 24. HOW DO THE SCHOOL ADJUST THE CURRICULUM TO ACCOMMODATE SUCH DIFFERENCES IN NO 24 ABOVE?**

Teachers argued that the curriculum is followed as it is from the ministry of education. There is no local adjustment to accommodate students by teachers. Therefore, this means the design of the curriculum stresses content and neglects the students needs, interest and experiences. Teachers tend to emphasise on students passive learning. Emphasis on subject matter fails to foster social and psychological development of the learner. However, some teachers responded that they follow differentiated method of teaching which endeavours to cater for special needs of individuals and enables the weak students to learn at their own pace.

**ITEM 26 WHAT ARE THE CAUSES OF DIFFERENCES IN PERFORMANCE OF BOYS AND GIRLS?**

Most teachers were not sure of what causes the disparity in performance between boys and girls. However some teachers gave the following reasons as contribution factors:

- \* Most boys are more disciplined than girls.
- \* Intelligence is inherited from parents
- \* Girls regard science orientated subjects to be domain for males.

**ITEM 27 IS THERE ANY GENDER BIAS IN SOME OR ALL TEACHERS IN EDUCATION OF LEARNERS?**

In response to this item, teachers responded that there is no gender bias in teachers when they evaluate learners. Assessment was said to be objective,

**ITEM 28 ARE GIRLS GUIDED INTO TECHNICAL AND SCIENCE STREAMS OR DISCOURAGED FROM DOING SO?**

The teachers responded that gender is not considered in determining of all who goes into the science streams. Performance (academic) from the previous school or grades is the only determining factor that is used to ensure students quality to be allowed into the different subject areas. Grades form a basis of selection in subjects into the next grade or educational level. Therefore selection in few spaces available is based almost entirely on grades.

**ITEM 29 IS THERE A GUIDANCE AND COUNSELLING SYSTEM IN PLACE?**

In response to this item, all sampled school teachers unanimously agreed that the guidance and counselling is in the place in their respective schools. They also confirmed that they sensitise students through the guidance and counselling that gender should not be a determining factor in subject and career choices. This means that all schools sampled have guidance and counselling services available in their schools.

**ITEM 30 IF THERE IS GUIDANCE AND COUNSELLING SYSTEM IN PLACE, HOW DOES IT ACCOMMODATE LEARNERS GENDER RELATED ISSUES?**

The following purposes of the guidance and counselling in relation to gender issues in schools were advanced by teachers.

- \* Sensitises students on subjects in relation to future career prospects
- \* Guide students not to be gender biased in choosing subjects.
- \* Help in reducing some traditionally held gender stereotypes originating from culture.

**ITEM 31 AND 32 WHICH OCCUPATIONS ARE PERCEIVED BY MALE TEACHERS TO BE SUITABLE FOR BOYS AND GIRLS AND BY FEMALE VICE - VERSA?**

The responses indicated that male and female teachers recommended some of the following occupations for males.

Mechanical

Electrical

Engineering

Builders

And the following occupations recommended to female students

Nursing

Secretarial

Hotel and Catering

Typists

Teaching

This study shows that traditional gender stereotypes on occupations are also an extension from the society to the school. Teachers as part of the larger society also find it very difficult to avoid such stereotypes in gender. This could be attributed to the fact that teachers themselves were socialised along those traditional gender stereotypes on gender.



**ITEM 33 WHICH STUDENTS (MALE OR FEMALE) DO YOU THINK PERFORM BETTER IN SCIENCE RELATED SUBJECTS ?**

**GIVE REASONS FOR YOUR ANSWER.**

Most teachers judged males as performing better than females in science related subject and gave the following reasons to support their answers:-

\*Boys have self confidence and want to prove that they are better than the other gender.

\*Males have better intellectual opponents.

\* It depends on the interest and academic ability of males.

This again shows that teachers have strong expectations for male students to perform better than females, therefore indicating that they are gender biased in their expectations.

**ITEM 34 WHICH STUDENTS (MALE OR FEMALE) DO YOU THINK PERFORM BETTER IN SCHOOL GENERALLY? GIVE REASONS.**

Teachers generally responded that both genders seem to perform well. However a few teachers viewed boys to be performing well as males know they are supposed to be the breadwinners in their families and therefore work hard to be able to support their families and future spouses. Others were of the view that girls perform well generally because they are easy to discipline than boys. They also show commitment and seriousness. Generally this could be interpreted to mean that both genders are expected to perform well in schools generally by teachers.

