ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

GENDER BIAS ANALYSIS OF PRIMARY SCHOOL TEXTBOOKS OF AMHARA REGION

By

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GENDER BIAS ANALYSIS OF PRIMARY SCHOOL TEXTBOOKS OF AMHARA REGION

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CHAPTER III

III DESIGN AND METHOD OF THE STUDY

CHAPTER IV

IV RESULTS AND DISCUSSION

CHAPTER V SUMMARY CONCLUSION AND RECOMMENDATIONS....92

ABSTRACT

The study was designed to examine the portrayal of female and male sexes in primary school textbooks of Amhara Region (Region three) and to identify if the contents and illustrations of the newly developed textbooks have gender biased (sex-stereotyped) messages.

To conduct the research, content analysis was used. The analysis was done on 42 textbooks for 13 subjects on topics, language, activites, biograpies and characters, occupations and examples. Of the 42 textbooks, 50 percent of each textbook chapters were selected for analysis by using random sampling technique. On the basis of categories frequency counts were made and the frequency counts were changed into percentages. Chi-square (x^2) statistical test was computed to see if there is significant difference between male and female sex portrayal.

The general result of the study revealed that out of the total 42 textbooks analysed 26 textbooks were found gender biased. Among these only one was female biased and the other 25 were male biased. The rest, 16 texts were found fairly gender balanced. The problem was most serious in social studies texts of grade 7 and 5. The cumulative result indicated that women/girls were depicted only 23 percent while men/boys 77 percent. In the activites and occupations male and female sexes were depicted stereotypically. No sex demeaning messages were transmitted and pictures of men/boys and women/girls were fairly balanced. English subject texts of all grade levels were found fairly balanced.

CHAPTER I

INTRODUCTION

1.1. Background of the Study

Literature indicates that women constitute at least half of the world population. They also play significant productive roles and make substantial contribution in various economic spheres. There is overwhelming evidence that women, in addition to their traditional roles of child rearing and home activities, participate actively in farming, manufacturing, marketing and education as well as various types of activities.

Women receive less than one-tenth of the world income, but do two-thirds of the world's work. Although earning less than men, they work longer hours two to five hours more in developed countries, five to six hours more in Latin America and the Caribbean, and as much as twelve to thirteen hours more in Africa and Asia. When house work and child care are taken into account, women on average have a sixty to seventy hour week (Rowbtham, 1992:5).

To change and improve women's life in different sphere of activities feminist movements began to emerge in various countries of the world. Rowbtham (1992: 6-7) states that within feminist politics there are several differing political perspectives "Radical feminists" emphasise the primacy of men's subordination to women, which they regard as the key to changing society as a whole. "Liberal feminists" argue that women should have equal opportunities within society to jobs and education.

By the seventies, many states had organised commissions to investigate sexism in schools to present recommendations for change. It was generally recognised that sexism

had become as entrenched in education as it had in the overall social customs of the country. Task forces examined textbooks, curricula, syllabi, guidance and counselling procedures, and teacher training programs to see the portrayal of sex referenced messages. Everywhere sexist practices reinforced society's attitudes to the effect that the contributions and experiences of women were less significant than those of men (Feinberg, 1982:13).

United Nations Convention of the Elimination of All Forms of Discrimination Against Women, particularly on education is written under "Article 10". It reads, "States parties shall take appropriate measures to eliminate discrimination against women in order to ensure to them equal rights with men in the field of education and in particular to ensure on the basis of equality of men and women".

One of the actions to be taken by this international convention reads as follows:

> The elimination of any stereotyped concept of the roles of men and women at all levels and in all forms of education by encouraging co education and other Types of education which will help to achieve this aim and in particular by the revision of textbooks and school programs and the adaptation of teaching methods.

In children's literature, concern about gender bias has been reported since the 1960s. However, as indicated in various research, the quantity and kinds of bias depicted have not been reduced much (Show, 1995: 167). Text book analysts mainly focused on examining trends towards greater equity in sex representation. In doing this, they relied primarily on analyses that involve comparisons between the number of male and female characters and illustrations (Commeras and Alevermann, 1996:34).

Securing equal opportunities for the sexes is the main aim of "Liberal Feminism". The intent of Liberal Feminists in education is "to remove barriers that prevent girls reaching their full potential, whether such barriers are located in the school, the individual psyche or discriminatory labour practices". The conceptual foundation have there major

themes: "equal opportunities, socialisation and sex bias, and sex discrimination" (Acker, 1994:45).

Many countries of the world have formulated policies about women's affairs or have included women issues in their various policies. One of the objectives of the policy of Ethiopia on women's affairs quoted by Atsede (1995:46) is written as follows:

> to eliminate legal and traditional obstacles, wrong attitudes, conviction and misconception so as to enable women's participation in decision making activities at all levels and to improve the overall condition of women, particularly those of rural women.

Several activities are taking place at different levels to solve and improve women's condition in Ethiopia. Efforts are being exerted by governmental and non-governmental organisations to change stereotyped attitudes and increase women's participation. Yet there still remain many things unsolved.

Regarding women's education Mak (1996:83) comments that policy statements alone are not enough. Policy makers and implementers at all levels must deal with complex socio cultural realities that often impede female access to schooling. To him it is not enough to endorse girls' and women's education in abstract terms; a priority must be given to it.

In addition to school, media like television, radio, news papers and other mass media are very important instruments for shaping the attitudes and behaviour of children and their parents. Kumah (1996:11-15) remarks that media should expose the disadvantaged position of women and its negative impact on the economic and social development of the society. The media can mobilise communities in the fight against harmful traditional practices.

In Ethiopia, the modern educational system did not change the essence of the sexual division of labour, it had rather strengthened it through both its hidden and formal curriculum. Gender biased messages are reflected through books and teachers (Alem-tsehai, 1985:52).

In our culture, it is common to hear gender biased messages transmitted. These biased messages make women feel inferior and restrain them from participating in many activities. For instance, to mention some of the gender biased messages (quoted by Anbesu, 1995:6).

"A woman's Power is in the tongue".
"As heat is contrary to butter so is outdoor life to women."
"A quarrel provoked by a woman can never be settled down."
"A woman takes a year what a man can do in a day."
"A thousand angry women can be silenced by one man."

Such and other biased messages can be eliminated by education. In general, schools are able to eliminate gender biased messages, notions and activities if teachers and school directors are aware about gender issues; and by incorporating gender issues in the curriculum and avoiding gender biased messages in teaching-learning materials.

The images and language which are used in teaching and the extent to which learners can identify with them, have an important effect on how well people learn. For example, if women are under represented in teaching materials, or represented in demeaning ways, the women who are taught with these materials learn less well (Florent and others, 1994:113).

There are three major theories which explain how people acquire their concepts of sex roles and the content of those roles (Kohlberg cited in Mikati, 1987: 24-26). These theories are summarised as follows:

1. **The Psychoanalytic theory:** stresses that a child's early years (2-6) is critical in the development of perceptions of sex roles. Usually, the child identifies himself or herself with same sex parent and this facilitates learning of sex roles.

2. **The social learning theory** emphasises the influence of environment.
   a. **Direct instruction:-** some sex roles are taught by direct instruction; e.g., instruction to behave, to dress, to talk in a sex appropriate manner.
   b. **Direct reinforcement:-** involves reinforcing children for their sex appropriate behaviour and punishing for inappropriate behaviour.
   c. **Modelling:-** this occurs after a child watches and observes male and female models. This includes three phases:
      i. Learning phase: in different settings and situations children observe and notice the differences in male and female behaviours.
      ii. Abstraction phase: children abstract what they have learned and generalise it to the rules which direct their sex role behaviour.
      iii. Performance phase: children perform their appropriate sex roles because they have learned that they will be rewarded for this; they avoid inappropriate sex roles to avoid punishment.

3. **The cognitive theory:**stresses developmental progression in sex role development. To learn appropriate sex roles, children must pass through three stages:

   a. **Gender identity:-** the child labels correctly her/ his own sex and that of others.
   b. **Gender stability:-** the child grasps the concept that sex does not change across time.

c. **Gender constancy:-** the child understands that sex does not change when appearance changes.

All the above theories assert that sex role is attained through learning. Hence, schools as an agent of change have to bring appropriate sex attitude and behaviour. To this effect the contents of textbooks have to be free from sex bias.

1.2. Statement of the Problem

Ethiopia is a heterogeneous country with over 80 different nationalities and ethnic groups distributed in different regions of the country. In almost all Ethiopian nationalities women hold an inferior status and lack economic and social position. Their access to economic resources, production, social affairs and education vary from one ethnic group to another. Division of labour and culture generally limit women to the role of wife, mother, house keeper, etc. Many researchers, educators, economists and sociologists believed that women play important roles in the life of the society at large and in the life of the family in particular.

Most women's specific problems and needs can be directly linked and closely tied to the social relations between women and men. In the social relationship culture plays a very important role in either promoting or hindering the overall development of one country. Failure to take these relations into account can lead to increased problems of women and the society. Describing women and girls as subordinate or oppressed does not bring any change to women and society. Instead, it is cardinal to be able to identify the width and breadth of problems and examine the causes of subordination and oppression and try to find the solution to the problems.

It is undeniable that education plays important role in the development of the society. At the same time girls' education also contributes to the development of society. The research done by Benavot (1989) and king (1990) indicate that the expansion of girls' primary education has a stronger positive effect on the long-term growth especially of the

poorer developing countries than that of boys. These evidence tell the need of girls' access to primary education.

In education, one of the very important factors that play paramount role is the quality of content. The quality of content is helpful to bring behavioural change in knowledge, conviction and attitude. The content is vital in reproducing and reinforcing images related to women and men. Gerbner (1964:45) states that content is expressive of social relationships and social patterns.

Several writers (Oliver, 1974:254; Shaheed and Mumtaz, 1993:69; Njeuma, 1993: 128; Kinyanjui, 1993:143) have explained that textbooks have gender biased messages For example, Oliver states "boys in stories go on adventures, solve mysteries, get their clothes dirty, and build racing cars". On the other side, "girls make baskets, help mom, keep dishes clean, and receive assistance from Dads and boys". Similarly, "Mother's cook meals, mend clothes, wear aprons and scold the children".

The study made by Mannhein (1994:83) on learners indicated that learners are sensitive to sexism and bias in textbooks in the areas such as invisibility of women and the stereotyping and narrowness of certain roles. Similarly, several studies indicated sex role stereotypes have negative effects on children's attitudes and social development. On the effect of sex role stereotypes on children's attitudes, Schiller quoted in Mohamed (1985:36) says: "An early study of sex role attitudes of children found boys developing an increasingly higher self-opinion with age and progressively negative opinion for girls. The girls had an increasingly higher opinion of boys and lower self-image". This clearly indicates that sex role bias is harmful to both boys and girls and the society at large.

By reviewing wide literature Mohamed (1995:38) in his study concluded:

> ...Sex role stereotyping in reading material is a social poison. It creates crippling pressure on boys and low self-image for girls. It damages social relationships within the whole society. It has its impact on children's reading achievement

> and in consequence, the whole academic achievement. In summary, sex role stereotyping is an obstacle in children's social development. In addition, it creates negative attitudes usually toward females and it lowers self esteem of girls which limits their opportunities and ambitions in life.

Thus, to develop proper attitude and self image of both girls and boys, it is vital to eliminate sex bias and all forms of discriminations from textbooks and other instructional materials.

Writers, consciously or unconsciously, often depict the repression of women and girls through a portrayal of their relationships with men and boys and their social status in text books. plays, novels, poems, essays, etc. (Fowler, 1973:1124).Sexism in text book literature should not be considered as a simple fact of "reality" rather this bias should be commented (Wiik, 1973: 228). Therefore, critical investigation of educational content is very useful. This investigation must lead to eliminating sexism from the curriculum, textbooks, and others. Taking such a step is very important as it is essential in creating positive image of women and girls in the society.

After the launching of the New Education and Training Policy of Ethiopia in 1994, new primary school textbooks have been prepared since 1995. The textbooks are prepared at regional level. To date, no attempt has been made to study gender bias analysis of the newly developed text books.

Thus, the writer of this paper tried to investigate if the contents and illustrations of the newly developed primary school textbooks of Amhara Region have gender biased (sex-stereotyped) messages. To this effect the study tries to test the following research questions:

1. How do contents of primary school textbooks portray women's and men's image?
2. What type of role is assigned to men and women in contents?

3. How are women and men represented in occupations?
4. Which sex is more reflected in illustrations?
5. In what type of activities are females and males reflected in pictures?
6. Which sex is dominantly represented in textbooks?
7. Which of the texts have balanced treatment and which do not have balanced treatment of gender?

1.3. Significance of the Study

At this time efforts are being made to change curriculum in line with the objectives and needs of the society and the learner. Textbooks to be used for primary levels (1-8 grades) are prepared to satisfy the local need of the communities considering social, economical, cultural and linguistic conditions.

As it is stated in the New Education and Training Policy of Ethiopia (1994:13) regarding curriculum development one of the objectives is to:-

> ensure that the curriculum developed and textbooks prepared at central and regional levels are based on sound pedagogical and psychological principles and are up to international standard giving due attention to concrete local conditions and gender issues.

Thus, the study endeavours to find out if the newly developed primary school (1, 2, 3, 5, 6, 7 grades) text books of Amhara Region are developed in line with the above mentioned objective of the policy particularly with reference to gender issues.

The aim of the study is to analyse the textual and pictorial content of the newly developed primary school textbooks with respect to the portrayal of female and male sexes. The results of this study may be expected to provide the following contributions:

1. The study may serve as feedback for experts, editors and textbook writers and other concerned individuals. Therefore, it may help them to apply corrective action during textbook review or textbook re-print.
2. The study may indicate the effectiveness of workshop experience given to textbook writers by MOE as related to gender treatment in textbooks
3. The findings may give some information related to gender issue, so that experts, editors and text book writers of other regions will be aware of the issue.
4. The study may give teachers some information about gender treatment in textbooks, so that the teacher may be aware and practice equal treatment of sexes.
5. The finding may initiate educational media and mass media workers to apply equal treatment of sexes.
6. The study may provide various authors (journals, novel, short story, drama, poem etc.) information about the implementation of gender balance.
7. This study should serve as information for textbook writers, mass media workers, editors and other concerned individuals.

1.4. Delimitation of the Study

The scope of this study is limited to primary school (1, 2, 3, 5, 6, and 7 grades) text books of Amhara Region. Fourth and eight grade textbooks are under experiment at this time. Hence, they are not included in the study. It does neither include other grade textbooks nor other Regions' textbooks. It does not also include syllabuses, teacher's guide and other related materials. This is due to limited resource and time .

The various outlooks (ideologies) of feminist movements are not treated in review of related literature because the writer believes that these issues are irrelevant to the study.

1.5 Limitation of the Study

The writer thinks that the categories in this study are not exhaustive. The included categories are thought to be relevant to this study. Additional and detailed categories are not included due to shortage of money to be paid for data collectors (analysts).

1.6. Definition of Terms

Primary schools:-	Schools at which children (students) receive their formal education covering eight grades (1-8 grades) of the primary level.
Sex and gender:-	are interchangeably used in this paper.
:-	being male or female.
Gender identity:-	is the way one perceives one's male or female being. It is psychosocially and culturally determined (Almaz, 1995:20)
Gender issues:	are needs problems and concerns brought about in the distinction of perceptions and roles between men and women.
:-	appear in all components of development including land, capital, labour, technology, education, health and many aspects of life (ibid.).
Gender bias:	unequal (unbalanced) treatment of the two sexes (male and female) on topics language, activities, biographies and occupations
:-	gender bias, sex bias, gender stereotypes and sex stereo types are used interchangeably,

CHAPTER II

REVIEW OF RELATED LITERATURE

The literature will examine female education in Ethiopia, women issues in education, sex-stereotypes and the formation of stereotyped image, text books and gender messages, research findings of gender-bias analysis, and some guidelines for equal treatment of the sexes in literature.

2..1. Female Education in Ethiopia

The history of Ethiopian education clearly indicates that educational access had been wide for men in both traditional and modern education. Several literature explain that women had been deprived of educational opportunity mainly during traditional education. Although, not satisfactory, in modern education the participation of females has increased from time to time.

At all levels of education in both rural and urban areas (more in rural areas), the enrolment and achievement of girls are much lower than those of boys (Seyoum, 1986; Anbessu and Junge, 1988; Assefa, 1988, 1989 and Genet, 1991).

Currently, the country's educational policy makes no distinction in gender. Effort is being exerted to increase the status of women. However, the proportion of female students in the total student population remains low (46 percent) MOE, 1994). As far as the educational level increases, the participation rate decreases (Atsede, 1996:8).

There are various factors such as: economic, social and cultural factors which hindered the participation of females in the formal schooling programme. Senait and Ruth (1993:42) summarised the constraints. One of the constraints is gender stereotyped

educational materials. This issue refers to gender referenced messages in textbooks and other related materials.

2.2. The Advantage of Female Education

By most national governments and international organisations, education is seen as a very important instrument for creating democratic values and equity. Therefore, democracies need good schools (Stromquist, 1996:414).

Females constitute 50 percent of the world population as well as in the national level. The advantages of educating them are enormous to themselves, to their future families, and to the society as a whole. Mak (1996:83) states that educating girls yields social benefits such as: reducing the birth rate, maternal and child mortality, the spread of AIDS and increasing environmental benefits. Education increases women's position in the community. It encourages decision making within and outside family. It helps to bring additional income to the family.

Education "empowers" girls and women with a basic knowledge of their rights as individuals and as citizens of their country and the world. It enhances the participation of women in various jobs and activities of life. In general, the participation of women in schools at different stages do not only bring change and development in education, it also bring change and development in all branches of cultural, social, economical and political life of the society and the world. Therefore, women should be encouraged to participate in all activities.

The United Nations Children's Fund (UNICEF) and the United Nations Educational Scientific and cultural organisation (UNESCO/sponsored Pan African conference of Education for Girls which was held at Ouagadougou, Burkina-Faso in 1993 confirmed that Africa lags behind other regions of the world in female access to education (Obasi, 1997: 161-162).

In Ethiopia, the low level participation of women and girls may be explained mainly due to backward traditional views which gives maximal value to male and minimal value to females. Similarly, this traditional out look is also reflected in textbooks which hinders women and girls from using their potential. To increase the participation and productivity of women in diverse activities, it is vital to eradicate the constraints from time to time. Otherwise, without equal participation of females it is unthinkable to bring development. It is just like "clapping with one hand". Moose (1993:1) warns that neglecting women's equality in education means violating human right.

2.3. Women Issues in Education

The application of sex equality is hindered by discrimination United Nations Convention on the Elimination of All forms of Discrimination Against women indicates that sex discrimination does not only hurt women's development, status and right, but it affects social development. Similarly sex discrimination in the contents and illustrations of textbooks and other related material do not only affect girls, but it affects boys and the society as a whole.

Women and girls are discriminated against because of their sex, not because of their limitations and weaknesses. There is no scientific ground for lower status of women so far recognised. Although open and intentional prejudice exists, discrimination is often hidden and some times unintentional (United States Commission on Civil Rights, 1992:10-11).

