

Gender Orientation: Reinforcing Inequalities Through Textbooks

Robert Bisonga Mwebi

Department of Curriculum and Education Management

Laikipia University

rmwebi@Laikipia.ac.ke

Abstract

A textbook is one of the interlinking components in the teaching learning process. Textbooks are instrumental in transmitting a body of knowledge, skills and attitudes accumulated over time to the next generation. They are therefore powerful instruments for socialization. As instruments of socialization however, these textbooks can be used to perpetuate gender inequalities mirroring those that exist in the society at large if proper care and consideration is not taken into account during their development. Anchored on the social learning theory, the study sought to examine how textbooks in Kenya orient learners into societal gender roles through the gender expressions and depiction of gender roles for male and female characters as used in the primary mathematics textbook for standard eight under the 8-4-4 syllabus. The findings of this study revealed that the mathematics textbook used by standard eight learners in Kenya's system of education reinforces the traditional and socially existing male and female stereotypes. It is therefore recommended that to create more role models for female learners, female authors should be incentivized to author more school textbooks. Secondly, authors of textbooks should be sensitized on gender biases in textbooks so as to avoid them when authoring books. Teachers should also be trained to identify and counter gender biases in the textbooks. Moreover, the government through the ministry of education and Kenya Institute of Curriculum Development (KICD) should not approve textbooks for use before they are vetted against the gender parameter in order to ensure egalitarianism in the wider society.

Key words: Gender orientation, Gender expression, textbook, social inequalities, Egalitarianism

1.0 Introduction

The whole process of teaching and learning revolves around two main components namely the teacher and the learner. Apart from the two, several other factors are involved in the process. Though each of the factors serves different functions, the ultimate objective of all of them is to strengthen the link between the teacher and the learner. A textbook is one of the links of this network. Textbooks are believed to be an aid provided to teachers to facilitate the teaching learning processes (Kaur, 2018). According to the Collins dictionary, a textbook is defined as a manual for instructions. The oxford dictionary defines it a book for use in study while the Webster American dictionary defines it as any manual of instruction, a presentation of a subject as a basis of

instructions. From the foregoing, a textbook contains knowledge of a subject matter which has to be imparted to the learners. Textbooks are therefore instrumental in helping the learners achieve certain objectives as laid down by the respective authors. Textbooks act as a powerful media in transmitting a body of knowledge, skills and attitudes to the next generation which has been accumulated over the years. They are therefore an important tool of socialization. At the elementary level, they are particularly crucial as they shape the factual knowledge, attitudes and skills children are to supposed to acquire (Kereszty, 2009).

The modern textbook is considered as an assistant teacher in print in which the author tries to enter the classroom as personally as the pages of the book will permit in order to mould the thinking of a young generation. As a matter of fact, students spend as much as 80 to 95 percent of classroom time using textbooks (Sadker & Zittleman, 2007). Textbooks therefore can be said to be powerful instruments of socialization as they can influence the thoughts and feelings of readers and develop in them a tendency towards a particular philosophy. Teachers also make a majority of their instructional decisions based on textbooks (Sadker & Zittleman, 2007). In the school system, textbooks play an important role as they mediate the process of knowledge impartation on various aspects of school culture in particular and the society in general. They help in disseminating and nurturing values generally accepted in the society. For this reason, a good textbook should be devoid of bias ensuring that undesirable elements are not presented either directly or even symbolically (Aggarwal & Biswas, 1972).

One of the tenets of quality education as advocated by the global SDG goal number four is inclusivity in education which implies lack of discrimination irrespective of race, gender or socio-economic background (OECD, 2008). Inclusive education can be achieved through an inclusive curriculum which is devoid of biases including gender biases. For this reason, UNESCO, has produced guidelines to check if a learning material is gender biased. Outlined in these guidelines is asking whether the materials used by the teacher or students are free from gender stereotypes; Whether the materials show females and males an equal amount of times; whether the materials show females and males with equal respect, and potential (when talking about jobs, or the future); whether the curriculum reflect the needs and life experiences of both males and females and whether the curriculum promote peace and equality for males and females, regardless, of their race, class, disability, religion, sexual preference, or ethnic background (UNESCO, 2003). In view of

this, experts in the field of education give maximum attention to textbook preparation and development with the aim of making it flawless, beautiful and valuable and which could motivate and develop interest among the readers.