**ITEM 35 WHAT DO YOU THINK SHOULD BE DONE THAT GIRLS CAN HAVE MORE INTEREST (IF YOU THINK THEY DON'T HAVE) IN SCIENCE RELATED SUBJECTS ?**

Teachers suggested the following a way of motivating girls interest in science related subjects:

- \* Girls should trust themselves that they could do anything done by males.
- \*Curriculum, science textbooks and teachers to be gender sensitive.
- \*Orientations should be conducted in schools on gender.
- \*Career guidance information should be availed to students.

**ITEM 36 WHO DO YOU THINK ARE SOLELY RESPONSIBLE FOR GENDER INEQUITY IN EDUCATION?**

The majority of the teachers blamed culture as being responsible for gender inequality in Education. Parents and the Ministry of Education (curriculum design) were also blamed as contributing factors in gender inequalities in education. This was also supported by Bascow (1992) that the preference for male children over female children is a worldwide phenomenon. This it should not be surprising that many pregnant women place a higher value in giving birth to a boy than to a girl. These parental attitudes are relayed to children in terms of gender stereotypes that affect children's development. Differential parental expectations of boys and girls may, to some extent influence career choices and other roles children envision for themselves.

**ITEM 37 HOW HAS THE ABOVE CHOICES YOU HAVE MADE CONTRIBUTED TO GENDER INEQUALITIES IN EDUCATION ?**

These teachers who also chose culture and parents believed that culture and parent view some heavy work such as machinery and building as purely men's occupations and clerical services as reserved for women. They shun any gender that would engage in any activity they believe to be belonging to a certain gender according to their gender stereotypes thinking, Culturally again some people do not

see the need for girls to get educated because they would get married by men.

Therefore, men get the encouragement that they need to work harder than women in order to fend for themselves and families in future. This therefore means that culture and parental influence also play a major role in gender inequalities in education.

## **4.2 RESULTS AND DISCUSSIONS**

The purpose of this study was to investigate teachers' perceptions and how they influence students' subjects and career choices by gender in education. The research puts special emphasis on whether teachers have a strong influence in the way students choose their subjects or make their career choices. The findings of the research revealed that teachers play a significant role in creating and maintaining gender inequalities among the learners. Teachers reinforce gender role stereotypes through channelling male and female students in roles traditionally dominated by each gender. The findings revealed that 97% of respondents agreed that girls are still enrolled in large numbers than boys in domestic courses like home economics and boys dominate in subjects that were traditionally dominated by males such as science and mathematics. The study also found that male teachers advise male students to opt for occupations such as engineering, electrical and mechanical and female teachers still advise female students to engage in courses dealing in domestic chores. Computer sciences and subjects like design and technology have almost all male students enrolment in the sampled schools/ This means that the subjects in Senior Secondary School in Botswana do not. Teachers who act as role models and adopt a gender balance teaching style. Instead a gender biased teaching style is in practice in the education system. Students still continue to practice traditionally feminine (girls) or masculine (boys) careers because they have teachers who were not satisfied in gender prior to taking their roles in the teaching profession.

From the findings of the study 75% of the respondents indicated that teachers do not discuss gender – related issues with the students regularly and an overwhelming 97% of the respondents further revealed that teachers are not trained or prepared to orientate students in gender issues in schools. Therefore gender gaps and gender inequalities are not eliminated but reinforced by most teachers in schools. The disadvantaged gender is not brought at par with the favoured gender. Both genders therefore leave the school with an education that would not provide life skills and not permit them to pursue higher levels of education or vocational training according to their capabilities and is free from gender stereotyping. The challenging task ahead is to reform the education systems so that teachers offer equal opportunities to all children and produce citizens who can participate on an equal footing in the development of democratic, non – discriminating and non – sexist societies. A first step in this direction is to ensure that teachers are gender sensitive and responsive. If the skills each gender requires are taught to all students, all students will be equipped for whatever the world awaits them. Gender issues should be considered in the definitions of problems, in goal and objective setting and in the definition of strategies in schools. Gender concerns should be part and parcel of the core educational programme. However, the government should avoid falling into the trap of adopting such a mainstreaming policy without ensuring that staffs possess the necessary degree of awareness and the skills to conduct gender analysis