It is not only in developing countries, but in advanced countries like USA also sex discrimination is practised. For instance National Committee on pay Equity (1992:129) assures that in USA women are discriminated in different jobs. It seems that certain occupations are attached to males while others are attached to females. This is perhaps the outcome of gender stereotyping. Although the situation is minimised than it was in the past, there is still bias against women in the family, work place, schools, etc. The most

important tool to minimise discrimination and gender biased messages is education. The fourth World Conference of Women held in 1995 in Beijing identified measures to improve women's education interms of access, content, retention and participation at all school levels (Stromquist, 1996:422).

Various international and national organisations as well as governments are giving due concern to women issues related to education. The United Nations Economic Commission for Latin America and the Caribbean (ECLAC) offers 14 strategic actions. One of the issues is eliminating sexism and other forms of discrimination from educational processes and the messages conveyed by education. (Ibid., 417-18).

One important project is conducted in Latin America to implement non-sexist education and has suggested the following actions to make education gender transformative:

1. Promote the creation of opportunities for boy and girls to discuses in critical and creative ways the sex-gender system and its consequences on social and work life;
2. make gender issues more visible in educational environments;
3. support processes by which teachers discuss sexual discrimination and fragmentation and identify social opportunities for both genders;
4. eliminate the sexist features of curricula and educational materials;
5. incorporate into the curriculum the contribution of women to the development of culture and society;
6. promote the analysis and revision of programs that train women for the labour force to eliminate all forms of discrimination and segmentation.
7. sensitised and train teachers to eliminate sexist practices and to improve their performance to attain an effective equality between women and men in the educational process; and
8. incorporate in teacher training curricula the themes of gender and equal opportunity for men and women. (Stromquist, 1996:422).

Although governments and organisations have formulated policies and projects, Tomesevesk (1993:21) and Stromquist (1996: 423) complain that changes have not taken place as much as expected.

In Ethiopia, the government has given due attention to women's issues. Women's affairs offices are structured from the Minister level down to woreda level. Gender issues have been and are being discussed in various workshops and seminars run and sponsored by international and national organisations. Women's affairs office is also working and trying to solve women's problems through their representatives in different ministries, authorities and commissions. Several changes and improvements have taken place but, yet there are also many arduous activities to be implemented. The problems that has existed for centuries may not be as such easy a task to be uprooted in a limited period of time. Leave alone Ethiopia which has many obstacles, gender issue is not yet solved even in the advanced countries of the world. In Ethiopia, for example traditional and backward practices like "female genital mutilation (FGM), early marriage, rape, abduction, upbringing preference of son, dowry payment, cult of virginity, polygamy, abusive sayings, degrading proverbs, unable to decide on anything, unequal pay for equal work, prostitution and discrimination inheritance" are some of the negative practices which are not completely abolished (Nunu, 1997:2; The UN report of the working group, 1991:84).

To eradicate negative and backward practices and biased attitudes the best instrument seems education. However, Baily (1996:75-76) states that reviews of curricular materials, data on achievement and research teacher-to-student and student-to student interaction created barriers to education of girls. In a patriarchal society, patriarchal values will be brought into the classroom by learners, teachers and teaching-learning materials (Sunderland, 1994:6). In her review of 81 studies of gender differences in teacher-student interaction kelly quoted by Sunderland (1994:114) writes:

> It is now beyond despute that girls receive less of the teacher's attention in class...It applies in all age groups...in several countries, in various socio-economic groupings across all subjects in the curriculum, and with both male and female teachers...Boys get more of all kinds of classroom interaction...

Gender referenced messages in classroom materials such as: textbooks, readers, teacher produced work sheets examinations, dictionaries, teacher's guides, etc. can impact on learning opportunities (Sunderland, 1994:8) Gender biased learning and teaching material may be able to produce wrong images of students and teachers. This condition also may affect the attitude of them in their latter life. It may hinder girls from active participation in various jobs and social life. Hence, biased messages should be avoided. Boys and girls need to learn to appreciate and value the accomplishments of women and men. There has to be certain space for women issues in the learning materials. Pollard (1996:73) suggests that schools need to address gender equity knowledge and issues about gender need to be integrated into the curriculum.

In Ethiopian schools textbooks can not be divorced from teachers and teachers can not teach without textbooks. Both influence each other. Sunderland (1994:64) writes: "a non-sexist textbook cannot guarantee non-sexist teaching... The most non-sexist textbook can become sexist in the hands of a teacher with sexist attitudes and importantly, the reverse is also true" This implies that if the teacher is a very important figure to implement non-sexist curriculum, this necessitates the importance of gender issue in teacher education programs and awareness in workshops. On the other hand, the non-sexist attitude of the teacher has to be supplemented by gender balanced textbooks and related educational materials.

The school as agent of solving social problems has to change gender biased outlooks that the students brought from their family and environment. As Fierere cited in Grant (1982:62) stated, the learners are not mere receivers, they are responsible to participate actively in social issues and solve problems and bring the expected change. The

teacher also, according Ornstein (1988:43) is a prime agent of the social reform and cultural transformation. He should be concerned to challenge the outdated views of the society in schools.

2.4. Sex Stereotype and its Formation

2.4.1. Sex Stereotype (Bias)

Sex stereotype is reflected in the family, work place, schools (through teaching-learning material, directors, teachers & students) recreational place, mass media, etc. by men and boys or by women and girls found at different age levels. The two sexes, male and female can be stereotyped in terms of various tasks, activities, privileges, etc. that are assigned to them.

Sex stereotype is "the constellation of various traits, activities, values and behavioural characteristics attributed to and used to describe and differentiate two sex groups in a socio psychological set up" (Das and Ghadically, 1988:124) More than this, Ashmore and Delboca (1979:220) reviewed the definition of sex stereotypes used by different researchers. They identified four generally accepted characteristics:

1. "it is usually considered to be cognitive;
2. it is a set of beliefs;
3. it deals with what men and women are like; and
4. it is shared by the members of a particular-group".

Gender bias can be shown in occupations. Occupational sex role distinctions are evident with males more likely to be involved in works requiring strength and technical skills, while women are more frequently engaged in tasks requiring skills in child rearing, homemaking, and interpersonal relations (Hoyenga cited in Rao, 1988:99).

Sex biases are also used in languages. Vetterling cited in kalia (1980:234) says that a word or a sentence is biased if the idea "creates, constitutes, promotes or exploits unfair or unnecessary distinction between the male and female sexes and if the word or the sentence contributes or brings the oppression of either sex". Sexist language limits the activities of one sex (Shute cited in Kalia, 1988: 234). This distinction is on the basis of biology (Kalia, 1988:234-235).

Male biased language in literature brings negative consequences. When women are excluded from men activities, occupations, achievements, etc., they will be left as observers. For instance, a book entitled "Women and Her World" for a boy may mean that he is excluded, and on the other side "Man and His World" may mean for a girl that she is excluded (ibid.). This means if one sex is represented and the other sex neglected or less represented, the neglected or less represented sex member may give less attention to the content and as the result learning will be impaired.

In many cases, both men and women are not even aware that what they are saying could be considered sexist (Woo'ds, 1994:21). This does not mean that all sexist messages are unintentional. Sexism can be either conscious or unconscious, intentional. or unintentional. Be it conscious or unconscious, intentional or unintentional at this time educators, psychologists and sociologists have become aware of sexism. This is due to the fact that sexism violates human rights. This is why effort is being exerted to avoid gender biased messages in the curriculum.

2.4.2. Formation of Stereotyped Image

Girls and boys are thought to be socialised by the family, the school and the media (Acker, 1994:46) Therefore, the first sources of children's image are parents. When children join schools and society their image broadens. Since society is a conglomeration of individuals, these individuals shape society and on the other side, society shapes them.

Sex stereotypes are the product of biological and social conditioning. It starts to develop from childhood and passes to the other developmental stages. The family, the school and the society are important contributors to sex stereotyping in children (Das, 1988:124). Sex stereotypes are also interrelated with culture (Roy, 1988: 136-137; Talbot, 1992:174). Sunderland (1994:2) defines culture as "beliefs, social practices and institutions, such as child-rearing practices, family, school, economic structures and employment structures". According to him different cultures shape biological males and females in different ways and different cultures develop different concepts of gender.

Language plays a very important role in shaping the image of human beings (Rothenberg, 1992:322). Sexist language spreads and reinforces sex role stereotypes. Our opinions in any given matter are shaped by the way in which facts were presented to us (Kalia, 1988:235). Sexist language develops wrong self image. Self image is "the way a person sees himself and the value he places on himself " (Walklin, 1982:147).

Taylor (1973:1045) mentions that girls and boys should be helped to develop a healthy self image at childhood. He explains that if textbooks are free from sex stereotypes, they are able to contribute to the building of self confidence, identity, and a sense of self-worth in students. In addition, Kumah (1996:10-11) says that concepts of equality and equity between the two genders should be included in the curriculum.

Doris cited in O'Donnell (1973:1069) at the annual meeting of the American Educational Associates warned that children interpret language quite literally. For example when they hear expressions such as "chairman or brotherly", etc. they think of men (rather) than of the human race. Words that naturally imply "female" include "secretary, nurse, and cook". On the other hand one understands "architects, engineers and scientists" are "males". (O'Donnell, 1973:1069). This seems also true in the case of Ethiopia.

In the study on the self image of pre kindergarten girls and boys, Chasen as cited in Chasen (1974:222) found that even four year olds and five year olds have stereotyped

beliefs about themselves and their parents. In general, girls as well as boys believed that males were "smarter, stronger, fixed cars better, drove better, worked better,... ". The self image of the boys was in general better than the girls' self image. Work preferences of boys were more diversified than girls. The self image of the girls improved some what after teachers worked with on a variety of tasks designed to create a more positive self image. This evidence clearly shows that sex bias starts to develop at childhood level and teachers are able to minimise sex biased image of children through instruction.

Sex stereotypes have been observed in occupations. The studies of Gettys and Cann (1981:301-308) & Archer (1984:1-10) have indicated sex typed preference for various occupations and activities among adolescent groups. Among young children, boys engage in outdoor activities where as girls engage in house hold work (Kuhn, Nash and Brucken, 1978:445-451). Children are able to classify and label different occupations for men and women rather than for both sexes (Crow and Taebel, 1976:360-63; Franken, 1983:59-68).

Crow and Taebel (1976:360-63) explained that when children start school, their stereotyped notions of roles are reinforced by school practices like division of duties according to sex, by the physical activities and facilities available to girls and boys, by textbooks, and by prevalence of one sex in certain roles in the schools, for instance, "women as teachers, men as principals".

Therefore, starting from early childhood, females must be provided with a view of themselves as capable, productive, self-sufficient, etc. individuals. Females must not restrict themselves as "wife, mother, etc. and males as father, leader, etc." (Wiik, 1973:229). In general, schools as agents of social change, must strive to build the notion of equality of women and men. Sex stereotyped views and practices which were developed out side schools have to be eradicated through the effort of schools.

2.5. Textbooks and Gender Messages

2.5.1. The Importance of Textbooks

Textbooks are very important tools in the teaching-learning process. Jarvis (1966:422) mentions that they are used because they have designed to present subject matter in a sequential manner in graded series accepted by educators. Jarvis also explains the three views regarding textbooks. It may be summarised as follows:

The first view is that a textbook is actually a complete teaching-learning situation in print. It is not mere book, but is a carefully, deliberately designed book intended for specific school use. The second point holds that a textbook is a general outline for a course of a study, rather than a complete teaching-learning instrument. The third view maintains that the textbook is simply a cyclopedic book containing authoritative information in certain branches of knowledge. It is identical with any other book of factual or specialised nature suitable for pupils of varying abilities, and should be used as library reference to help fulfil some purpose of the learner.

It seems that the second view gives decisive role to the teacher. In general, the three views maybe related with the way different countries and different schools use in classroom situation. Some schools may use textbooks that have guide lines while others reference materials. However, in Ethiopia it seems that textbooks are carefully, deliberately designed for specific subjects and grade levels. Specially in primary levels where other resources and additional materials are not available, textbooks play paramount role. There are no other teaching learning materials other than textbooks to run the teaching-learning adequately. Therefore, it may be possible to say that they are the backbone of primary school. Without textbooks where other educational materials are not available, it is unthinkable to run schools. This is clearly observed in schools of remote areas where textbooks and teachers' guides were not available.

In primary schools of Ethiopia, textbooks are not only to be used by students. Teachers are also dependent on them. The writer observed elementary school teachers using old books with old information in the new condition. For instance,, after the formulation and organisation of the new regional states of Ethiopia, grade four teachers of social studies used to teach the old administrative regions of Ethiopia. Inaddition, in some schools where certain textbooks for certain subjects are not found, it is observed that teachers were not able to transmit adequate knowledge and skills.

Textbooks are the most useful learning materials in primary schools of Ethiopia. They are prepared carefully by textbook writers and written in line with learning out comes prepared by the Government. The students take them to their homes, read them and do home works. Teachers also prepare annual and weekly plans, prepare notes and examinations, and teach in class rooms by using textbooks.

Textbooks have several advantages. They are the most inexpensive means of getting instructional materials into the hands of pupils. They avoid spending unnecessary time in examining a wide range of materials. Textbooks avoid decisions on who should select the instructional materials and decisions on where they best fit into the program. They enhance large group instruction, keeping instructional staff to a minimum and they facilitate changes in personnel. Textbooks make it easy for the principal to keep follow up on the progress of a class. Textbooks settle the question of what constitute the curriculum of a school. They insure a systematic presentation of content, and when principals have little confidence in their teachers, textbooks can be said to be "teacher proof". (Talmage, 1972: 23-24).

Textbooks play very important role in the over all development of children. Well prepared texts often provide important structural framework for much of what goes on in the classroom. They have a very great power to attract learners toward learning and teachers to teaching activities. The way the textual materials are written; their appearance, their content and the way they are arranged, and the illustrations all affect the quality of the

books (MOE, 1989: 6). If textbooks have good quality, students will be motivated towards learning. Farrent (1964:92) asserts that motivation is cardinal in learning because it provides power. On the contrary, if textual materials are not constant and logically ordered and arouse only shallow interest, students will be left with insufficient knowledge of the subjects (MOE, 1989:6) Teachers also will be less interested to teach.

Specially, the primary grade level is a crucial period in educational development of children. This is the stage in which many things are printed and rooted in their mind. Therefore, there is need of developing acceptable and important knowledge attitudes and feelings. Hence, textbooks have to fulfil this task.

2.5.2. Gender Messages in Textbooks

It is asserted in several literature that education is an affective agent of socialisation. The content and illustrations of textbooks emerge as one of the crucial elements in reflecting, reinforcing and reshaping and changing society's concepts, outlooks, norms, expectations and aspirations concerning the position of girls and women, and boys and men. Those of wrong attitudes can be eliminated by means of education. Therefore, care has to be taken in portraying images of males and females in the content and illustrations of textbooks. This issue is very important in Ethiopian schools in which the culture undermines the role and status of women and girls.

Regarding the contribution of books and school for socialisation process of girls and boys Williams (1987:194-5) says "...books and school provide models for them instructing them in how they ought to be and behave, informing them in countless ways, often indirectly, of the values of the society and of its expectations of them as females and males".

From the textbooks they read, children learn about sex-role identification and sex-role expectations. They learn about the outside world, about diverse cultural norms, about

what other people think and feel. They learn what behaviours are acceptable and are not acceptable. Children's books and textbooks are critical in forming a child's identity and personality. Therefore, understanding the importance of textbooks and books in the formation of children's values and self-concepts, it is imperative that sex-bias be eliminated (Oliver, 1974:259-60).

Although women's equality is written in policy, there can be a gap between policy statements on papers and practise. There can be constitutional guarantee for women's equal opportunity in education. At the same time, if the educational content discriminate against women by reinforcing sexual division of labour which restrict activities for women, attainment of their occupational goals is hindered. This condition discourages women from acquiring the necessary attitudes and skills (Tsion, 1990:45)

Content analysis of school textbooks in several countries show biases and neglect of women and girls across a wide range of subjects. Some subjects like domestic science depict females on house hold activities (Plamout cited in Acker 1994:39). This kind of treatments of textbooks limit the interest of girls to domestic activities. This shows that textbooks provide children with role model of what they are supposed to be like when they grow up (Jannings, 1975:220).

Some textbook writes may not recognise biased or stereotypical treatment of the sexes. Those that do not will need to feel that textbook sexism hinders learning. It is widely believed by teachers and administrators to have this consequence, before they are prepared to move away from biased representation(Sunderland, 1994: 62)

Stereotypical representation of women in textbooks may alienate female learners. Writing on textbooks for adult learners in the USA Carroll notes (1978:55-56)

> Adult women attending foreign language classes are...there because the language is necessary to them for career advancement, university studies or to find employment in a

> second language environment...where many single and married women are part of the labour force, seeking to enter it, or acquiring foreign language skills to improve their potentials, it is unjust to portray only house wives and future house wives in textbooks

In Ethiopia at a workshop on "Psychology of the Girl Learner" 300 participants form primary schools and education offices were asked to give sex bias examples in the textbooks used in primary schools. Examples such as using the male form for verbs in maths assignments to pupils and unequal educational and occupational representation in the books with traditional division of labour were mentioned. The participants recommended that texts should be gender neutral regarding the division of labour and should include stories of female scientist, doctors, etc. (MOE, 1989:6-7).

In Ethiopia formal education is a strong factor in occupational role modelling for children. It is the main agent for the transformation of the society and has a high status among people. Therefore, it is cardinal to assure that the messages are consonant with the overall policy of the Government regarding the equality of sexes (ibid.).

To apply the slogan of "equality" in textbooks women and girls and men and boys should be represented equally in traditional and modern occupation in house hold and out of domestic activities in biographies and in pictures. Gender referenced nouns, pronouns, verbs (in Amharic), etc. of male and female should be proportional. Otherwise failure to do this brings gender bias and the consequence will be negative to the students as well as to the society.

This implies that eliminating sexism in the field of education is very important and it is true that as a result this could bring changes in the social condition (Tsion, 1990:17)

2.6. Some Findings of Gander Bias Analysis of Textbooks

To convey a message there is need of medium. It is through medium that gender referenced information are transmitted to the listener observer or reader We daily hear stereotyped messages. Commenting this Ghadially, 1988:207) says the following:

> One need only flip through the pages of popular magazines, journals, and news papers, watch television programs and commercial films to get the content of them loud and clear. Women's major concern is domesticity: they are capable of limited and highly stereotypical behaviour, women are for sexual exploitation and are the safe and easy targets of male violence and abuse. The power of media to create select and convey particular kinds of images about women can not be underestimated.

In the area of mass media several content analysis on gender issue have been done. For example the study on news photographs (Luebke; 1987:121-133) advertisements in medical journals (Howkins and Aber, 1988:43-59) and cartoons (Mataicn and Burger, 1987:179-186) all indicated biased messages.

Similarly, educators and psychologists are very much concerned about the eradication of discriminating messages in learning and teaching materials. Education Commission of India quoted by kalia (1988:233) writes the following:

> Each sex to develop a proper respect toward the other because...it is unscientific to divide tasks and subjects on the basis of sex and to regard some of them as `masculine' and others as 'feminine'. Similarly, the fact that the so-called psychological differences between the two sexes arise, not out of sex but out of social conditioning, will have to be widely publicised and people will have to be made to realise that stereotypes of 'masculine' and 'feminine' personalities do more harm than good.

Whatever the activities, occupations, etc. and whatever gender referenced messages, and be it positive or negative information both male and female genders should be portrayed at equal level.

Several content analysis studies reveal that textbook messages are not free from sex-stereotypes. Trecker (1971:249-260) was concerned with whether or not the textbooks conveyed stereotypes. After examining over twelve of the most popular US history textbooks, he concluded that:

> Despite some promising attempts to supplement the scant amount of information devoted to women in American history texts most works are marred by sins of omission and commission. Texts omit many women of importance, while simultaneously minimising the legal, social and cultural disabilities which they faced. The authors tend to depict women in a passive role and to stress that their lives are determined by economic and political trends. Women are rarely shown fighting for anything; their rights have been 'given' to them. p.251

Kalia (1980:86-87) conducted content analysis of 41 Indian textbooks, 21 English and 20 Hindi language instruction. The majority of characters were male. In seventy percent of the lesson men emerged as dominant figures. There were 47 biographies of men, only 7 biographies of women. Over 100 female characters were victimised as a result of their sex roles. In most lessons, men ventured out to seek fame, fortune, while women stayed home to wash dishes and clothes. Males in Indian textbooks occupied high prestige occupation.

Of the 465 occupations held by characters in the plots, women were completely excluded from 344. Most women were relegated to low-prestige, low income positions (house wife, servant, prostitute). The authors and editors of Indian textbooks used nouns and pronouns that excluded females from generalisations about human society.

In former German Democratic Republic primary school textbooks were analysed with respect to male and female sex stereotypes. The analysis indicated that sex-role stereotypes prevailed in most of the texts. Women were more often involved in household, family and childhood education affairs (Leistner cited in MOE, 1989:6).

Wiik (1973:225) examined fifteen literature anthologies which were frequently used by him and by other seventh-eight and ninth grade teachers in his junior high school. He carefully paged through each anthology and recorded the total number of selections sampled: the number of female authors, male authors, female human major characters, male human major characters, male animal major characters, and female animal major characters. The total of 450 textbook literature selections he studied involved 376 male authors and ninety-four female authors. The 450 selections involved 411 male human characters, twenty-nine male animal characters and one female animal character. These figures total 440 male major characters and eighty-eight female major characters. The study indicates that female and male sexes are not represented equally.

Taylor (1973:1045-1047) analysed primary and intermediate readers used in California. In the first six grades, the study indicated that at least 75 percent of the main characters are male. In illustrations, the females are shown to be limited; only 15 percent of illustrations include females. In both primary and intermediate levels together, males are pictured as "dominant, creative, exploitative, and predominantly successful in the many fields of endeavour". Females, on the other hand, are pictured as "submissive and uncreative, with a tendency to withdraw in the face of difficulty and have only limited success in a narrow rage of activities".

Rhome cited in O'Donnell (1973:1068) in his study on printed materials mentioned that words referring to males occurred in higher frequency, boy or boys appearing 4,700 times to 2,200 times for girl or girls and that the word he occurred three times more frequently than she.

In children's textbooks, Nilson (1973:1031) made a study in "Seven is Magie" (Level 6) and he counted the numbers of boys pictured as compared to the number of girls. There were 213 boys and only 80 girls. In "The Dog Next Door" (level 7) he counted masculine and feminine pronouns. There were 618 masculine pronouns as compared to 170 feminine ones.

Central New Jersey National Organisation of women cited in Schnell (1975:737) made analysis on reading series published during the sixties by 14 companies. The finding indicated that boy-centred stories outnumbered girl centred stories by the ratio of 2.5. to 1; adult male main characters outnumbered female adults by 3 to 1; and male biographies outnumbered female biographies by 6 to 1. Boys were the main characters in 3 out of 4 stories having themes of ingenuity, industry, bravery, adventure and imaginative play. Girls were shown exhibiting passivity dependence, and docility 6 times to every time for boys.

Wendy cited in MOE (1989:6) indicted that two studies of gender stereotype analysis of textbooks were done in Togo and Zambia. In 1982 according to Togo study by Biraimah women were found only 20 percent of all the people in the textbooks and were depicted as passive and weak, mainly participating in frivolous social or house-making and nurturing activities. Similarly, in the Zambian study sex stereotypes were also found in the readers. One content analysis study was done by Laskowski (1988:1-17) on gynaecology textbooks used from the years 1978 through 1983 to asses whether gender stereotypes, paternalism and other forms of condescension toward women had been eliminated. The finding revealed that one quarter (one third of the more basic generalised texts) still have sections reflecting traditional sex-role stereotypes and paternalism. The writer concluded that sexism in still reflected in gynaecology texts.

Williams (1987:1994-1997) conducted an extensive study of nearly three thousand stories in over one hundred books for grades one through six used in USA The following sex ratios were reported by him: "Boy-centred stories to girl centred stories 5:2 ; adult male

An analysis by Obura on textbooks for teaching agriculture in Kenya at the primary school level indicates the erroneous image of the Kenyan farmer. The farmer in the textbooks is always a male (Obura cited in Kinyan jui1993:143).

The four textbooks widely used in the first grades of primary school in Peru were analysed. Woman is portrayed as protector of her children, who worries about the family scarifying for her own children fighting for her own children. The male is portrayed as decision maker, country governor, organiser himself and others, ordering constructing and creating things (Masilla cited in Fernondez, 1993:209).

Mikati (1987) and Mohamed (1985) analysed textbooks. Mikati analysed ten textbooks of Arabic readers and civics texts for grade 1 through 5 used in Lebanon to find out if modern sex roles where represented in balanced ways. Results showed that there was unequal representation of male and female in various roles in both contents and pictures Mohamed analysed 4 Arabic elementary reading textbooks from grades 3. 4. 5 and 6. The results showed that females were portrayed in stereotyped roles. Males were represented in larger percentages than females in all the textbooks analysed in this study.

In Ethiopia, there are few gender bias studies on textbooks. The first gender bias analysis was done by groups under MOE constituting study team and analysts. The study was carried out in 1989 on primary school (1-8) textbooks on the trial of general polytechnic education. The analysis was done on 53 textbooks for 12 subjects by subject experts on topics, language, activities, characters, occupations and examples. It was found that all were generally biased toward males. Pictorial content was also male biased. The exception of these general findings was home-economics, which is female biased. The problem was most serious in science subjects. This finding clearly indicates the extent of the problem in creating wrong image about females in the minds of the young generation of the country. This also brings bad effect in the overall latter life of the youths. It can be

reflected in family, work place, social relationship, etc. It also impedes women's participation from all spheres of life.

Nevertheless, all findings indicate that the analysed textbooks show sex stereotyped messages. Among the reviewed literature the only study revealed with non-sexist language was done by Osler (1994). Osler cited in Commeyras (1996:35) made a study on history textbooks published in 1991-92 to examine whether the representation of women reflected equity initiatives promoted in the new National Curriculum. She did exhaustive study of the visual images, the language of texts, and the exercises and activities in 36 textbooks. The results of her study showed that history textbooks were successfully avoiding sexist language but still had a long way to go to achieve a balanced historical record that promotes understanding of the lives of women in the past.

2.7. Some guidelines for Equal Treatment of the Sexes in Literature

Writers have suggested some points to be considered for equal treatment of the sexes (male and female) in literature. MC Graw-Hill Book Company (1975:725-727) had suggested several points regarding the general condition of the gender treatment the company says:

> Men and women should be treated primarily as people, and not primarily as members of opposite sexes. Their shared humanity and common attributes should be stressed not their gender difference. Neither sex should be stereotyped or arbitrarily assigned to a leading or secondary role.

Women should be represented in various professions. They should not always be shown as nurses, teachers, etc. they should be also shown as doctors, dentists, scientists pilot, etc. Women should be portrayed in positions of authority over men and women should be shown engaged in home maintenance activities, such as: cooking and house cleaning and house hold repairs. Man should be shown doing laundry, diapering the baby etc. (ibid.).

Oliver (1974:256-258) by reviewing various literature writes how women and men should be treated by categorising into different elements.

1. Frequency of occurrence:- Women and men should be equally represented in the title, the central roles, and illustrations.

2. Personality or character traits:- positive and desirable character traits should be attributed to female characters as well as male. Cleverness, creativity bravery, kindness, persistence, curiosity, adventurousness, achievement, self-respect and self-reliance should be found in women and girls as well as in men and boys.

3. Interests and activities:- as frequent as boys are active and adventure some girls should also be active. Girls should engage in varies pursuits. Their interests and activities should not be only those typically ascribed to females-that is cooking sewing, cleaning and doing crafts, Girls should not only follow, but they should lead.

4. Profession or career options:- Women should not be shown as mothers, wives, and teachers. They should be shown in various careers and professions.

5. Physical appearance: girls and women should be pictured in illustrations the way they look in life. All boys are not taller than girls, all mothers do not wear aprons, all fathers do not smoke pipes.

6. Role in the family:- women and girls should be portrayed participating equally in family decisions. Fathers and boys should be shown participating in household chores.

Tiedt (1973:1073) formulated alternatives to be replaced to make gender neutral. He mentions the following examples: "Every child makes his own dictionary in which he enters words from his stories".

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1. Change the pronouns
write as: Every child makes an individual dictionary in which they enter words from their stories

2. Change into plural forms.
write as: children can make their own dictionaries in which they enter words from their stories.

3. Use couple or alternate choices
write as: Every child makes a dictionary in which he/she enters words from stories written.

4. Use the passive form
write as: Dictionaries are made in which every child enters words from stories written.

Pauwels (1991:57) states that:

> When describing a couple (woman and men), treat both partners as equals. If mentioning women and men together, do not always list the man first; try instead to alternate the order in which men women are described.

Sunderland (1994:60) mentions two alternatives of avoiding occupational stereotyping:

1. By using a statistically accurate reflection of a society or the societies in which the target language is spoken. Thus, whatever proportion of management is female (and in Britain the figure was 27 percent in 1989), and whatever proportion is male, similar proportions of female and male manager would appear in a textbook.

2. Another theoretical alternative is to have as many women as men in each occupation in the textbook.

To the writer, the second alternative seems sound. Education should not serve to maintain the existing condition of society. But as agent of change it has to transform the society to better conditions. Females or women being at least half of population, have to be represented equally in any occupation.

CHAPTER III

DESIGN AND METHOD OF THE STUDY

3.1. Subjects of the Study

To investigate the status and portrayal of females compared with males, the primary school textbooks of various subjects of grade 1, 2, 3, 5, ,6 and 7 are analysed. Hence the universe of the study includes all the newly developed textbooks which are being used in primary schools of the Amhara Region.

The Transitional Government of Ethiopia launched the General Education and Training Policy in 1994, as a result of which decentralisation of the educational system began to be implemented. Various regions of the country started to develop their own textbooks to fit their local needs and situations. Similarly, the Amhara Region (Region 3) started to prepare primary school textbooks in line with the general objectives of the policy. At the present time, the developed textbooks are being used in the primary schools of Amhara Region. Table 1 shows the grades, year of preparation, year of experimentation and year of implementation of primary school textbooks of Amhara Region

Table 1. The Grades Years of Preparation Experimentation and Implementation of Primary School Textbooks of Amhara Region.

Grades	Preparation	Experimentation	Implementation
1 and 5	1993/94	1994/95	1995/96
2 and 6	1994/95	1995/96	1996/97
3 and 7	1995/96	1996/97	1997/98
4 and 8	1996/97	1997/98	-

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As indicated in the table grade 4 and 8 textbooks are under experiment in the year 1997/98. Therefore these textbooks are not included in the study.

In the inclusion of this content analysis study, English textbooks are prepared under Ministry of Education (Institute for Curriculum Development and Research) to serve for all regions of the country except Region 14 and 1. Region 14 and 1 have developed their own textbooks of English. The rest of the textbooks are developed under the Amhara Regional Education Bureau. These textbooks are being implemented only in Amhara Region. Table 2 shows the subjects, the grades, and the number of textbooks used in the study.

Table 2 Subjects, Grades and Number of Textbooks

No	Subjects	Grades	No of Textbooks
1	Amharic	1, 2, 3, 5, 6	5
2	English	1, 2, 3,5, 6, 7	6
3	Maths	1, 2, 3, 5, 6	5
4	Science	1, 2, 5, 6	4
5	Social studies	1, 2, 5, 6, 7	5
6	Art	1, 2, 5, 6	4
7	Music	1, 2, 5, 6	4
8	Physical Educ.	2, 5, 6, 7	4
9	Env. Science	3	1
10	Aesthetic and Physical Educ	3	1
11	Physics.	7	1
12	Chemistry	7	1
13	Biology	7	1
Total			42

N.B. Grade one physical education and grade seven Amharic and maths textbooks were not available for analysis.

3.2. Method of the Study

For this study the method used is content analysis. Many writers used this method to analyse text books and related materials. Koul (1984:413) asserts that curriculum research can be conducted through content analysis of textbooks, pamphlets, reference books and other written materials for developing and modifying school curriculum at various stages. In this case, the newly developed primary school textbooks of the Amhara Region are analysed if they have gender biased messages. For this analysis forms and categories are used. Categories of this study are identified from reviewed literature. The categories identified are thought to be relevant to this study by the writer. Koul (1984:414) and Travers (1964:318) state that the researcher of content analysis should indicate the categories and the categories should be appropriate to the problem under consideration. Koul adds that form should be used carefully inorder to get reliable and valid data.

3.3. Sampling

The study of content analysis has sampling problem. The units which the researcher analyses must be representative of the total material which he is concerned with. Therefore, the results of samples can be generalised (Koul, 1984:414). The writer did not dare to take sample of textbooks being doubtful that the sample textbooks may not represent the whole content of textbooks. For instance, the messages of language textbooks may not be as such similar to chemistry or physics textbooks. The messages in language textbooks are mainly gender referenced where as the messages in chemistry and physics mostly focus on scientific ideas and explanations. But, this does not mean that there are no contents reflecting gender messages in chemistry and physics.

Due to the above mentioned defects, to select samples that can represent the whole, chapters or units, or lesson numbers or pages are considered. To take the representative sample of each textbook lots were cast by using two pieces of papers that read "odd" and "even" to make random selections. If for example a paper on which "even" is written was

drawn, even chapters or units were taken as sample to be analysed. Therefore, out of the chapters or units of each textbook 50 percent was selected as sample. Within the selected chapters or units, written contents, pictures and questions were analysed in the study.

3.4. Categories

The most important issues in content analysis are categories. Koul (1984:414) says that the researcher of content analysis should clearly indicate the categories and make provision for marking the category into which each unit falls. So far, the literature does not indicate any standardised categories in which content analysts agreed. Lack of such categories is a common problem in the area of content analysis. Had there been standardised categories, it would have been preferable. Holsti quoted in Makati (1987:82) says the following:

> The disparity of purpose which characterises content analysis research makes standardisation difficult to achieve... A more basic reason, however is that there are few areas of social inquiry in which there is sufficient consensus on theory to inform the selection of categories. More specifically, we are lacking a general theory of communication from which such categories might be drawn. Finally, many of the most interesting content analysis will probably always depend on categories developed especially for the data at hand.

Due to this reasoning, it is imperative for the researcher to develop categories for the issue he or she is dealing. For this study the forms and categories used by MOE (1989) in the study entitled "Gender Analysis of primary School Textbooks: In Trial of General Polytechnic Education Curriculum in Ethiopia" are adapted, This is due to the following reasons:

1. they have been tried in the context of Ethiopia and the writer has found them to be effective.

2. several studies reviewed in this literature have used one or more than one categories which were used by MOE.

Hence, the content analysis was done based on the following categories:

I. Written Contents

1. Topics and sub-topics
2. Language
    i. Proper names
    ii. Common nouns
    iii. pronouns
    iv. verbs
3. Activities
4. Biographies and Characters
    i. biographies
    ii. major characters
    iii. minor characters
5. Occupations
6. Sex demeaning examples

II. Illustrations (pictures)

7. Representation of human pictures
8. Activities in pictures.

3.5. Procedures of the Study

3.5.1. Data Organisation and Analysis

To collect data from primary school textbooks of Amhara Region analysts (data collectors) were needed. It was difficult to the writer to examine all textbooks under the

study. Therefore, data collectors were selected among Debre Berhan Teachers' Training Institute instructors. This is the institute in which the writer was teaching. Ten analysts were selected two of whom have M.A and the rest B.A. and B.Sc.

For the analysts, training was provided on how to make gender analysis by using handouts prepared by Anbesu (1995) entitled" Mechanism for Gender Analysis" which was prepared for the short-term training on gender and management for women working in WID departments; and other related materials. Reviewed literature in this study was presented by the writer. Exercises on how to conduct the analysis was carried out. Discussions on the formats, categories and other related issues were held. This was conducted for one day.

Each analyst (assistant) collected 50 percent of each of ten textbooks. Each textbook was treated twice. This means each analyst collected data of five textbooks of his own share and five textbooks of another analyst. Each analyst did not know who was checking his share. Each chapter of sampled chapters in each textbook was counted separately. This enabled easy check-ups between analysts agreement. The difference of frequency counts between analysts was resolved by counting again the gender messages in the chapters by the analysts and by reaching into common agreement.

Frequency counting was made based on categories in each grade and subject separately. This was done to enable making correction after the finding. From the results prepared, analysis was done across grade and subject levels. For instance, the grade level analysis may enable to indicate how much gender biased or gender balanced messages are transmitted through textbooks to the children in a year's schooling time.

There are two techniques of gender bias analysis: quantitative and qualitative. Quantitative analysis is "a statistical and comparative evaluation of the number of female and male characteristics featured in titles, texts, illustrations, exercises, etc.". Qualitative analysis is "a descriptive comparison of the character featured in titles texts, illustrations,

exercises, etc. of textbooks and other educational materials (Anbesu, 1995:74). This study is confined to quantitative techniques. Therefore, frequency counts were implemented in analysis of " concordance data" (Carroll and Kowitz, 1994: 79).

In all of the study of this content analysis, data is presented by sex (male and female). In addition guidelines were given on how to count gender-referenced messages. These guidelines are collected from MOE (1989, 11-12) and Florent and associates (1994:114-117). These guidelines were designed for use with analysis formats.

3.5.2. Formats

Koul (1984:414) mentions that recording instrument is imperative in content analysis studies. He adds that formats are used in content analysis for classifying and recording purposes. Thus, formats were prepared to conduct this study for content and illustration.

1. Contents

Format 1 Topics and Sub-topics

The major element under format 1 is topics and sub topics. This major element contains four items. Thus, the analysts were asked to tally and count the numbers of:

- topics and sub-topics with male reference.
- topics and sub-topics with female reference.
- topics and sub-topics with both sexes reference.
- topics and sub-topics with no sex reference.