The findings of the study strongly reflect that almost all teachers are not trained to prepare students on gender issues in schools. According to the study male teachers still recommend traditionally male dominated subjects to males and female teachers also recommend traditionally female subjects to female students. This is further evidenced by the current situation in Botswana Secondary Schools where all girls are found in careers like home economics and most boys are taking subjects like design and technology. The

guidance and counselling system which is said to be in place in all schools does not adequately address the needs of students in relation to gender. Girls are not guided into technical and science streams. Boys are also discouraged from moving into domestic courses. As previously discussed in this study girls may need technical, scientific, mechanical and mathematics skills formerly needed by only boys when they are women and today's boys may need domestic skills, which their fathers did not when they are men. Few students engaging in subjects formerly or traditionally dominated by the opposite gender usually suffer the scorn and shame of other students and teachers. The expectations that teachers have on male and female students is just an extension of the larger society on gender on which teachers are part of it.

As indicated in the study 55% of the respondents confirmed that most science students are secondary school and 97% also confirmed that mathematics is dominated by men. 97% of the other respondents as shown in figure 5 confirmed also that more girls are enrolled in home economic courses than boys. This is as a result of the gender reinforcement students get from the teachers and the dysfunctional guidance and counselling system in schools. Those gender discrepancies extend further to the University level as indicated by enrolments of students in University from tables 1.2, 1.3, 1.4, and 1.5. These tables indicate that traditionally male dominated subjects have the largest number of male enrolments while traditionally female dominated subjects also have the biggest number of female enrolments.

The study also shows that the teachers' perceptions are also influenced by the materials they use such as the science texts. About 69% of the respondents of this study agreed that science text refer to scientists in masculine terms and do not often feature women as scientists. Only 28% of the respondents also confirmed that books and other learning resources do not present a balanced number of boys and girls in the picture. 56% of the

teachers, surprisingly were not sure or neutral in this issue and this could be contributed to the fact that those teachers do not concern themselves with gender related issues in their schools or are not trained in gender issues. This study indicates that images of man and boys are mostly transmitted through science materials. These portrayals may have effect on a learner in the forming of self concept, character and career choice or they tend to associate science with males. The gender, content of texts needs to be analysed and new texts need scrutiny by gender biased content. From observation most students' books depict women as well as men, boys and girls in gender typed roles: the mother/wife cooking; the father/husband returning from the office or farming, the boy herds cattle and the girl carries water. As Sumra (1990:179) noted how often are women depicted in positions of power and authority? As indicated in this study some teachers felt that the difference in performance in girls shows that girls regard science as a male domain and therefore lacked self confidence. This study, observed that girls academic confidence levels seem to decrease as they enter Senior Schools because academic achievements and confidence levels are linked to career decision-making process which most teachers ignore.

From this study orientations in schools take place as much as there is guidance and counselling system. ~~These orientations and guidance and counselling seem not to address~~ the gender issues to students as revealed under Item 31 and 32. Under these two items teachers still recommended by perceived male students to take occupations traditionally dominated by men only and female students are still advised to pursue occupations traditionally dominated by men.

It was also discovered that the curriculum design by the ministry of education is designed in a way that teachers do not have a role to play in gender equity. Students are still compared as girls and boys in achievement in the classroom by teachers. Boys are still

encouraged not to be out classes by girls and if they do they also suffer the scorn and shame of their classmates. There should be for example a provision of a career counselling where both boys and girls make career choices using successful female role models to help them make better choices.

The study also found that culture also influence teachers perceptions as they are themselves the members of the community and probably socialised in a gender biased style. According to Lindsey (1990:153) parents who have been gender role socialised to provide models for their children who actively seek identification with the same sex parent. This home tasks that parents consider appropriate for boys and girls reinforces learned gender role concepts and extend to school. Teachers therefore endorse traditional gender role behaviour and influence the choice of career options of the students. The message is clear that teachers need gender education so that they can scrutinize the students and the community in which they live.