Format 2. Language

The main element in format 2 is language. There are sub-elements such as: proper names, common nouns, pronouns and verbs. Each sub-element contains three items. Therefore, the analysts were asked to tally and count:

a.	proper names:-		proper male names (Asfaw, kebede, Getahun, etc.)
		-	Proper female names (Almaze, Aster, Debritu, etc.)
		-	unidentified (Alem, Kassu, Sentayhu etc.).
b.	common nouns-		male common nouns (boy, man, brother, etc.)
		-	female common nouns (girls, lady, sister, etc.)
		-	unidentified or neutral (workers citizens, people, etc.).
c.	pronouns	-	female pronouns (she, her, etc.)
		-	male pronouns (he, his, etc.)
		-	unidentified (we, I, they, etc.)
d.	verbs	-	In the usage of Amharic language, Amharic verbs unlike English language have gender reference.
		-	male verbs (BELA, TETA, META, etc.) (he ate. he drank, he came, etc.
		-	female verbs (HADECH, METACH, BELACH) (she went, she came, she ate, etc.)
		-	unidentified or neutral verbs (HADU, METU, BELU) (they went, they came, they ate, etc.)

Format 3 Activities in the Written Content

This format focused on activities for each sex described in the textbooks. The analysts listed all activities for each sex in the texts and tallied the number of times each

activity is mentioned. Unidentified and neutral sex activities were not treated in the study. Activities which are not relevant to the study (like, eating, laughing, etc.)

Format 4. Biographies and Characters

All selected sample chapters of all texts were examined to identify biographies. Then, male and female biographies were tallied and counted.

Similarly, including biographies, fables, stories, etc. major and minor characters were sorted. Tally and counting were made for major characters of females and males as well as minor characters of females and males.

Format 5 Occupations in the Text

This format was prepared for data collectors to list male and female referenced occupations in the textbooks of selected chapters. Occupations were identified by sex (male and female) and were tallied and counted. Occupations with reference to unidentified or neutral sex are not treated in the study.

Format 6. Demeaning Examples

This format was prepared for analysts to identify sex demeaning examples. They were informed to list down the pages of demeaning examples that lower the respect, dignity and social esteem of both sexes (male and female).

2. Illustrations

Format 7. Picture Number Balance

In this format, the element is number balance of human pictures. There are sub-elements. The items which the analysts tallied and counted are:

a pictures with males/s only
pictures with female/s only
pictures with both sexes

b. total number of female pictures
total number of male pictures

Format 8. Picture Activities

Format 8 dealt with activities for each sex depicted in the illustrations. The analysts, through careful observation of pictures listed all activities reflected for each sex and tallied the number of times, counted based on activities. Activities of unidentified pictures are not treated in the study. In addition, activities like eating, smiling. etc. which are not relevant to the study are not treated.

3.5.3. Method of Data Analysis

To find the data of this content analysis study, the analysts tally and counted based on each category, element, sub element and items. After summing up the counted tally marks, percentages were computed in accordance with each category in the format with respect to female and male sexes.

A chi-square (x^2) statistical test is used to check whether there is statistically significant difference between the male and the female genders. To be more specific this statistical test is used for:

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A chi-square (x^2) statistical test is used to check whether there is statistically significant difference between the male and the female genders. To be more specific this statistical test is used for:

- total data of all categories of each subject in each grade level included in the study.
- total data of all categories of total subjects of each grade level included in the study;
- total data of all categories of one subject of whole grade levels included in the study;
- data of each categories of the whole grade levels included in the study.
- total data of the whole subjects and the whole grade levels.

CHAPTER IV

RESULTS AND DISCUSSION

4.1. Results

To examine the portrayal of male and female sexes in primary school textbooks of Amhara Region, content analysis was employed. The analysts (assistants) including the writer analysed 50 percent of each text chapters on the given categories. The elements and sub-elements of categories were counted separately in relation to items. The elements or sub-elements of frequency counts of each category is added and changed into percentage whole numbers. The frequency counts of categories are added and changed into percentage with whole numbers respect to female and male sexes.

In the analysis of each of the categories of each subject, the percentages for the frequencies mainly less than five are exaggerated. For those percentages that have frequency less than ten and whose difference between male and female representation frequency are one and two are taken as balanced though they have big difference in percentage. However, this did not bring change on the total result of statistical test. In the tables total refers to frequencies not to the percents.

Finally, chi-square (x^2) statistical test was used for each subject to check whether there is statistically significant difference between the female and the male genders. The following tables are presented to show frequencies and percentages of each category.

Table 3

Sex Representation of Grade One Subject : Textbooks.

Categories	Amharic				English				Maths				Science				So. Studies				Art				Music			
	M		F		M		F		M		F		M		F		M		F		M		F		M		F	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Topics & sub-topics	-	-	-	-	5	56	4	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	100	-	-
Language	105	76	34	24	68	52	63	48	12	48	13	52	-	-	-	-	3	27	8	73	-	-	-	-	9	100	-	-
Activities in written content	8	73	3	27	-	-	-	-	-	-	-	-	-	-	-	-	8	28	21	72	-	-	-	-	9	56	7	44
Biographies & characters	1	50	1	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	100	-	-
Occupations	2	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	60	2	40	-	-	-	-	4	100	-	-
Picture numbers	14	67	7	33	74	48	79	52	7	37	15	63	4	57	3	43	105	50	103	50	2	67	1	33	24	52	22	48
Picture activities	11	65	6	35	10	45	12	55	2	50	2	50	1	50	1	50	6	67	3	33	3	50	3	50	3	50	3	50
Total	141	73	51	27	157	50	158	50	21	41	30	59	5	56	4	44	125	48	137	52	5	56	4	44	52	62	32	38

Table 3 indicates the representation of female and male sexes of grade one subjects in topics and sub-topics, language, activities in written statements, biographies and characters, picture numbers and picture activities. The subjects analysed in grade one are Amharic, English, maths, science, social studies, arts and music.

As can be seen from the table Amharic does not have gender referenced topics and sub-topics. With respect to language there is big difference of representation between male (seventy-six percent) and female (twenty-four percent). Similarly, regarding activities in the written content more male referenced messages (seventy-three percent) are represented than female sex (twenty seven). Regarding pictures, more pictures and picture activities are represented for male sex than female sex. The gap is large between the two sexes. There is equal representation with respect to biography and character. As to occupation although male sex is represented it may not be fair to consider this as a gap. In general, in grade one textbook of Amharic men/boys are represented seventy-three percent and women/ girls twenty-seven percent. The general result shows that since the computed chi-square value ($x^2 = 21.16$) is more than the critical chi-square value (x^2, 0.05= 3.841) there is statistically significant difference between male and female sex representation.

The English textbook does not have sex referenced messages with respect to activities in the written part, biography and characters, and occupations. Although there are slight differences as related to topics and sub-topics, language. pictures and picture activities the representation of the sexes is almost balanced. The general result shows that since the computed chi-square value ($x^2 = 0$) is less than the critical chi-square value (x^2, 0.05 = 3.841) there is no statistically significant difference between male and female sex representation. In addition fifty percent representation for each (male and female) implies perfectly balanced representation.

The maths text has gender referenced messages only in language, pictures and picture activities. The data indicates almost balanced representation in language and picture activities. But more pictures of women/ girls (sixty-three percent) are drawn than

men/boys pictures (thirty-seven percent). The general result shows that since the calculated chi-square value (x^2 = 3.24) is less than the critical chi-square value (x^2, 0.05 = 3.841), there is no statistically significant difference between female and male sex representation.

The science text reflected gendered messages only in pictures. The number of male and female pictures are fairly balanced (fifty-seven percent and forty-three percent respectively). Picture activities are equally balanced. The general result shows that since the computed chi-square value (x^2 = 1.44) is less than the critical chi-square value (x^2, 0.05 = 3.841), there is no statistically significant difference between female and male sex representation.

The social studies textbook has more female gender messages (seventy-three percent) than male gender (twenty-seven percent) regarding language. The result is also similar with respect to activities in written contents. The riverse is true in picture activities; more male picture activities (sixty-seven percent) are reflected than female picture activities. Whereas male and female picture number is represented equally. Regarding occupations, although the percentage of male and female representation seems to have big gap only one more is added to male sex representation. Hence, it may not be fair to consider them as having big difference. However, the general result shows that since the calculated chi-square value (x^2 = 0.64) is less than the critical chi-square value (x^2, 0.05 = 3.841), there is no statistically significant difference between male and female gender representation.

The art text has male and female gender messages only in pictures. Although the percentage number of male (sixty-seven) and female (thirty-three) seems big difference, only one more picture is represented for male. Picture activities for both genders is represented equally. The total result indicates that the calculated chi-square value (x^2, = 1.44) is less than the critical chi-square value (x^2 , 0.05 = 3.841). Therefore, there is no statistically significant difference between male and female reference information.

In the music text sexes are represented in all categories. In language and occupations women/ girls are not represented at all. Similarly, although they are not represented in topics and sub-topics as well as biography and characters the male representation also is not significant. Large difference is observed in language and occupations. On the other hand, the manifestation of male and female sexes in activities of written content and pictures, activity and picture numbers are somewhat proportional. However, mixed trends are observed, the total result indicates that the calculated chi-square value (x^2, = 5.76) is more than the critical chi-square value (x^2, = 0.05 = 3.841). Hence, there is statistically significant difference between male and female referenced messages.

Table 4

Sex Representation of Grade Two Subjects

Categories	Amharic				English				Maths				Science				Social Studies				Art				Music				Physical Education			
	M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Topics & sub-topics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	100	-	-	-	-	-	-
Language	415	61	261	49	86	54	72	46	72	52	66	48	6	75	2	25	6	55	5	45	3	100	-	-	43	62	26	38	70	69	31	31
Activities in written content	8	73	3	27	-	-	2	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	50	14	50
Biographies & characters	11	79	3	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Occupations	7	64	4	36	-	-	-	-	5	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	100	-	-	1	50	1	50
Picture numbers	9	56	7	44	129	48	140	52	6	75	2	25	26	74	9	26	28	57	21	43	42	60	28	40	23	58	17	42	49	53	43	47
Picture activities	1	100	-	-	26	50	26	50	2	100	-	-	1	33	2	67	8	62	5	38	8	80	2	20	2	100	-	-	45	53	40	47
Total	451	62	278	38	241	50	240	50	85	56	68	44	33	69	15	31	42	58	31	42	53	64	30	36	73	63	43	37	179	58	130	42

Table 4 shows gender representation of grade two subjects in topics and sub-topics, language, activities in statements, biographies and characters, occupations, picture numbers and picture activities. The subjects analysed for grade one are Amharic, English, maths, science, social studies, art, music and physical education.

As shown in table 4, topics and sub-topics of Amharic textbook do not have either female or male gender messages. The table depicts that language, activities in statements biographies and characters, and occupations, have significant difference between female and male sex referring messages. As to picture activities, the male sex representation of percentage (hundred) is exaggerated. The number of representation reads as only one. Hence, it is not fair to conclude as big difference between female and male value. The total result shows that since the calculated-square (x^2, = 5.76) is more than the critical chi-square value (x^2, 0.05 = 3.841), there is statistically significant difference between female and male gender representation.

Table 4 depicts that the English text sex information in language, , activities in statements picture numbers and picture activities. The data shows that in these categories there is fair representation of female and male sexes. Eventhough, the percentage of female representation for activities is exaggerated (hundred percent) the number of representations are only two. Therefore, it may not be fair to consider it as big difference. The cumulative result shows that since the computed chi-square value (x^2 = 0) is less than the critical chi-square value (x^2 ,= 0.05 = 3.841), there is no statistically significant difference between female and male sex representation in English text.

In maths text in occupations and picture numbers, the representation of female and male seem to have difference (more male representation). Language and picture activities seem to have fairly balanced representation, though the percentage (hundred) for picture activities is exaggerated. However, the general result indicates that the calculated chi-square value (x^2 =1.44) is less than the critical chi-square value (x^2 0.05 = 3.841).

Therefore, there is no statistically significant difference between female and male representation in maths text.

As shown from table 4 the science text of grade two has big gap between male and female representation (more to male) in language and picture numbers. With regard to picture activities, although the percentages for male and female (thirty-three and sixty-seven percent respectively) are depicted, the numbers one and two do not have as such big difference. The total result indicates that since the computed chi-square value ($x^2 = 14.44$) is more than the critical chi-square value (x^2, $0.05 = 3.841$), there is statistically significant difference between male and female sex representation in science text.

The social studies textbook seems to have difference of female and male representation with respect to picture activities (thirty-eight and sixty-two percent respectively). On the other hand, language and picture numbers seem fairly balanced. However, the general results indicates that the computed chi-square value ($x^2= 2.56$) is less than the critical chi-square value (x^2 $0.5 = 3.841$). Hence, there is no statistically significant difference between female and male sex representation.

The art text of grade two as shown in table 4 have unfair representation of female and male sexes with respect to language, picture number and picture activities. Similarly, the general results indicate that since the calculated chi-square value ($x^2 = 7.84$) is more than the critical chi-square value (x^2 , $0.05 = 3.841$), there is statistically significant difference between female and male representation in art text.

In the music text more representation seems to be for male gender in language and occupations. Although the representation for male in topics and sub-topics and picture activities is more in number (two each) it may not be fair to consider as a big gap (Although it reads high percentage). The male and female picture representation seems fair. However, the result of music indicates that since the computed chi-square value ($x^2 = 6.76$)

is more than the critical chi-square value (x^2 , 0.05 = 3.841), there is statistically significant difference between female and male sex representation.

In the physical education significantly more male (sixty-nine percent) is represented in language. In the other categories: activities in statements, occupations, picture numbers and picture activities the representation seems fair. In addition, the total result indicates that since the calculated chi-square value (x^2 = 2.56) is less than the critical chi-square value (x^2 , 0.05 = 3.841), there is no statistically significant difference between female and male sex representation.

Table 5
Sex Representation of Grade Three Subjects

Categories	Amharic				English				Maths				Env.Sc.				Aesthetic & Physical Education			
	M		F		M		F		M		F		M		F		M		F	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Topics & sub-topics	-	-	2	100	1	25	3	75	-	-	-	-	-	-	-	-	-	-	-	-
Language	65	41	92	39	261	49	274	51	73	46	86	54	9	82	2	8	2	100	-	-
Activities in written content	2	100	-	-	2	22	7	78	20	48	22	52	1	50	1	50	8	53	7	47
Biographies & characters	5	50	5	50	2	50	2	50	-	-	-	-	-	-	-	-	-	-	-	-
Occupations	-	-	2	100	13	54	11	46	14	100	-	-	1	100	-	-	3	100	-	-
Picture numbers	2	67	1	33	68	48	75	52	-	-	-	-	71	61	46	39	11	69	5	31
Picture activities	1	50	1	50	13	29	32	71	-	-	-	-	16	62	10	38	10	71	4	29
Total	75	42	103	58	360	47	404	53	107	50	108	50	98	62	59	38	34	68	16	32

Table 5 indicates sex representation of grade three subjects in topics and sub-topics, language, activities in statements biographies and characters, occupations picture numbers and picture activities. The textbooks analysed for grade three are; Amharic, English, maths environmental science and aesthetic and physical educ. Among these, the last two are integrated textbooks.

As can be seen from table 5 Amharic textbook, has sex representation in all the categories. The percentages for topics and sub-topics, occupations and activities in statements are exaggerated. The numbers are two for each. Hence it may not be fare to take as they have significant difference. The rest categories do not also have significant differences The total result shows that the computed chi-square value (x^2 = 2.56) is less than the critical chi-square value (x^2 , 0.05 = 3.841). Hence there is no statistically significant difference between female and male representation in Amharic textbook.

The data in table 5 shows that the English text has more higher representation in activities in written content (seventy-eight percent) and picture activities (seventy-one percent) for female sex than male sex. Although there are slight differences as related to topics and sub-topics occupations and picture numbers all do not have significant differences. Therefore, they are fairly balanced. Biographic and characters are equally balanced for both sexes. Eventhough there are differences of representation, the total result shows that the calculated chi-square value (x^2 = 0.36) is less than the critical chi-square value (x^2 , 0.05 = 3.841). Thus, there is no statistically significant difference between female and male representation in English text.

The maths data in table 5 shows that only males (hundred percent) are represented in occupations whereas women/girls are not depicted. As related to language and activities in statements men/ boys and women/ girls are fairly, balanced though women/ girls are a little more.. The total result of maths show that since the computed chi-square value (x^2 = 0), is less than the critical chi-square value (x^2 , 0.05 = 3.841), there is no statistically significant difference between female and male sex representation.

The environmental science data in table 5 indicates that there are more men/boys representations in language (eighty-two percent) picture activities (sixty two percent) and picture numbers (sixty-one percent). Activities in statements and occupations show fairly balanced treatment. The general result indicates that since the calculated chi-square value (x^2 = 5.76), is more than the critical chi-square value (x^2 , 0.05 = 3.841) there is statistically significant difference between men/boys and women/girls representation of environmental science textbook which is one of the integrated textbooks.

In table 5 the data for aesthetics and physical education depicts that the representation of men/boys is more higher in occupations (hundred percent), picture numbers (sixty-nine percent), and picture activities (seventy-one percent). Similarly, the total result indicates that the computed chi-square value (x^2 = 12.96), is more than the critical chi-square value (x^2 , 0.05 = 3.841). Therefore, there is statistically significant difference between the representation of women/ girls and men/boys in aesthetic and physical education text.

The environmental science data in table 5 indicates that there are more men/boys representations in language (eighty-two percent) picture activities (sixty two percent) and picture numbers (sixty-one percent). Activities in statements and occupations show fairly balanced treatment. The general result indicates that since the calculated chi-square value (x^2 = 5.76), is more than the critical chi-square value (x^2 , 0.05 = 3.841) there is statistically significant difference between men/boys and women/girls representation of environmental science textbook which is one of the integrated textbooks.

In table 5 the data for aesthetics and physical education depicts that the representation of men/boys is more higher in occupations (hundred percent), picture numbers (sixty-nine percent), and picture activities (seventy-one percent). Similarly, the total result indicates that the computed chi-square value (x^2 = 12.96), is more than the critical chi-square value (x^2 , 0.05 = 3.841). Therefore, there is statistically significant difference between the representation of women/ girls and men/boys in aesthetic and physical education text.

Table 6

Gender Representation of Grade Five Subject Texts

Categories	Amharic				English				Maths				Science				Social Studies				Art				Music				Physical Education			
	M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Topics & sub-topics	2	100	-	-	-	-	1	100	-	-	-	-	-	-	-	-	8	89	1	100	-	-	-	-	-	-	-	-	2	100	-	-
Language	283	94	21	6	111	51	106	49	73	87	11	13	10	100	-	-	116	100	-	-	14	100	-	-	2	25	6	75	78	100	-	-
Activities in written content	3	60	2	40	3	30	7	70	11	79	3	21	-	-	-	-	8	100	-	-	2	100	-	-	-	-	-	-	6	75	2	25
Biographies & characters	6	86	1	100	-	-	-	-	-	-	-	-	-	-	-	-	26	96	1	4	-	-	-	-	-	-	-	-	-	-	-	-
Occupations	14	78	4	22	3	75	1	25	7	100	-	-	-	-	-	-	36	95	2	5	-	-	-	-	-	-	-	-	-	-	-	-
Picture numbers	-	-	-	-	66	57	50	43	-	-	-	-	32	91	3	9	-	-	-	-	3	43	4	57	-	-	-	-	63	88	9	12
Picture activities	-	-	-	-	7	44	9	56	-	-	-	-	2	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	90	7	10
Total	307	92	28	8	190	52	174	48	91	87	14	13	44	94	3	6	194	98	4	2	19	83	4	17	2	25	6	75	210	92	18	8

Table 6 depicts sex representation of grade five textbooks in topic-and sub-topics language, activities in statements, biographies and characters, occupations, picture numbers and picture activities. The subjects included in the analysis are: Amharic, English, maths, science, social studies art, music and physical education.

The data for Amharic in table 6 shows that more men/ boys are represented in language (ninety-four percent), biographies and characters (eighty-six percent) & occupations (seventy-eight percent). These all indicate big gap between male and female representation. The other categories such as seem fairly balanced though there are slight variations. The general result indicates that since the computed chi-square value (x^2 = 70.56), is more than the critical chi-square value (x^2 , 0.05 = 3.841), there is statistically significant difference between female and male sex representation of Amharic subject.

The data for English in table 6 indicates that more women/ girls (seventy percent) are represented in activities in statements than men/boys. In occupations although the percent of male representation is high (seventy-five percent) and that of female representation is less (twenty-five percent) the numbers are different three for male and one for female. Hence, it may not be fair to consider as significant difference. In the other categories such as topics and sub-topics, language, occupations, pictures number and pictures actives have fair representation for male and female sexes. However, the total result indicates that the calculated chi-square value (x^2 = 0.16), is less than the critical chi-square value (x^2 , 0.05 = 3.841). Therefore, there is no statistically significant difference between female and male sex representation in English text.

In table 6, the data for maths indicate that there are more higher representations for male gender in language (eighty-seven percent), activities in statements (seventy-nine percent) & occupations (hundred percent) than female gender. In this case all gendered categories are more male referenced. Similarly, the general result indicates that the computed chi- square value (x^2 = 54.76), is more than the critical chi-square value (x^2 ,

0.05 = 3.841). Hence, there is statistically significant difference between female and male sex representation in maths textbook.

As indicated in table 6, the science data shows that the male referenced messages are more higher in language (hundred percent) & pictures (ninety-one percent). Although there are two more representations for male sex, in picture activities, the proportion does not have as such big difference. The general result shows that since the computed chi-square value (x^2 = 77.44), is less more than critical chi-square value (x^2 , 0.05 = 3.841), there is statistically significant difference between male and female sex representation in science textbook.

The social studies text has more male sex representations in the categories in which sex referenced messages are depicted. In topics and sub-topics male sex referenced messages represent eighty-nine percent, in language hundred percent in biographies and characters ninety-six percent and in occupations ninety-five percent. On the other hand, the representations of female sex are small. Similarly, the general result shows that the calculated chi-square value (x^2 = 92.16) is more than the critical chi-square value (x^2 , 0.05 = 3.841). Hence, there is statistically significant difference between male and female sex representation in social studies textbook.

The Art text as depicted in table 6 show more higher male sex representation (hundred percent) in language. The reflection of male and female sexes in activities in the written content and picture numbers is not as such with big difference. The general result of art indicates that since the calculated chi-square value (x^2 = 43.56) is more than the critical chi-square value (x^2 , 0.05 = 3.841), there is statistically significant difference between male and female sex representation.

In the music textbook unbalanced sex treatment is manifested only in language. Even in language sex reference messages are few. In general, women/ girls are reflected more than men/ boys i.e. seventy five percent. Similarly. the total result of percentage of

music indicate that since the calculated chi-square value ($x^2 = 25$) is more than the critical chi-square value (x^2 , 0.05 = 3.841). there is statistically significant difference between male and female sex representation. If one examines the number evidences six for female and two for male sex, they do not show big variation Thus, it has to be seen cautiously. The difference of numbers between female and male is only four. However since the statistical test is applied it is fair to conclude as if they have significant difference between male and female sex representation.

The data of physical education in table 6 indicates that the portrayal of men/boys is more higher in language (hundred percent) activities in statements (seventy-five percent), picture numbers (eighty-eight percent) and picture activities (ninety-percent). All these indicate big gap between male and female gender representations. Topics and sub-topics show slight deviation toward male sex. Hence, it may be fair to consider as fairly balanced. Similar to most categories, the total result shows that the calculated chi-square value ($x^2 =$ 70.56) is more than the critical chi-square value (x^2 , 0.05 = 3.841). Therefore there is statistically significant difference between male and female gender representation of physical education textbook.

Table 7

Gender Representation of Grade Six Textbooks

Categories	Amharic				English				Maths				Science				Social Studies				Art				Music				Physical Education			
	M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Topics & sub-topics	1	33	2	67	4	44	5	56	-	-	-	-	-	-	-	-	3	75	1	25	-	-	-	-	12	100	-	-	-	-	-	-
Language	205	60	138	40	193	51	183	49	52	60	35	40	4	67	2	33	33	63	19	37	7	50	7	50	359	66	181	34	24	63	14	37
Activities in written content	10	53	9	47	-	-	-	-	-	-	-	-	5	83	1	17	9	75	3	25	-	-	-	-	26	100	-	-	3	00	-	-
Biographies & characters	6	60	4	40	7	54	6	46	-	-	-	-	4	100	-	-	12	100	-	-	26	100	-	-	-	-	-	-	-	-	-	-
Occupations	13	57	10	43	7	70	3	30	3	100	-	-	-	-	-	-	5	45	6	55	-	-	-	-	32	91	3	9	-	-	-	-
Picture numbers	5	83	1	17	48	59	34	41	6	33	12	67	7	70	3	30	12	67	6	33	18	51	17	49	32	86	5	14	26	70	11	30
Picture activities	2	67	1	33	11	48	12	52	-	-	-	-	9	75	3	25	4	67	2	33	15	70	11	30	17	68	8	32	26	70	11	30
Total	242	59	165	41	270	53	243	47	61	56	47	44	29	76	9	24	78	68	37	32	66	65	35	35	478	71	197	29	79	69	36	31

Table 7 shows gender representation of grade six subjects in topic and sub-topics, language, activities in written contents, biographies and characters, occupations, picture numbers, and picture activities. The subjects which are being provided in grade six are: Amharic, English, maths, science, social studies, art, music and physical education. All these textbooks are analysed in this part of the paper.

As can be seen from the table, Amharic textbook has more male gender representation as compared to female sex representation in language (sixty percent) biographies and characters (sixty percent) and picture numbers (eighty-three percent). These percentages indicate significant difference. In topics and sub topics, occupations, activities in statements and picture activities sex representation seems fairly balanced. The total category result of Amharic text representation indicates that the computed chi-square value ($x^2 = 3.24$) is less than the critical chi-square value (x^2 , 0.05 = 3.841). Hence, this shows that there is no statistically significant difference between male and female gender representation in the text.

In table 7, the data of English textbook indicates that only in occupations there is significant difference of male and female sex representation (seventy and thirty percent respectively). The other categories such as: topics and sub-topics, language, biographies and characters, picture numbers and picture activities seem not having big gap between men/boys and women/girls representation. The total result of English indicates that the computed chi-square value ($x^2 = 0.36$) is less than the critical chi-square value (x^2 , 0.05 = 3.841). Hence based on this result, there is no statistically significant difference between male and female sex representation.

The data of maths in table 7 shows more men/boys are depicted in language (sixty-percent) and occupations (hundred percent but three times in numbers). To the contrary sixty-seven percent is represented for female sex in picture numbers. However, such variations are shown, the general result of all categories indicate that the calculated chi-square value ($x^2 = 1.44$) is less than the critical chi-square value (x^2 0.05 = 3.841). This

shows that there is no statistically significant difference between male and female sex representation in the maths textbook.

The science data in table 7 shows that there are not as such many gender referenced messages in the categories. In those messages more are represented to male sex; those are: activities in statements (eighty-three percent), biographies and characters (hundred percent), picture numbers (seventy percent) and picture activities (seventy-five percent). Similarly, the computed chi-square value ($x^2 = 27.04$) is more than the critical chi-square value (x^2, 0.05 = 3.841). This shows that there is statistically significant difference between male and female sex representation in science text.

In table 7 the data for social studies indicate that there are more male gender representation in language (sixty-three percent), activities in statements (seventy-five percent), biographies and characters (hundred percent) & picture numbers (sixty-seven percent). If the numbers of representations are considered (the percentages excluded), categories like: topics and sub-topics, occupations and picture activities are fairly balanced. The general result shows that since the calculated chi-square value ($x^2 = 12.96$) is more than the critical chi-square value (x^2, 0.05 = 3.841), there is statistically significant difference between male and female representation in social studies text.

The data for the art textbook shows that in biographies and characters, and picture activities more boys/men are represented (hundred percent and seventy percent respectively) than women/girls. This indicates large gap. Language and picture numbers have almost proportional representation. The total result of all categories of art text indicate that the calculated chi-square value ($x^2 = 9$) is higher than the critical chi-square value (x^2 ,0.05 =3.841). Hence, there is statistically significant difference between women/girls and men / boys representation.

In table 7 the data for music textbook show that there are significant differences of representation of male and female sexes. Boys/ men have more higher representation rate

in topics and sub-topics (hundred percent), language (sixty-six percent), in activities in statements (hundred percent), occupations (ninety-one percent), picture numbers (eighty-six percent) and picture activities (sixty-eight percent). All categories tend toward male sex. Similarly, the cumulative result indicates that since the computed chi-square value (x^2 = 17.64) is more than the critical chi-square value (x^2 ,0.05 =3.841), there is statistically significant difference between women/girls and men/boys representation in music subject.

Similar to music, the data of physical education show that all sex-referenced categories show more higher representation of male sex. This reflection is higher in language (sixty-three percent), activities in statements (hundred percent), picture numbers (seventy-percent) and picture activities (seventy percent). Similarly, the general result shows that since the calculated chi-square value (x^2 = 14.44) is higher than the critical chi-square value (x^2 , 0.05 = 3.841), there is statistically significant difference between male and female gender representation in physical education textbook.

Table 8

Sex Representation of Grade Seven Subject Textbooks

Categories	English				Physics				Chemistry				Biology				Social Studies				Physical education			
	M		F		M		F		M		F		M		F		M		F		M		F	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Topics & sub-topics	-	-	-	-	-	-	-	-	1	100	-	-	-	-	-	-	6	100	-	-	-	-	-	-
Language	115	62	70	38	27	77	8	23	50	96	2	4	14	100	-	-	5440	100	-	-	54	95	3	5
Activities in written content	9	56	7	44	-	-	-	-	2	100	-	-	10	50	10	50	-	-	-	-	16	59	11	41
Biographies and characters	11	65	6	35	-	-	-	-	-	-	-	-	2	100	-	-	37	100	-	-	6	75	2	25
Occupations	7	64	4	36	-	-	-	-	15	100	-	-	5	63	3	37	33	100	-	-	-	-	-	-
Picture numbers	37	49	38	51	24	77	7	23	5	100	-	-	20	67	10	33	4	57	3	43	62	57	47	43
Picture activities	3	60	2	40	7	88	1	12	-	-	-	-	7	64	4	36	3	50	3	50	16	59	11	41
Total	182	59	127	41	58	78	16	22	73	97	2	3	58	68	27	32	5523	100	6	-	154	68	74	32

Table 8 shows sex representation of grade seven textbooks in topics and sub-topics, language, activities in written content, biographies and characters, occupations, picture numbers and picture activities. The texts included English, physics, chemistry, biology, social studies and physical education. The new Amharic and maths texts were not found in schools for analysis.

The data for English text in table 8 shows that more men/boys are depicted in language (sixty-two percent), biographies and characters (sixty-five percent) and occupation (sixty-four percent), and picture activities (sixty percent). In these categories there are significant variations in the representations. In the categories like: activities in statements and picture numbers seem having fairly balanced representations. However, the total result shows that since the computed chi-square value (x^2,= 3.24) is less than the critical chi-square value (x^2, 0.05 = 3.841), there is no statistically significant difference between male and female gender representation.

In table 8, the data for physics shows that in all the categories where gender referenced messages are reflected, all show men/ boys are portrayed more than girls/ women are portrayed. The share of male sex representation in language and picture numbers is seventy-seven percent each and picture activities eighty-eight percent. The total result shows that since the calculated chi-square value (x^2 = 31.36) is more than the critical chi-square value (x^2, 0.05 = 3.84) there is statistically significant difference between male and female gender representation.

As shown in table 8 the data for chemistry shows that except in language (four percent) in the rest where sex messages are reflected, women /girls are ignored. Male sex is represented much more in language (ninety-six percent), occupations (hundred percent) and picture number (hundred percent). The other categories do not have as such big difference. The general result shows that since the computed chi-square value (x^2 = 88.36) is more than the critical chi-square value (x^2, 0.05 = 3.841), there is statistically significant difference between male and female gender representation.

The data for biology in table 8 shows that more men/boys are portrayed in language (hundred percent), pictures (sixty-seven percent) and picture activities (sixty-four percent). Eventhough, the percentage of male representation in biographies and characters (hundred percent) and occupations (sixty-three percent) are very high, the numbers: two for male in biographies and character and five for male and three for female in occupations indicate there is not as such big gap. The total result of biology text shows that since the computed chi-square value (x^2, 12.96) is more than the critical chi-square value (x^2, 0.05 = 3.841), there is statistically significant difference between male and female sex representation.

As it is depicted in table 8, the data for social studies indicate that men/boys are portrayed in topics and sub-topics (hundred percent), language (hundred percent), biographies and characters (hundred percent) and occupations (hundred percent). In the above mentioned categories women/girls are completely excluded. Only few women/girls are depicted in pictures and picture activities (three each). The general result shows; that since the calculated chi-square value (x^2= =100) is more than the critical chi-square value (x^2, 0.05 = 3.841), there is statistically very high significant difference between the representation of women/girls and men/boys in social studies text of grade seven.

The physical education text data in table 8 shows that more male/ boys are depicted in language (ninety five percent), and biographies and characters (seventy-five percent). The other categories: activities in statements (fifty-seven percent)., picture numbers (fifty-nine percent) seem to have more male representation. But these percentages of male and female representation do not have significant difference. Hence, it may be better to conclude as balanced representation. However, the cumulative result indicates that the calculated chi-square value (x^2 = 12.96) is more than the critical chi-square value (x^2, 0.05 = 3.841). Therefore, this indicates that there is statistically significant difference between men/boys and women/ female representation.

Table 9

Gender Representation of Grade One, Two, Three, Five, Six & Seven Textbooks.

Categories	Grade One				Grade Two				Grade Three				Grade Five				Grade Six				Grade Seven				Total			
	M		F		M		F		M		F		M		F		M		F		M		F		M		F	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Topics & sub-topics	6	60	4	40	2	67	1	33	1	17	5	83	12	86	2	14	20	71	8	29	7	100	-	-	48	71	20	29
Language	197	63	118	37	701	60	463	40	410	47	454	53	686	83	144	17	877	60	579	40	5700	99	83	1	8571	82	1841	18
Activities in written content	25	45	31	55	22	51	21	49	33	47	37	53	33	70	14	30	53	80	13	20	37	57	28	43	203	59	144	41
Biographies & characters	3	75	1	25	11	79	3	21	7	50	7	50	32	94	2	6	55	85	10	15	56	88	8	12	164	84	31	16
Occupations	9	81	2	19	16	76	5	24	31	70	13	30	60	90	7	10	60	73	22	27	60	90	7	10	236	81	56	19
Picture numbers	231	50	231	50	312	54	267	46	152	54	127	46	164	71	66	29	154	63	89	37	152	59	105	41	1165	57	885	43
Picture activities	35	55	29	45	93	55	75	45	40	46	47	54	70	81	16	19	84	64	48	36	36	63	21	37	358	60	236	40
Total	506	55	416	45	1157	58	835	42	674	49	690	51	1057	81	251	19	13033	63	769	37	6048	96	252	4	10745	77	3213	23

Table 9 shows total sex presentation of grade one (seven textbooks), grade two (eight textbooks), grade three (five textbooks), grade five (eight textbooks) grade six (eight textbooks) & grade seven (six textbooks); and cumulative sex representation of all grade levels and all textbooks in topics and sub-topics, language, activities in statements, biographies and characters, occupations, picture numbers and picture activities.

As can be seen from table 9 the data of grade one textbooks indicate that the portrayal of men/boys is higher in language (sixty-three percent) and occupations (eighty-one percent) than women/girls. The representation of male (sixty percent) and female (forty percent) in topics and sub-topics seem to have big difference. But when numbers (six for male and four for females) are considered there is no big difference. Thus, it may be safe to take them as fairly balanced. This is also true with biographies and characters since the difference of the two sexes is only two. The other categories activities in statements, picture numbers and picture activities are fairly balanced. The total result of grade one textbooks show that men/boys are portrayed fifty-five percent and women/girls forty-five percent For this result the calculated chi-square value ($x^2 = 1.0$) is less than the critical chi-square value (x^2 , $0.05 = 3.841$). Hence, there is no statistically significant difference between male and female sex representation.

In table 9 the data for grade two texts show that more male sex referenced messages are reflected in language (sixty percent), biographies and characters (seventy-nine percent) and occupations (seventy-six percent) than female sex referenced. The rest categories seem to have fairly balanced representations, though they have slight difference. The general result of grade two indicates that men/boys are reflected fifty-eight percent and women/girls forty-two percent. For this cumulative data the computed chi-square value ($x^2 = 2.56$) is less than the critical chi-square value (x^2 , $0.05 = 3.841$). Therefore, there is no statistically significant difference between men/boys and women/girls representation.

The data for grade three in table 9 shows that only in topics and sub-topics and occupations there are big gap between male and female sex representation (seventy percent

for male and thirty percent for female, in occupations, and to the contrary seventeen percent for male and eighty-three percent for female in topics and sub-topics). The rest of the categories such as language, activities in statements, biographies and characters, picture numbers and picture activities did not show big difference. The general result of grade three indicates that women/girls are reflected fifty-one percent in the textbooks. In addition, since the calculated chi-square value ($x^2 = 0.04$) is less than the critical chi-square value (x^2 , 0.05 = 3.841), there is no statistically significant difference between female and male sex reflection.

As indicated in table 9 the data for grade five texts show that men/boys are reflected more in all the categories than women/girls are reflected. The highest representation is ninety-four percent in biographies and characters. The share of all categories show big gap representation of female and male sexes. Out of the total result of all categories women/girls share only nineteen percent. At the same time the calculated chi-square value ($x^2 = 38.44$) for the total result is more than the critical value (x^2 , 0.05 = 3.841). This indicates that there is statistically significant difference between women/girls and men/boys representation.