## **CHAPTER 5**

### **5. CONCLUSION AND RECOMMENDATIONS**

#### **5.1 CONCLUSION**

The findings of the research confirm that there are gender stereotypes reinforced by teachers in Secondary School. There is a critical need to systematically involve gender issues in the development of educational programmes such as school syllabuses, school text and in the education of teachers. Gender stereotyping and many expectations from boys teachers appear to be a major factor on discouraging girls and restricting their equal access to education. The overwhelming response on the side of culture and parents that girls should not take education seriously because they may have a gender role to perform in marriage indicates that there will be no substantive change in improving girls access to equal education or gender equity in education.

The majority of the respondents confirmed that science related subjects are still dominated by boys and domestic courses by girls in Botswana Secondary School. This is a clear indication that the government of Botswana need to address gender equity in schools through educating teachers who will in turn transform the minds of the students and society. There is a need to revisit the curriculum and turn it into a gender sensitive document. Topics in the curriculum and learner materials need to fulfil the needs of the boys and girls. Gender roles should therefore be taken into consideration in the workshops in which experts on gender roles would agree on the content of the curriculum and materials. Writers and artists should be gender sensitive and gender balance of authors and artists should be available in which they would write text language and have pictures free of gender bias. Only a few teachers as indicated by the research participated in this study. The lack of participation learning gender equality may indicate that those teachers did not consider this issue to be significant importance. The teachers were unlikely to be fully aware of the relevance and influence of the gender stereotypes in their school



environment and their everyday lives. According to Ben Tswi – Meyer (1993) teacher awareness is thought to be the most important anti-sexist intervention in schools. In general however courses in gender role socialisation are not generally incorporated into the Curriculum of Senior Secondary Schools in Botswana. Change will not occur unless teachers take a strong interest in those issues.

Many teachers were neutral in response to some of the items in this study. They had not made an effort to respond to the questionnaire items in either positive or negative way. As in item 10 (Table 14) for example, 75% of the respondents were either neutral or not sure of how the inexperienced teachers perceive female performance. The implication is that the teachers did not consider the issue of school policy with respect to gender priority. Their support statements were extremely general and superficial and often implied that gender equality at their school is taken for granted. The statements by teachers appear to indicate that little consideration has been given to the covert aspects of the school curriculum with gender. They seem to have swallowed the gender equality rhetoric at face value without investigating to ensure that gender equality exists in their schools. However, most teachers stated that their schools have a Guidance and Counselling system which addresses the issues of gender inequality and helps in reducing some traditionally held gender stereotypes. Some of them, originating from culture.

With aspect to most questionnaire items, one could easily determine which socially acceptable and desirable responses were. Participants could easily disguise socially undesirable attitude. This concerns the services of Guidance and Counselling which are available in all schools, while most teachers lack training in the provision of such services/ In some schools students informally stated that teachers choose subjects which are optional for them. They stated the reason for this was given as lack of classrooms and teachers to accommodate many students. This could mean that students are taking

subjects as per the availability of teachers and classrooms and not their interest. So there is need for a possible further research o this study with inclusion of students.

A potential avenue for further research may be the investigation of the perceptions of students gender roles as perceived by teachers from different cultural backgrounds as the ones used in this study are Batswana locals only. That type of study may help disentangle the relevant influences of the gender role attitudes rooted in the teachers culture of origin from those grounded in the actual societal context in which they are now teaching.

Issues of inequality in the education system in particular should be addressed. Courses in gender training should include investigations into the existence of inequality, the damages it causes, and the teaching skills to combat it. Leadership skills should also be facilitated on the courses so that teachers can act as positive role models.

According to latter (1996:9) changing the attitudes of both men and women in society is a slow process, but it is imperative that recourses are invested into equal socialization to release future generations from traditional gender roles.

## 5.2 RECOMMENDATIONS

Information from the data collected will be used to make a summary of the study and recommendations. The conclusion of the study will be drawn from the perception of the samples involved in the study. The conclusion will be followed by recommendations based on the findings of the study.

At the end of the study the following recommendations are made Based on the findings

- 1 There should be gender laws to create curriculum and textbooks free of gender bias.
2. Teachers should be properly trained in gender sensitization
3. Teachers, principals, counsellors must provide information on career choices and gender to students
4. Girls should have equal access to computers and other equipment
5. Schools should find out how many girls are enrolled in advanced mathematics, science and computer courses and encourage family members to monitor female enrolment and seek to increase it on these fields.
- 6 There should be sharing of information about classroom climate and gender equity among teacher. Parents, Teachers, Associations should identify gender issues for discussion
- 7 The Ministry of Education should check out text books before recommendations for usage in school wherever they are not gender biased and represent both sexes in all disciplines.
- 8, Curriculum and textbooks should be revised, renewed or rewritten as the time, situation and national and international context demands.
- 9 Curriculum developers and textbooks writers should receive training on the gender issues, gender bias in textbooks and how to develop materials without gender bias.
10. Teachers should be trained to implement the curriculum as well as use of the gender equity textbooks.

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## **APPENDIX A**

Dear Respondent

I am Mompoti Moremi and currently registered for a Masters degree in Education (Guidance and Counselling) with North West University. I am doing this research in fulfillment of the requirements for a Masters Degree. The purpose of this research is to investigate teachers' perception and how they influence students' subjects and career choices in education.

There are no right or wrong answers, your honest opinion will be highly appreciated. Your answers will only be used for the purpose of the study and your opinion will be treated with the strictest confidentiality and anonymity. Thus no identifying information is required.

Yours faithfully

---

**M. MOREMI (MR) (10461051)**

## APPENDIX B

### TEACHERS QUESTIONNAIRE

The purpose of this questionnaire is to investigate teachers' perceptions and how they influence students' subjects and career choices by gender. I would appreciate if you could fill in this questionnaire. All information will be treated with strictest confidentiality and anonymity. Thus you should not write your name.

#### PART A: BIOGRAPHICAL QUESTIONNAIRE

##### Instructions

Kindly put a cross in the block that is applicable to you.

1. **Gender**

(a) Male

|  |
|--|
|  |
|  |

(b) Female

2. **Age-group**

(a) 19 – 25

(b) 26 – 30

31 – 40

(c) 41 – 50

(d) 51 +

|  |
|--|
|  |
|  |
|  |
|  |
|  |

3. **Professional Qualification**

(a) Diploma in Secondary Education

(b) BA Humanities

(c) B Ed Secondary

(d) Masters of Education

(e) Masters of Arts

|  |
|--|
|  |
|  |
|  |
|  |
|  |
|  |

Others, specify \_\_\_\_\_

4. **Teaching experience**

(a) 1 – 5

(b) 6 – 10

(c) 11 – 15

(d) 16 – 20

(e) 21 +

|  |
|--|
|  |
|  |
|  |
|  |
|  |





25. If no to No. 24, how do the school adjust the curriculum to accommodate such differences? \_\_\_\_\_  
\_\_\_\_\_

26. What are the causes of differences in performance of boys and girls? \_\_\_\_\_  
\_\_\_\_\_

27. Is there any gender bias in some or all teachers in evaluation of learners? \_\_\_\_\_  
\_\_\_\_\_

28. Are girls guided into technical and science streams or discouraged from doing so?  
\_\_\_\_\_

29. Is there a Guidance Counselling system in place? \_\_\_\_\_  
\_\_\_\_\_

30. If there is guidance and Counselling system in place, how does it accommodate learners gender related issues? \_\_\_\_\_  
\_\_\_\_\_

31. Which occupations are perceived by male teachers to be suitable for

a) Males \_\_\_\_\_

b) Females \_\_\_\_\_

32. Which occupations are perceived by female teachers to be suitable for

a) Males \_\_\_\_\_

b) Females \_\_\_\_\_

33. Which students (male or female) do you think perform better in science related subjects? \_\_\_\_\_  
\_\_\_\_\_

Give reasons for your answer \_\_\_\_\_  
\_\_\_\_\_

34. Which students (male or female) do you think perform better in school generally?

---

Give reasons for your answer

---

---

35. What do you think should be done that girls can have more interest (if you think they don't have) in science related subjects?

---

---

36. Who do you think are solely responsible for gender inequality in education

A. parents

B. Teachers

C. The government

D. Ministry of Education

E. Culture

(you may make more than one choice)

37. How has the above choices you have made contributed to gender inequalities in education?

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