As indicated in table 9 grade six textbooks portray more male/boys than they do women/girls in all the categories. The highest for men/boys (eighty-five percent) and the least for women/girls (fifteen percent) are recorded in biographies and characters. In all categories women/girls are depicted only thirty-seven percent. For this total result the computed chi-square value ($x^2 = 6.76$) is more than the critical value (x^2 , 0.05 = 3.841). This shows that there is statistically significant difference between female and male sex representation.

Grade seven textbooks portray more male/boys in topics and sub-topics (hundred percent), language (ninety-nine percent), biographies and characters (eighty-eight percent), occupations (ninety percent) and picture activities (sixty-three percent) than they do women/girls. The rest of the categories seem that they do not have significant variations.

In the sum total of all categories the representations have very large gap. Women/girls are depicted only four percent while men/boys ninety-six percent. The calculated result for this indicates that the chi-square value ($x^2 = 84.64$) is more than the critical chi-square value (x^2 , 0.05 = 3.841). This indicates that there is statistically very high significant difference between women/girls and men/boys portrayal in grade seven textbooks.

As shown in table 9, the total data of topics and sub-topics of all textbooks of all grade levels indicate that the representation of men/boys is more (seventy-one percent) than that of women/girls. Since the calculated chi-square value (x^2 ,= 17.64) is more than the critical chi-square value (x^2 ,0.05 = 3.841), there is statistically significant difference between female and male sex representation in topics and sub topics. As related to language, biographies and characters, occupations and picture activities more male sex representation is observed (eighty-two percent for language, eighty-four percent for biographies and characters, eighty-one percent for occupations and sixty-percent for picture activities. The calculated chi-square value for language is $x^2 = 40.96$; for biographies and characters $x^2 = 46.24$; occupations is $x^2 = 38.44$; and picture activities is $x^2 = 4$. All these results are more than the critical chi-square value (x^2 , 0.05 = 3.841). This indicates that all categories mentioned above have statistically significant difference between female and male sex representation. The remaining categories also have more male sex representation (fifty-nine percent for activities in statements and fifty seven percent for picture numbers). the computed chi-square value for activities in statements and picture activities are $x^2 = 3.24$ and , $x^2 = 1.96$ respectively. These results indicate that they are less than the critical chi-square value , (x^2 , 0.05 = 3.841). Therefore, there is no statistically significant difference between women/girls and men/boys representation of all texts of all grade levels included in the study.

The cumulative result of all textbooks of all grade levels of all categories treated in this study indicates that men/boys are represented seventy-seven percent and women/girls are represented only twenty-three percent. This general cumulative result shows that since the calculated chi-square value ($x^2 = 29.16$) is more than the critical chi-square value (x^2 ,

0.05 = 3.841), there is statistically significant difference between women/girls and men/boys portrayal in all textbooks of all grade levels of all categories included in this study.

Table 10

Subject Level Sex Representation

Categories	Amharic				English				Maths				Science				Social Studies				Art				Music				Physical Education			
	M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Topics & sub-topics	3	43	4	57	10	43	13	57	-	-	-	-	-	-	-	-	17	89	2	11	-	-	-	-	15	100	-	-	2	67	1	33
Language	1072	66	546	34	834	52	768	48	282	57	211	43	20	83	4	17	5598	99	32	1	24	77	7	23	413	66	213	34	226	82	48	18
Activities in written content	31	65	17	35	14	38	23	62	31	55	25	45	5	63	3	37	25	51	24	49	2	100	-	-	35	83	7	17	39	59	27	41
Biographies & characters	29	69	14	33	20	59	14	41	-	-	-	-	4	100	-	-	75	99	1	1	26	100	-	-	2	100	-	-	6	75	2	25
Occupations	36	64	20	36	30	61	19	39	29	100	-	-	-	-	-	-	77	89	10	11	-	-	-	-	39	93	3	7	1	50	1	50
Picture numbers	30	65	16	35	422	50	416	50	19	40	29	60	69	79	18	21	149	53	133	47	66	56	51	44	79	64	44	36	200	65	110	35
Picture activities	15	65	8	35	70	43	93	57	4	67	2	33	13	68	6	32	21	62	13	38	25	63	15	37	22	67	11	33	148	68	69	32
Total	1216	66	625	34	1406	51	1300	499	365	58	267	42	111	78	31	22	5962	96	215	4	143	66	73	34	605	69	278	31	622	71	258	29

Table 10 shows sex representation of each subject at all grade levels in topics and sub-topics, language, activities in statements, biographies and characters, occupations, picture numbers and picture activities. The subjects at all primary levels included in this study are: Amharic, English, maths, science, social studies, art, music, physical education, physics, chemistry, biology, environmental science and aesthetic and physical education. The last five texts are not delt here. Because they are treated in the other pages.

As indicated in table 10 the Amharic texts of all grade levels indicate that except topics-and sub-topics, in the rest of all categories male gender is represented more than female sex. Similarly, the total result shows that since the calculated chi-square value (x^2 = 10.24) is more than the critical chi-square value (x^2 , 0.05 = 3.841), there is statistically significant difference between female and male gender portrayal.

The English texts of all grade levels in table 10 indicate that big difference of the two sex representations is observed in activities in statements and occupations. Female gender representation is more in activities in statements (sixty-two percent) and contrary to this male gender is more represented in occupations(sixty-one percent). The rest of the categories do not have significant difference. The general result shows that since the calculated chi-square value (x^2 = 0.04) is less than the critical chi-square value (x^2 , 0.05 = 3.841), there is no statistically significant difference between the two sexes representation.

The maths texts for all grade levels show that more representation of men/boys is depicted in occupations (hundred percent) and more portrayal of women/girls in picture numbers. The rest do not show big differences. The total result indicates that since the calculated chi-square value (x^2 = 2.56), is less than the critical chi-square value (x^2, 0.05 = 3.841), there is no statistically significant difference between the two sexes representation.

The science texts in table 10 indicate that more portrayal of male sex is manifested in language (eighty-three percent), biographies and characters (hundred), picture numbers

(seventy-nine percent) and picture activities(sixty-eight percent). Activities in statement do not show as such considerable difference. The calculated chi-square value (x^2 , = 31.36) is higher than the critical chi- square value (x^2 ,0.05 = 3.841). Therefore, there is statistically significant difference between female and male gender portrayal.

The texts of social studies at all grade levels as indicated in table 10 show that except activities in statements and picture numbers, the rest of the categories have more higher male sex messages than female sex messages. Similar to this, the total result indicates there is statistically big significant difference between portrayal of men/boys and women/girls. Because the calculated value (x^2 =84.64) is more than the critical value (x^2 , 0.05 = 3.841).

In table 10 the art texts data indicate that in language, biographies and characters and picture activities men/boys are depicted more (seventy-seven, hundred, and sixty-percent respectively) than women/girls. The data for activities in statements and picture numbers do not seem to have considerable differences. The general calculated chi-square value (x^2 , = 10.24) of all texts indicate that it is more than the critical chi-square value (x^2 , 0.05 = 3.841). Hence, there is statistically significant difference between female and male gender portrayal.

For music texts of all grade levels data in table 10 indicates that male gender is represented more in all categories than female sex representation similarly, the total result shows that since the calculated chi-square value (x^2 = 14.44) is more than the critical chi-square value (x^2 , 0.05 =3.841), there is statistically significant difference between female and male gender portrayal.

In table 10, the data of physical education texts indicate that more representation of male sex is observed in language (eighty-two percent), biographies and characters (seventy-five percent), picture numbers and picture activities sixty-five and sixty-eight percent. The rest of the categories do not seem to have big gap between the two sex portrayal. The

general result shows that since the calculated chi-square value ($x^2 = 17.64$) is more than the critical chi-square value (x^2, 0.05 = 3.841), there is statistically significant difference between female and male gender portrayal.

Table 11

Gender Representation of Portrayed Activities in Written contents of Textbooks

No	Activities	Male		Female	
		f	%	f	%
1	Playing different musical instruments	10	83	2	17
2	Preparing food	7	29	17	71
3	Cleaning surrounding from pollution	5	83	1	17
4	Ploughing by oxen	14	100	-	-
5	Shopping	10	28	26	72
6	Cultivating different crops	3	75	1	25
7	House sanitation activity	2	29	5	71
8	Taking care of children	-	-	2	100
9	Carrying different goods	1	100	-	-
10	Singing songs	24	75	8	25
11	Playing games with ball	13	93	1	7
12	Drawing pictures	3	75	1	25
13	Fetching water	-	-	4	10
14	Selling different goods	5	36	11	64
15	Fishing	2	100	-	-
16	Playing games (without ball)	15	52	14	48
17	Learning in class rooms	22	69	10	31
18	Athletic activity (jumping, throwing and running)	8	53	7	47
19	Industrial activities	1	50	1	50
20	Dancing	-	-	4	100
21	Gardening	-	-	2	100
22	Cloth washing	-	-	2	100
23	Taking care of cattle	1	100	-	-
24	Horse riding	1	100	-	-
25	Poultry activity	1	100	-	-
26	Praying	1	100	-	-
27	Lifting weight	5	83	1	17
28	Preparing instruments	1	50	1	50
29	Digging ground	6	86	1	14
30	Teaching	4	100	-	-
31	Doing different physical exercise	18	64	10	36
32	Driving car/lorry	1	100	-	-
33	Conducting research	2	100	-	-
34	Architect activities	2	100	-	-
35	Ironing shirts	1	100	-	-
36	Conducting experiment	3	50	3	50
37	Data collection	5	50	5	50
38	Going to field trip	2	50	2	50
39	'Tej' and 'Tela' preparation	-	-	2	100
40	planting trees	4	100	-	-
Total		203	59	144	41

Table 11

Gender Representation of Portrayed Activities in Written contents of Textbooks

No	Activities	Male		Female	
		f	%	f	%
1	Playing different musical instruments	10	83	2	17
2	Preparing food	7	29	17	71
3	Cleaning surrounding from pollution	5	83	1	17
4	Ploughing by oxen	14	100	-	-
5	Shopping	10	28	26	72
6	Cultivating different crops	3	75	1	25
7	House sanitation activity	2	29	5	71
8	Taking care of children	-	-	2	100
9	Carrying different goods	1	100	-	-
10	Singing songs	24	75	8	25
11	Playing games with ball	13	93	1	7
12	Drawing pictures	3	75	1	25
13	Fetching water	-	-	4	10
14	Selling different goods	5	36	11	64
15	Fishing	2	100	-	-
16	Playing games (without ball)	15	52	14	48
17	Learning in class rooms	22	69	10	31
18	Athletic activity (jumping, throwing and running)	8	53	7	47
19	Industrial activities	1	50	1	50
20	Dancing	-	-	4	100
21	Gardening	-	-	2	100
22	Cloth washing	-	-	2	100
23	Taking care of cattle	1	100	-	-
24	Horse riding	1	100	-	-
25	Poultry activity	1	100	-	-
26	Praying	1	100	-	-
27	Lifting weight	5	83	1	17
28	Preparing instruments	1	50	1	50
29	Digging ground	6	86	1	14
30	Teaching	4	100	-	-
31	Doing different physical exercise	18	64	10	36
32	Driving car/lorry	1	100	-	-
33	Conducting research	2	100	-	-
34	Architect activities	2	100	-	-
35	Ironing shirts	1	100	-	-
36	Conducting experiment	3	50	3	50
37	Data collection	5	50	5	50
38	Going to field trip	2	50	2	50
39	'Tej' and 'Tela' preparation	-	-	2	100
40	planting trees	4	100	-	-
Total		203	59	144	41

Table 11 shows sex representation of activities mentioned in written part of contents of textbooks included in the study. This data do not include activities in pictures. All the activities mentioned in the texts are not written separately; they are grouped under common activities. For instance, playing 'Kirar', 'Masinko', violin, 'washint', etc. are grouped under playing different musical instruments.

The total data in table 11 indicates that fifty-nine percent of male sex is portrayed in forty different activities mentioned in the written content of textbooks. The calculated chi-square value ($x^2 = 3.24$) is less than the critical chi-square value (x^2 , $0.05 = 3.841$). Thus, there is no statistically significant difference between female and male sex representation. However, this is the total representation, women/girls are completely excluded from thirteen activities among the forty grouped activities. Among these activities in which women girls are segregated, certain are related to backward traditional outlook of the community. For example those indicted in the table like ploughing by oxen, fishing, driving car/lorry, conducting research and architect activities are traditionally restricted to men/boys.

Similarly, men/boys are rejected in certain activities in which the society (traditionally) assigned to be performed by only women/girls. These are: taking care of children, fetching water, cloth washing, and 'Tej' and Tela' preparation. Although the two sexes are assigned in certain activities the rate of representations has big difference. The activities are: food preparation (only twenty-nine percent for male), shopping (only twenty-eight percent for male), house sanitation (only twenty-nine percent for male) playing games with ball (only seven percent for female) learning in class rooms (thirty-one percent for female), lifting weight (only seventeen percent for female), digging ground (only fourteen percent for female) and doing different physical exercises (only thirty-six percent for female). All these uneven (unbalanced) representations seem to have relation to stereotyped outlook of the traditional society.

Table 12 Sex Representation in Biographies and Characters Found in Textbooks

	Male		Female	
	f	%	f	%
Biographies	53	90	4	10
Major Characters	84	83	17	17
Minor characters	27	73	10	27
Total	164	84	31	16

Biographies of scientists, philosophers, artists, political leaders, athletes, etc. are found in certain textbooks. They are found in :Amharic and English in grade three; Amharic and social studies in grade five; Amharic, science, social studies and art in grade six; biology and social studies in grade seven. High number of biographies are found in social studies texts of grade seven (sixteen) and grade five (twelve).

As shown in table 12, ninety percent of biographies are biographies of male while female share only ten percent. This indicates very high difference of representation of the two genders. In stories, fables, etc. including biographies as can be observed from table 10 eighty three percent of men/boys are depicted as main character and similarly seventy-three percent are shown as minor characters.

The computed chi-square value for biographies, major characters and minor characters are: $x^2 = 64$, $x^2 = 43.56$ and $x^2 = 21.16$ respectively. The results of all are more than the critical chi-square value (x^2 ,0.05 = 3.841). Hence, all have statistically significant difference between female and male sex representation.

Table 13 Gender Representation of Portrayed Occupations in Textbooks

No	Occupations	Male		Female	
		f	%	f	%
1	Professor	2	100	-	-
2	Teacher	34	62	21	38
3	Author/Authorises	9	90	1	10
4	Musician	14	74	5	26
5	Architect	7	100	-	-
6	Librarian	1	50	1	50
7	Lowyer	2	100	-	-
8	Physician	7	70	3	30
9	Researcher	11	92	1	8
10	King/Queen	31	97	1	3
11	Typist	-	-	2	100
12	Farmer	32	100	-	-
13	Merchant	10	63	6	37
14	Driver	6	100	-	-
15	Nationalist	2	100	-	-
16	Faculty dean	1	100	-	-
17	Religion leader	1	100	-	-
18	Political leader	4	100	-	-
19	Philosopher	1	100	-	-
20	Poet	4	67	2	23
21	Manager/director	3	100	-	-
22	Minister	1	100	-	-
23	Lecturer (university)	1	100	-	-
24	Scientist	6	86	1	14
25	Student	18	82	4	18
26	Chief of a village	1	100	-	-
27	Black smith	2	67	1	33
28	Weaver (traditional cloth makers)	1	33	2	67
29	Shepherd	1	100	-	-
30	Household worker	-	-	1	100
31	Judge	1	100	-	-
32	Tailor	1	100	-	-
33	Police	5	100	-	-
34	Nurse	-	-	4	100
35	Store keeper	2	100	-	-
36	Electrician/technician	2	100	-	-
37	Pilot	1	100	-	-
38	Clerk	1	100	-	-
39	Chemist	4	100	-	-
40	Archaeologist	2	100	-	-
41	Deacon/priest/evangelist	4	100	-	-
Total		236	81	56	19

Table 13 indicates sex representation of occupations displayed in textbooks included in the study. The occupations are grouped in forty-one items. The representation of female and male sexes is uneven in these total occupations. Men/boys are represented at more higher rates (eighty-one percent) than women/girls are represented.

Among the listed forty one occupations in table 13 women/girls are excluded from more than half of these occupations. These are: professor, architect, lawyer, farmer, driver, nationalists, faculty dean, religion leader. political leader, philosopher, manager/director, minister, lecturer, chief of village, shepherd, judge, tailor, police, storekeeper, electrician/technician, pilot, clerk, chemist, archaeologist and deacon /priest/ evangelist. Almost all of these mentioned occupations seem to be restricted only to men/boys in traditional notion.

On the other hand, as shown in table 13 men/boys are excluded in few occupations (typist, house hold worker, and nurse). These occupations are traditionally assigned to women/girls. In those occupations in which both sexes are depicted higher share is for men/boys. These unevenly distributed are teacher, author/authorises, musician, physician, researcher, king/queen, merchant, poet, scientist, student, blacksmith and weaver. All those evidences indicate that except few occupations most occupations have stereotypical representations.

Table 14 Gender Representation in Set of Picture/s

	Grade one		Grade two		Grade Three		Grade Five		grade six		Grade Seven		Total	
Picture/s with	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Male/s only	48	61	36	75	11	52	52	88	46	68	56	71	249	70
Female/s only	31	39	12	25	10	48	7	12	22	32	23	29	105	30
Both sexes	68		193		52		20		24		36		393	

Table 14 indicates sex representation in the set of pictures. In this case set of picture/s mean one or more than one human picture that is /are/ drawn separately/together. As shown in table 13 there are big differences of sex representations in the set of pictures-in grade, one, two, five, six and seven texts. In these grade levels more male gender set of pictures are depicted. Similar to these, the total data indicates men/boys are depicted in set of pictures twice more than that of women/girls. As related to the portrayal of both sexes, the highest set of pictures are depicted in texts of grade two

Table 15 Gender Representation of Activities in Pictures

No	Picture activities	Male		Female	
		f	%	f	%
1	Farming	14	93	1	7
2	Teaching	4	67	2	33
3	Learning in class rooms	21	54	18	46
4	Athletic activity	34	62	21	38
5	Carrying different goods	7	41	10	59
6	Ironing cloth	1	100	-	-
7	Playing games (without ball)	39	54	33	46
8	Hunting	1	100	-	-
9	Gardening	6	60	4	40
10	Playing games with ball	20	83	4	17
11	Judging	3	75	1	25
12	Preparing food	7	21	27	79
13	Fetching water/wood	1	14	6	86
14	Selling different goods	-	-	2	100
15	Swimming	2	67	1	33
16	Travelling by ship	4	67	2	33
17	Lifting weight	5	83	1	17
18	Digging ground	2	67	1	33
19	Drawing different pictures	28	52	26	48
20	Playing different musical instruments	21	70	9	30
21	Doing different physical exercise	90	78	26	22
22	House sanitation activity	8	32	17	68
23	Cloth washing	-	-	3	100
24	Shopping	-	-	1	100
25	Driving car/lorry	4	67	2	33
26	Telephone operating	-	-	2	100
27	Measuring time and liquid	5	83	1	17
28	Riding bicycle	1	100	-	-
29	Making experiments	1	33	2	67
30	Taking care of cattle	5	100	-	-
31	Conducting research	3	75	1	25
32	Fighting (war)	1	100	-	-
33	Constructing building	1	100	-	-
34	Body sanitation	1	33	2	67
35	Wavering(traditional cloth making)	3	60	2	40
36	Black smithing	1	100	-	-
37	Graduation	1	50	1	50
38	Leading	1	50	1	50
39	Cleaning surrounding form pollution	7	88	1	12
40	Reading	3	43	4	57
41	Horse riding	1	100	-	-
42	Milking cow	-	-	1	100
43	Child care	-	-	1	100
44	Operating machine	2	100	-	-
Total		359	60	237	40

Table 15 indicates sex portrayal of activities in pictures of textbooks which have human pictures. The total result shows that men/boys are reflected in picture activities more (sixty percent) than women/girls (forty percent). The calculated chi-square value for these data ($x^2 = 4$) is more than the critical chi-square value (x^2 ,0.05 = 3.841). Hence, there is statistically significant difference between the two sexes representation in picture activities.

As shown in table 15 women/girls are excluded in certain picture activities where as men/boys are included. These picture activities in which women/girls are excluded are ironing cloth, hunting, riding bicycle, taking care of cattle, fighting in war, constructing building, black smithing, horse riding and machine operation. Most of these activities seem traditionally reserved only to men/boys. On the other hand, there are certain activities in which men/boys are not depicted, but women/girls are portrayed. These are: selling different goods, cloth washing, shopping telephone operating, milking cow and child care. Similar to the above point, most of these activities seem traditionally reserved only to women/ girls.

Table 15 shows that in those activities in which both women/girls and men/boys are portrayed, uneven distributions are observed. Most of these have more male gender representation while few have more female gender representation. More male gender represented activities are farming (ninety-three percent), teaching (sixty-seven percent), athletic activity (sixty-two percent), gardening (sixty percent), playing games with ball (eighty-three percent), lifting weight (eighty-three percent), playing with different musical instruments (seventy-percent), measuring time and liquid (eighty-three percent) and cleaning surrounding from pollution (eighty-eight percent). Those of the activities with more higher female sex representation are: preparing food (seventy-nine percent), fetching water/wood (eighty-six percent), and house sanitation activity (sixty-eight percent). In both cases, the most picture activities inclined either to male or female gender reflection seem to be closely related to stereotyped activity assigned by the traditional society either to women/girls or men/boys.

In addition to content analysis which is the main instrument of the study, additional information were collected from two ICDR officials i.e., Curriculum Evaluation and Educational Research Co-ordination and Academic Subjects Curriculum Development Co-ordination. The other informants were three textbook commissioned writers. It was difficult for the writer to collect information from other commissioned writers since they live in different zones of the Amhara Region.

The results of the content analysis indicate that relatively better sex treatment is done on lower grades. In grade one fair treatment is done in English, maths, science, social studies and art; in grade two in English, maths, social studies and physical education and; in grade three in Amharic, English and maths. In addition, the total results of these three grade levels indicate that there is fair sex treatment in the texts. Although this is not true to all subjects the result is encouraging. Children at these grade levels are at early ages. The psychoanalytic theory emphasises that a child's early years (2-6) is critical in the development of sex roles perceptions (Kohlberg cited in Mikati, 1987:24-25).

To the contrary, the texts of grades five, six and seven show that most texts have unbalanced treatment. The most serious problem of unbalanced treatment is observed in grade five and seven text books.

Out of the total forty-two texts analysed, sixteen texts are fairly balanced and the rest twenty-six are found unbalanced. Among the twenty-six gender biased texts, only one text is female biased and the rest are male biased. The cumulative result of all grades and subjects indicate men/boys are portrayed seventy-seven percent while women/girls are depicted only twenty-three percent. In addition, in the activities of statements and pictures and occupations, women/girls and men/boys are depicted stereotypically. Women/girls are excluded from occupations and activities which are traditionally restricted to men/boys only by society. On the other hand, men/boys are excluded from certain activities and occupations which are limited to women/girls by society. In other activities and occupations in which both sexes are portrayed the representation of male sex is higher than female sex.

According to the information from the two ICDR officials, textbook writers of various regions attended workshops related to textbook writing. One of the issues considered in the workshop has to do about gender treatment in textbooks. This was to sensitise and make the writers aware about gender treatment in texts. They agreed that this was not a complete work since it was not a training program.

Besides this, the ICDR officials complained about the efficiency of the writers. They mentioned that writers were not competent enough and have no experience. They were also changed from year to year, because since they were commissioned writers they were recruited by bids. This information was given to the writer by the director of the ICDR.

Regarding curriculum development as one objective the equal treatment of sexes in textbooks is written in the New Education and Training policy (1994:13). Policy is not a simple matter. It is a general guide and obligatory. It has to be ensured by implementation. To attain the intended objectives, there is need of effective and efficient practitioners; Hence to produce acceptable textbooks, there has to be well trained competent writers. Textbook writing demands experienced writers. Instead of conducting workshops every year for new writers, it would have been profitable to provide intensive training for those who have the experience. First and foremost the stereotyped attitude of the writers has to be changed to apply balanced sex treatment in textbooks. The deep rooted stereotyped attitude of writers may not be up-rooted within a short time by conducting workshop.

The finding indicated that unfair treatment of the male and female sexes is depicted in biographies and major and minor characters. As related to these issues the textbook writers complained that various reference materials that portray the biography of women/girls were not available. They added that they also took stories, tales, etc. from available literature in which unfair sex major and minor characters are depicted. Many problems of biographies and characters are observed mainly in social studies texts of grades five, six and seven, and art text of grade six.

Textbook writers explained that they have tried to use unidentified and neutral nouns and verbs to avoid unfair treatment of the sexes. In Amharic language verbs are gender referenced. Unless they are used properly they aggravate the problem of unbalanced treatment of gender. The data of the analysis shows that except English texts, the writer have tried to use gender neutral verbs like "seru" "aslu", "tsafu", "teweyayu", "temelketu", etc. work, calculate, write, discuss, look, etc. (see Appendix B).

The writer prepared questionnaire to get some additional information about sex treatment of texts from teachers and directors. But he found that they do not have the awareness of sex treatment in textbooks. Hence, he was forced to give up this instrument. In addition, the discussion of the writer with several teachers and directors pinpointed that they are not even conscious about uneven sex treatment of class room activities. The development of non-sexist textbooks, teacher's guide and other related materials do not bring changes by themselves. Sunderland (1994:64) mentions that non-sexist materials are useless if they are used by teachers that have sexist attitude. Hence, teachers, school directors and other workers in schools should be aware of balanced practical treatment of girls and boys. Teachers have to discuss women issues in general and sex treatment of texts with their students.

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CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Summary

The study was intended to investigate if the contents and illustrations of the newly developed primary school textbooks (grades 1,2,3,5,6 and 7) of Amhara Region, have gender biased (sex-stereotyped) messages. To investigate this issue content analysis was employed. Forty-two textbooks of six grades were the subjects of the study. Fifty-percent of each textbook chapters were selected for analysis. Analysis was made across grade and subject levels.

Therefore, on the basis of the analysis made on the data secured through the instruments, the major findings of the study are summarised as follows:

1. Findings of texts at each grade level:-

Grade One:- In Amharic text, the general result of the categories indicated that male sex is represented seventy-three percent and female twenty-seven percent. In English textbook the representation for both sexes is equal (fifty percent). In maths men/boys are represented forty-one percent and women/girls fifty-nine percent, Male gender is portrayed in science text fifty-six percent and forty-four percent for female sex. In social studies male sex is portrayed forty-eight percent while female sex fifty-two percent . In art and music texts men/boys are depicted fifty-six and sixty-two percent respectively and women/girls forty-four and thirty-eight percent. The cumulative result of all texts of grade one indicates that men/boys are portrayed fifty-five percent while women/girls forty-five percent.

The representation in Amharic and music subjects show significant difference between male and female sexes. The other subjects English, maths, science, social studies,

and art do not have significant differences. The cumulative result of all texts show no significant difference.

Grade two:- In Amharic text, the total result shows that women/girls are reflected thirty-eight percent and men/boys sixty-two percent. The English text indicate equal treatment of both sixes (fifty-percent). Male sex is portrayed in maths fifty-six percent while forty-four percent for female sex. In science text women/girls and men/boys are represented thirty-one and sixty-nine percent respectively. Female sex is portrayed in social studies subject text forty-two percent and fifty-eight percent for male sex. In art, music and physical education, women/girls are depicted thirty-six, thirty-seven and forty-two percents respectively and sixty-four, sixty-three and fifty-eight percents respectively for men/boys. The cumulative result shows that female gender representation is forty-two percent and that of male gender is fifty-eight-percent.

Female and male sex portrayal shows significant difference in Amharic, science, art and music textbooks. The rest English, maths, social studies and physical education do not indicate significant difference. The cumulative result of all texts of grade two do not show significant difference.

Grade Three:- The total result of all categories of Amharic, English, maths, environmental science, and aesthetic and physical education show that male sex is portrayed forty-two, forty-seven, fifty, sixty-two and sixty-eight percent respectively. Female sex is represented fifty-eight , fifty-three, fifty, thirty-eight and thirty-two percent respectively. The cumulative result of all texts of grade three indicates that male sex is portrayed forty-nine percent while female sex fifty-one percent.

Significant difference of male and female sex portrayal is manifested in environmental science and aesthetic & physical education texts. The rest Amharic, English and Maths do not show significant variation. Similarly, the cumulative outcome of all texts of grade three do not indicate significant variation.

Grade Five:- The general result of categories in Amharic, English, maths and science show that women/girls are portrayed eight, forty-eight, thirteen and six percents/ respectively while ninety-two, fifty-two, eighty-seven and ninety-four percents/ respectively for men/boys. Also the representation results of women/girls in social studies, art, music and physical education are two, seventeen, seventy-five and eight percents/ respectively. Men/boys are portrayed ninety-eight, eighty-three, twenty-five and ninety-two percent respectively. The cumulative result of all texts of grade seven shows that male sex is portrayed eighty-one percent while female sex only nineteen percent.

Among the subjects of grade five, significant difference of male and female sexes portrayal is observed in Amharic, maths, science, social studies, Art, music and physical education. The only subject with no significant difference is English. The cumulative result of all texts of grade five indicates that there is significant variation of sex portrayal.

Grade Six:- Among grade six textbooks, in Amharic subject women/girls are depicted forty-one percent and men/boys fifty-nine percent. In English female and male sexes are portrayed forty-seven and fifty -three percent respectively. In maths text-female and male sexes are manifested forty-four and fifty-six percent respectively. In science text female and male sexes are depicted twenty-four and seventy-six percent respectively. In social studies text female and male genders are depicted thirty-two and sixty-eight percent respectively. In art, music and physical education female and male genders are represented thirty-five and sixty-five percent; twenty-nine and seventy-one percent; thirty-one and sixty-nine percent respectively. In addition, the cumulative result of all texts indicate that female gender is portrayed thirty-seven percent and male gender sixty-three percent.

Among the subjects of grade six, science, social studies, art, music and physical education texts have significant difference between female and male gender portrayal. The rest, Amharic, English and maths do not have significant difference. The cumulative result

of all texts of grade six indicates that there is significant difference between female and male sex representation.

Grade Seven:- In English text, the general result of categories indicates that male and female sexes are portrayed fifty-nine and forty-one percent respectively. The percentage of male and female sex portrayal in physics are seventy-eight and twenty-two respectively. Chemistry text depicts ninety-seven percent male sex representation and only three percent female sex representation. In biology text the manifestation of men/boys is sixty-eight percent and women/girls is thirty-two percent. The sex treatment of social studies show that men/boys are portrayed hundred percent while women/girls are almost neglected. The portrayal of male and female sexes in physical education texts are sixty-eight and thirty-two percent respectively.

Among grade seven texts physics, chemistry, biology social studies and physical education have significant difference of male and female sex portrayal. The only subject that do not have significant difference between male and female sex treatment is English. The cumulative result of all analysed texts of grade seven indicates that men/boys are portrayed ninety six percent and women/girls only four percent. This also indicates very high level of significant difference between male and female sexes representation.

2. Findings of texts at subject levels:-

Amharic subjects of all the five grades indicate that male sex is portrayed sixty-six percent and female sex is portrayed thirty-four percent. This has indicated significant difference between the two sexes portrayal. Biased treatment of the texts is observed in grades one two, and five. The rest grades have fairly balanced treatment.

English texts of all grade levels have balanced treatment of sexes. The same is true as related to cumulative result of all grade levels. In addition maths texts of all grade levels

have fairly balanced treatment of male and female sexes. This is also true as related to cumulative results of all grade levels.

Science texts of grades two, five and six have unbalanced treatment of male and female genders. On the other side, only grade one text has fairly balanced treatment. The general result of all grade levels indicate that there is significant difference of male and female sex portrayal.

Social studies texts show that unbalanced sex treatment is observed in grades five, six and seven. Grades one and two have fairly balanced portrayal. The cumulative result indicates that there is very high significant difference between male and female sex treatment.

Art textbooks have uneven treatment of the sexes in grades two, five, and six. Whereas balanced portrayal is observed only in grade one. The cumulative result of art subjects at all grade levels indicates unbalanced portrayal of the two sexes.

Music texts of all grades [one, two, five and six] show unbalanced treatment of gender. The cumulative result of all music textbooks indicate significant difference between male and female sex portrayal. Among unbalanced texts the only exception that depicted more higher percentage of female sex representation than male sex representation is music text of grade five. The cumulative result of all texts indicate unbalanced treatment.

Among the physical education subjects of all grade levels unbalanced treatment of gender is depicted in grades five, six and seven subject texts. Fairly balanced portrayal is observed only in grade two text. The cumulative result shows uneven reflection of gender messages.

Physics, chemistry and biology texts are prepared only for grade seven. All these three subjects show significant difference between male and female sex representation. This

indicates that they depict uneven treatment of sexes. Similarly, environmental science and aesthetic and physical education texts manifest unbalanced treatment of gender. These two subjects are being provided only for grade three level.

The cumulative results of all texts of all grades indicates that men/boys are depicted seventy-seven percent and women/girls only twenty three percent.

3. Findings of activities in written contents and biographies and characters portrayed in texts.

Activities in Statements:- The cumulative result of all activities indicates no significant sex variation. However, women/girls are excluded from thirteen activities and men/boys are excluded from six activities among the forty grouped activities. This polarisation of activities are closely related to stereotyped sex attitude of the Amhara society. On those activities in which both sexes are depicted, the representations have big differences Men/boys are shown more than women/girls.

Biographies and Characters:- Biographies of scientists philosophers, artists, political leaders, athletes, etc. are found in certain textbooks. Ninety percent of biographies are biographies of men while women are represented only ten percent.

In stories, tales, etc. including biographies eighty three percent of men/boys are depicted as main character and seventy-three percent as minor character. Women/girls are depicted as main character only seventeen percent and minor character only twenty-seven percent.

4. Findings in occupational references, picture numbers and picture activities.

Occupations Among the total forty-one occupations women/girls are excluded from twenty-five and men/boys from three. The occupations in which women/girls from are excluded include: professor, architect, lawyer, farmer, driver, nationalist, faculty dean, religion leader, political leader. philosopher, manger/ director, minister lecturer, chief of village, shepherd, judge, tailor, police, storekeeper, electrician, pilot, clerk, chemist, archaeologist and deacon/priest/evangelist. The occupations in which men are excluded include typist, house hold worker and nurse. In those occupations in which both sexes are portrayed, women/girls have less representation.

Picture numbers The number of male and female pictures in all texts do not show significant variation though more male person pictures (fifty-seven percent) are depicted than female person pictures (forty-three percent) In addition only males/s person/s is/ are depicted 249 times while females/s person/s is/ are depicted 105 times. Both sexes are drawn 393 times.

Picture activities:- The gross result of grouped forty-four activities indicate that there is significant difference between the portrayal of women/girls and men/boys. Male sex is represented at more higher rate than female sex. Women/ girls are excluded in activities like ironing cloth, hunting, riding bicycle, fighting in war, constructing building black smithing, horse riding and machine operation; where as men/ boys are excluded in activities like selling different goods, cloth washing, shopping, telephone operating, horse riding, milking cow and child care.

5.2. Conclusion

From the findings of the study the following conclusions may be derived:

Among the seven subjects of grade one, Amharic and music are male biased; and English, maths, science social studies and art have fairly balanced sex treatment. The most serious problem is found in Amharic text and equal treatment is found in English subject. In general, however the result of all subjects of grade one indicates balanced sex representation.

In grade two subjects, Amharic, science, art and music are male biased, while English, maths social studies and physical education portray fairly balanced treatment of sexes. The most serious problem is found in Amharic and the best treatment is found in English text. The total result of all subjects of grade two shows fairly balanced sex treatment.

Environmental science and aesthetic and physical education subjects of grade three have male biased messages. Balanced sex treatment is found in Amharic, English and maths. The worst problem is found in aesthetic and physical education and the best representation is found in maths textbook. The total result of all subjects of grade three indicates fairly even treatment of sexes.

Among the eight subjects of grade five, male biases are found in Amharic, maths, science, social studies, art and physical education whereas female bias is found in music. The only text that reflects balanced gender treatment is English. Serious bias problem is found in social studies text. The general result of all subjects of grade five shows male bias.

In grade six subjects, male bias is found in science, social studies, art, music and physical education; and Amharic, English and maths have no bias. The most serious bias is

found in science text and the best sex treatment in found in English textbook. The total result of all subject texts of grade six shows male bias.

Physics, chemistry, biology, social studies and physical education texts of grade seven are male biased and only English text is gender balanced. The most serious problem is found in social studies. The total result of grade seven subjects mentioned above indicates male bias.

Among all forty-two subjects texts of all grades analysed twenty-five texts are male biased and only one text is female biased. The most serious bias are found in social studies texts of grade seven and five, and grade seven chemistry. The best balanced gender treatment are found in English texts of grade one and two, and grade three maths. Sixteen textbooks are found fairly balanced. The cumulative result of the forty two subjects indicate male biased treatment of textbooks. Men/boys are reflected seventy-seven percent and women/ girls are represented only twenty-three percent.

English texts of all grade levels are found fairly balanced; and to the contrary music texts are found biased at all grade levels in which the subjects are provided. Among grade levels the most biased massages in textbooks are depicted in grade seven.

The cumulative result of forty grouped activities in written contents indicate no significant difference between female and male sex representation is depicted. However, women/girls are excluded from thirteen activities like ploughing, fishing, horse riding, etc. and men/boys are also excluded from six activities like: taking care of children, fetching water, cloth washing, etc. This portrayal is closely linked to stereotyped notion of the society. On those activities in which both sexes are depicted, men/boys are shown more than women/boys.

As related to biographies of scientists, philosophers, artists, political leaders, athletes, etc. found in certain texts, women/girls are portrayed only ten-percent while the rest

is the share of men/ boys. In stories, tales, etc. including barographs men/boys are portrayed eighty-three percent as major character and seventy-three percent as minor character. Women/girls are depicted as main character and minor character only seventeen and twenty-seven percent respectively.

Among the forty-one occupations depicted in the texts women/girls are excluded from the twenty-five and men/boys from the three. Women are excluded from occupations like professor, architect. lawyer, farmer, driver, nationalist, faculty dean, religion leader, political leader, philosopher, manager/ director, minister, lecturer chief of village, shepherd, judge, tailor, police , store keeper, electrician/technician, pilot, clerk chemist, archaeologist, and deacon/ priest/evangelist.

On the other hand, men/boys are excluded from occupations like typing house hold worker and nurse. These occupations in which women/girls and men/boys are neglected are stereotypical reflections of the society. Other occupations in which both sexes are depicted women/girls have less representation than men/boys. The gross result of all the forty one occupations show significant difference between male and female sex representation.

Men/boys and women/girls representation in pictures is almost fairly balanced. There is no significant difference between the two sexes. In addition, among the forty-four grouped picture activities, the cumulative result of male and female sex representation shows significant difference. Among these activities women/girls are excluded from ironing cloth, hunting, riding bicycle, fighting in war, constructing building, black smithing, horse riding and machine operation. On the other hand, men/boys are excluded in activities like selling different goods, cloth washing, shopping, telephone operating, milking cow and child care. In most of activities which both sexes are depicted men/boys are portrayed in more higher rates. The activities like food preparation, fetching wood water and cleaning house indicate more women/girls representation. So far, there were no sex demeaning messages found in the analysed texts.

Although certain limited efforts are made, further effort has to be exerted to portray women/girls and men/boys in textbooks in balanced and equal level. It is undeniable that those biased messages can bring negative short and long term effects. Marginalization of sexes can bring immediate negative consequences on both sexes (more on girls) and further problems to the society as a whole. Hence, implementation should be insured in as much as the Education and Training Policy of Ethiopia demands.

5.3. Recommendations

In the light of the findings of the study, it seems reasonable to suggest the following recommendations:

1. The result of the study has indicated that there are considerable number of biased texts. In addition, it has been also found that in activities and occupations women/girls and men/boys are portrayed stereotypically. Therefore, it is imperative to improve textbooks by making the necessary amendments to respond as much as international conventions and national policy demands.
2. The quality of textual content is one of the factors that promotes or hinders the quality of education. Education is a powerful instrument to bring the desired changes in students in particular, and the society in general. The rigid and conservative notions of the community have to be washed away. Disregarding this may mean walking half way. If texts are entertaining gender biased messages, they are aggravating societal stereotyped notions. Therefore, to avoid this and to respond as much as it is intended the education offices which have the autonomy have to make texts free from sexist messages before they are disseminated to schools.

3. Women textbook writers are very essential to portray the image of women/girls in texts, teacher's guides and other related materials.

Hence, there should be effort to include competent women textbook writers.

4 It has been pointed out in the discussion that one of the problems of textbook writers is lack of adequate reference materials to portray women/girls in biographies, stories, tales, etc. Therefore. it is necessary that relevant reference materials should be supported to raise the quality of texts.

5. Sex stereotypes have been inter-woven in society for many years. Concern about women issue in general, and sex-bias issue in particular are recent ideas in Ethiopia. To bring about the balanced portrayal of sex messages in the curriculum, first of all the writers attitudinal change is obligatory. Therefore, sex awareness discussions and intensive training supported by guidelines should be provided for writers and other concerned individuals.

6. In the discussion it has been mentioned that teachers and directors are not aware about gender treatment in textbooks as well as in classroom activities. In addition, it is vital that teachers should have the required attitude to use textbooks properly. Hence, to create awareness and develop positive sex attitude workshops, seminars, discussion forums, etc. should be conducted at different levels.

7. It is advisable that women issues, fair sex treatment in textbooks and classroom activities and other related issues be taught to the would be teachers. Thus, the above mentioned ideas should be incorporated in teacher education programs.

8. Economic, social, political technology, etc. changes are taking at very fast rate. At the same time, textbooks have to reflect these changes accordingly.

Therefore, to cope up with the dynamic changes and to eradicate outdated notions there should be frequent amendment of textbook contents.

9. Textbooks are directly and indirectly related to classroom activities, educational mass media, teacher's guide and others. Non-sexist texts with out the support of the above mentioned may not bring about the required attitudinal changes. For example androgens (sexist) classroom practices in classrooms and sexist broadcasts of educational media are able to contaminate the utility of textbooks. Hence, the writer would like to suggest that those who are interested in the area can conduct further research.

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Appendix A

Subjects and Analysed Chapters/Units/ Lessons/ pages

Grade One

No	Subjects	Chapters/pages
1	Amharic	odd Chapters
2	English	even pages
3	Maths	odd chapters
4	Science	even chapters
5	Social Studies	odd chapters
6	Art	odd chapters
7	Music	odd chapters

Grade Two

No	Subjects	Chapters/lessons
1	Amharic	even chapters
2	English	even number lessons
3	Maths	even chapters
4	Science	even chapters
5	Social Studies	odd chapters
6	Art	odd chapters
7	Music	even chapters
8	Phy.Education	even chapters

Grade Three

No	Subjects	Chapters / lessons
1	Amharic	even chapters
2	English	odd lesson
3	Maths	odd chapters
4	Environmental Science	even chapters
5	Aesthetics & Phy.educ.	odd chapters

Grade Five

No	Subjects	Chapters
1	Amharic	even chapters
2	English	even chapters
3	Maths	odd chapters
4	Science	odd chapters
5	Social studies	odd chapters
6	Art	odd chapters
7	Music	even chapters
8	Phy.Education	even chapters

Grade six

No	Subjects	Chapters
1	Amharic	Part one, odd chapters; part two, even chapters
2	English	even chapters
3	Maths	odd chapters
4	Science	odd chapters
5	Social Studies	even chapters
6	Art	even chapters
7	Music	odd chapters
8	Phy.Education	even chapters

Grade Seven

No	Subjects	Chapters / pages
1	English	odd chapters
2	Physics	odd chapters
3	Chemistry	odd chapters
4	Social studies	even chapters
5	biology	odd chapters
6	Physical Educ.	even chapters

Appendix B

Neutral / Unidentified Proper Names, Common Nouns, Pronouns and verbs Found in Textbooks

Grade One

Sub categories	Amh	Eng	Math	Sc	So.st	Art	Music	Total
	f	f	f	f	f	f	f	f
Proper nouns	-	-	-	-	-	-	-	-
Common nouns	8	-	13	2	8	4	6	41
Pronouns	11	18	9	-	1	2	2	43
Verbs	78	-	22	2	33	2	22	159
Total	97	18	44	4	42	8	30	243

Grade Two

Sub categories	Amh	Eng	Math	Sc	So.st	Art	Music	Ph.ed	Total
	f	f	f	f	f	f	f	f	f
Proper nouns	28	-	-	-	-	-	-	-	28
Common nouns	24	14	42	28	96	-	27	278	509
Pronouns	15	21	7	82	72	11	33	1	242
Verbs	225	-	290	140	113	9	80	389	1246
Total	292	35	339	250	281	20	140	668	2025

Grade Three

Sub categories	Amh	Eng	Math	Sc	So.st	Art
	f	f	f	f	f	f
Proper nouns	1	6	1	-	-	8
Common nouns	46	13	41	105	46	251
Pronouns	1	113	1	15	12	142
Verbs	198	-	273	149	155	775
Total	246	132	316	269	213	1176

Grade Five

Sub categories	Amh	Eng	Math	Sc	So.st	Art	Music	Ph.ed	Total
	f	f	f	f	f	f	f	f	f
Proper nouns	-	21	-	-	-	11	-	-	32
Common nouns	142	43	11	2	246	48	9	17	518
Pronouns	9	122	2	4	-	-	73	25	235
Verbs	164	-	210	155	119	60	26	186	920
Total	315	186	223	161	365	119	108	228	1705

Grade Six

Sub categories	Amh	Eng	Math	Sc	So.st	Art	Music	Ph.ed	Total
	f	f	f	f	f	f	f	f	f
Proper nouns	-	-	15	-	8	-	3	1	27
Common nouns	167	103	36	28	118	16	109	215	792
Pronouns	2	204	173	105	20	-	35	80	619
Verbs	193	-	164	54	52	35	64	270	832
Total	362	307	388	187	198	51	211	566	2270

Grade Seven

Sub categories	Eng	Maths	Phy	chem	Bio	So.st	Ph.ed	Total
	f	f	f	f	f	f	f	f
Proper nouns	-	-	-	-	-	-	-	-
Common nouns	73	-	13	27	166	1124	44	1447
Pronouns	246	22	3	50	3	707	-	1031
Verbs	-	214	95	119	328	1832	80	2668
Total	319	236	111	196	497	3663	124	5146

Appendix C-1

ይህ መጠይቅ የቀረበዉ በሥርዓተ ትምህርት ጥናትና ምርምር ኢኒስቲቲዉት ለሚሰሩ የአካዳሚክ ትምህርት ስርዓተ ትምህርት ዝግጅት አስተባባሪና የሥርዓተ ትምህርትና የትምህርታዊ ጥናት አስተባባሪ ለሆኑ ሁለት ኃላፊዎች ነዉ::

ይህ መጠይቅ የተዘጋጀዉ በሙያዉ ሃላፊነት ካላቸዉ ሰዎች መረጃ ለመሰብሰብ ታስቦ ነዉ የሚገኘዉም መረጃ የሚያገለግለዉ ለጥናትና ምርምር ነዉ ይህም መረጃ የሚያተኩረዉ በተማሪ መጻሐፍት ፀሐፊዎች ላይ በመሆኑ የእርሶ ቀና ትብብርና ግልጽ መልስ ለጥናቱ መሟላት ከፍተኛ አስተዋጽኦ አለዉ::

1. በመማሪያ መጽሐፍት ዝግጅት ላይ የሴትና የወንድ ያታዎችን አቀራረብ በሚመለከት ወርክ ሾፕ÷ ሴሚናር ÷ ሥልጠና÷ ወዘተ ነበርን?
2. የመማሪያ መጽሐፍት ፀሐፊዎች በሙያዉ ምን ያህል ብቁ ነበሩ?
3. ለመማሪያ መጽሐፍት ፀሐፊዎች የቀረበዉ ወርክ ሾፕ ምን ያህል የተሟላ ነበር? (የያታን ዉክልና በሚመለከት)
4. በመጻሐፍቶች ዝግጅት ላይ የያታን አቀራረብ በሚመለከት የተከሰቱት ችግሮች ምን ምን ነበሩ?
5. ከያታ ጋር በተያያዘ በመማሪያ መጻሐፍት ላይ ከቀድሞዎቹ መጽሐፍቶች ጋር ሲወዳደር ምን ያህል ለዉጥ ይኖራል ብለዉ ይገምታሉ?

Appendix C-2

(The Amharic Version of the Interview)

The following interview items are to be adressed to ICDR oficials, Academic Subjects Curriculum Development Co-ordinator and Curriculum Evaluation and Educational Research Co-ordinator.

This interview is designed to collect information from those people who are responsible in the field. The inforamtion to be obtained is going to be used for research purpose in order to produce a thesis. The information to be gathered is related to textbook writers. Therfore, your assistance and frank responses are highly valuable to complete the study.

1. Have you conducted workshop, seminar, training etc as related to gender treatment in textbooks?
2. How do you evaluate the proficiency of textbook wirters?
3. How far was the workshop satisfactory? (as related to gender treatmet in texts)
4. What were the main problems occured in textbook preparation as related to portrayal of sexes?
5. How do you evaluate sex treatment in texts as compared to the previous texts?

Appendix D-1

ይህ መጠይቅ የቀረበዉ በክልል ሶስት (በአማራ ክልል) የሚያገለግሉትን የማስተማሪያ መማሪያ መጽሐፍ በማዘጋጀት ለሰሩ ፀሐፊዎች ነዉ::

መጠይቁ የተዘጋጀዉ ከሙያዉ ጋር ቀጥተኛ ግንኙነት ካላቸዉ ሰዎች መረጃ ለመሰብሰብ ታስቦ ነዉ የሚገኘዉም መረጃ የሚያገለግለዉ ለጥናትና ምርምር ነዉ ይህም መረጃ ያተኮረዉ በተማሪ መጽሐፍት ላይ በመሆኑና እርሶም መጻሐፍት በመፃፍ የሰሩ በመሆኑ የእርሶ ቀና ትብብርና ግልጽ መልስ ለጥናቱ የተሟላ መሆን ከፍተኛ አስተዋፅኦ አለዉ::

1. በመማሪያ መጽሐፍት የያታዎችን በይዘትና በስእላዊ መግለጫዎች ላይ ያለዉን አወካከል የቀረበልዎት ወርክሾፕ በቂ ነበር ብለዉ ይገምታሉ?
2. የያታን አፃፃፍና አሳሳል በሚመለከት መጽሐፍ ሲጽፉ የገጠመዎት ችግር ምን ነበር?
3. የመማሪያ መጻሕፍት ስትጽፉ በቂ ዋቢ መጽሐፍት ነበራችሁን? የተጠቀማችሁባቸዉን የት አገኛችኋቸዉ?
4. ቀደም ብሎ መማሪያ መጽሐፍት ካዘጋጁ ሰዎች የያታን አጻጻፍ በሚመለከት ያገኛችሁት ልምድ ነበርን?
5. መጽሐፍቶችን በምትጽፉበት ጊዜ ምን አይነት ድጋፍ ታገኙ ነበር?
6. በአጠቃላይ የያታን አወካከል በሚመለከት ሚዛናዊነትን ለመጠበቅ ምን ያህል ጥረት አድርጋችኋል?

Appendix D-2

(The Amharic Version of the Interview)

The following interview items are to be adressed to Region Three (Amhara Region) textbook writers.

This interview is prepared to collect information from those people who are responsible in the field. The information to be obtained is going to be used for research purpose to produce a thesis. The information to be gathered is related to textbook writers. Since you have worked as text writer, your assistance and frank responses are highly valuable to complete the study.

1. Was the workshop conducted as related to gender treatment in textbooks satisfactory?
2. What was the problem you encountered when you write texts as related to gender portrayal?
3. Have you had adequate reference materials when you write text? where did you get them?
4. Have you shared experiences about sex portrayal in texts from those who prepared fromerly?
5. What were the assistance you got during the process textbook writing?
6. In general, How was your effort to portray male and female sexs in balanced way?

Appendix E

Calculation of the Chi-square (x^2) Statistics for the Data in Table 3,4,5,6,7,8,9,10,11,12,13 & 15

Formula $x^2 = \sum \frac{(O-e)^2}{e}$

O = Observed value

e = expected value

df = Cells - 1 = df = 2-1 = 1

Source Fraas: J.W(1983 : 274)

For the Data in Table 3

O	e	$(o-e)^2$	$\frac{(o-e)^2}{e}$	$\left(\frac{(o-e)^2}{e}\right) 2$
.73	50	529	1058	21.16
50	50	0	0	0
41	50	81	1.62	3.24
56	50	36	0.72	1.44
48	50	4	0.08	0.16
56	50	36	0.72	1.44
62	50	144	2.88	2.56

For the Data in Table 4

o	e	$(o-e)^2$	$\frac{(o-e)^2}{e}$	$\left(\frac{(o-e)^2}{e}\right)2$
62	50	144	2.88	5.76
50	50	0	0	0
56	50	36	0.72	1.44
69	50	361	7.22	14.44
58	50	64	1.28	2.56
64	50	196	3.92	7.84
63	50	169	3.38	6.76
58	50	64	1.28	2.56

For the Data in Table 5

o	e	$(o-e)^2$	$\frac{(o-e)^2}{e}$	$\left(\frac{(o-e)^2}{e}\right)2$
42	50	64	1.28	2.56
47	50	9	0.18	0.36
50	50	0	0	0
62	50	144	2.88	5.76
68	50	324	6.48	12.96

For the Data in Table 6

O	e	$(o-e)^2$	$\frac{(o-e)^2}{e}$	$\left(\frac{(o-e)^2}{e}\right)2$
92	50	1764	35.28	70.56
52	50	4	0.08	0.16
87	50	1369	27.38	54.76
94	50	1936	38.72	77.44
98	50	2304	46.08	92.16
83	50	1089	21.78	43.56
25	50	625	12.5	25.00
92	50	1764	35.28	70.56

For the Data in Table 7

O	e	$(o-e)^2$	$\frac{(o-e)^2}{e}$	$\left(\frac{(o-e)^2}{e}\right)2$
59	50	81	1.62	3.24
53	50	9	0.18	0.36
56	50	36	0.72	1.44
76	50	676	13.52	27.04
68	50	324	6.48	12.96
65	50	225	4.5	9
71	50	441	8.82	17.64
69	50	361	7.22	14.44

For the Data in Table 6

O	e	$(o-e)^2$	$\frac{(o-e)^2}{e}$	$\left(\frac{(o-e)^2}{e}\right)2$
92	50	1764	35.28	70.56
52	50	4	0.08	0.16
87	50	1369	27.38	54.76
94	50	1936	38.72	77.44
98	50	2304	46.08	92.16
83	50	1089	21.78	43.56
25	50	625	12.5	25.00
92	50	1764	35.28	70.56

For the Data in Table 7

O	e	$(o-e)^2$	$\frac{(o-e)^2}{e}$	$\left(\frac{(o-e)^2}{e}\right)2$
59	50	81	1.62	3.24
53	50	9	0.18	0.36
56	50	36	0.72	1.44
76	50	676	13.52	27.04
68	50	324	6.48	12.96
65	50	225	4.5	9
71	50	441	8.82	17.64
69	50	361	7.22	14.44

For the Data in Table 8

O	e	$(o-e)^2$	$\frac{(o-e)^2}{e}$	$\frac{(o-e)^2}{e}$
59	50	81	1.62	3.24
78	50	784	15.68	31.36
97	50	2209	44.18	88.36
68	50	324	6.48	12.96
100	50	2500	50.00	100.00
68	50	324	6.48	12.96

For the Data in Table 9

O	e	$(o-e)^2$	$\frac{(o-e)^2}{e}$	$\frac{(o-e)^2}{e}$
55	50	25	0.5	1.0
58	50	64	1.28	2.56
49	50	1	0.02	0.04
81	50	961	19.22	38.44
63	50	169	3.38	6.76
96	50	2116	42.32	84.64
77	50	729	14.58	29.16
71	50	441	8.82	17.64
82	50	1024	20.48	40.96
59	50	81	1.62	3.24
84	50	1156	23.12	46.24
81	50	961	19.22	38.44
57	50	49	0.98	1.96
60	50	100	2.00	4.00
77	50	729	14.58	29.16

DECLARATION

I hereby declare that this thesis is my origional work done under the guidance of Ato Nardos Abebe. All relevant sources used for the thesis are duly acknowledged

Mulualem Tesema