In most instances however, textbooks tends to show gender expressions i.e. one's situational expression of cultural cues which communicate gender identity (labels used when socially constructing sexed personas within the context of social groupings) which can be used to buttress the already existing social inequalities between male and female (Cristian, 2021). Masud (2017), avers that gender roles and inequalities are reproduced, formed, defined, strengthened and promoted by educational institutions through implicit and explicit means such as textbooks. A gender-responsive education system is therefore crucial to ensure male and female learners of all ages have access to quality, relevant and protective educational opportunities (Inter-Agency Network for Education in Emergencies , 2010). The Kenya national policy on gender advocates the removal of gender bias in the school curriculum, educational materials and practices for equity (Republic of Kenya, 2019) while the basic education act in Kenya advocates for elimination of gender discrimination in all spheres of the society (Republic of Kenya, 2013).

While most research has focused on unequal access to education and differences in enrolment rate for girls and boys (Durrani, 2008), the way curriculum and textbooks depicts boys and girls unequally while constructing them as gendered subjects need to be explored. As instruments for concept and attitude formation, textbooks help to develop in the students' self-esteem and identity according to the gendered role models they are exposed to in the wider society (Campbell, 2010).

Analysis of textbooks and storybooks in Australia, England, Europe, India and USA shows that textbooks tend to have biases which can be used to perpetuate certain myths and stereotypes existing in the society. Finn, Reis, and Dulberg, (1980) observes that textbooks tend to perpetuate gender inequalities by depicting males as ingenious, independent, creative, brave, active, curious, conquering, assertive and skilful actors who are inclined to select military, medical, scientific, political and legal careers. Females on the other hand are stereotyped as dependent, passive, quiet, compliant and engage in care giving careers. The knowledge obtained from textbooks can be different for girls and boys thus setting the base for gender stereotyping. Textbooks signify what it means to be a child in a specific context, which encompasses learning gender identity through

socialization (Kereszty, 2009). According to Lynch, Modgil, and Modgil, (1992) textbooks can be used to perpetuate gender inequalities mirroring those that exist in the society at large.

Like any other society, gender biases and stereotypes are known to exist in every echelon of the Kenyan society. This study therefore was an attempt to critically examine the gender expressions as depicted in Kenyan textbooks with particular focus to the mathematics textbook for standard eight authored by the Kenya Literature Bureau and used as the main course book for the students pursuing the 8-4-4 syllabus. The study about gender orientation in Kenyan textbooks was deemed relevant because every year over one million pupils sit for the Kenya Certificate of Primary Education (KCPE) examinations to enable them to proceed to secondary schools across the country. The kind of orientation in terms of gender these pupils get based on expressions of gender in textbooks has immense effect in their future career and lives. Griffith (2010), observes that curricula holds the power to “naturally” orientate women and men towards certain careers. In view of this scenario, it was hoped that the findings of the research would have wider policy implications in regard to the mathematics curriculum right from its development and design. The researcher felt that the study on this area therefore, would be of great import to the education sector thus justifying the time and effort of study.

2.0 Social Cognitive Theory of Gender Development and Differentiation

This study was anchored on the social Cognitive Theory of Gender Development and Differentiation based on the social learning theory by Albert Bandura (1977). Social learning theory emphasizes the importance of observing, modelling, and imitating the behaviours, attitudes, and emotional reactions of others (Bandura, 1977). It considers how both environmental and cognitive factors interact to influence human learning and behaviour. Cognitive social learning theory includes the mechanisms of reinforcement, punishment, imitation, modeling, and observational learning, as well as attention, self-regulation, and self-efficacy (Bussey & Bandura, 1999). Within the realm of the cognitive theory of gender development and differentiation, attention refers to the process by which children attend to same-gender models, imitating them more than opposite-gender models. For example, a girl pays more attention to her mother's behaviors (such as cooking) than her father's behaviors (such as changing the oil in a car), and she then imitates those behaviors.

Children regulate or guide their own behavior by monitoring and behaving in ways that are consistent with their internalized gender norms. For example, in a mixed-gender group, boys monitor their own behavior and do things they perceive to be masculine, such as playing rough and competing with other boys. Also, cognitive social learning theory argues that we set goals for ourselves based on our self-efficacy, which is the belief that we have the ability to accomplish a given task. For example, an adolescent girl attempts tasks that she perceives as being consistent with her gender role, such as wearing makeup or choosing nursing classes over engineering ones. This theory was relevant to the current study in the sense that the portrayal of gender characters in the book could help reinforce gendered perceptions about the behavior and career aspirations for both boys and girls who read the book.

3.0 Objectives

The specific objectives for the study were

- a) To examine gender representation of male and female characters in the primary school mathematics textbook for standard eight pupils used in Kenya's 8-4-4 syllabus
- b) To find out gender expression of roles and activities as depicted for males and females in the primary school mathematics textbook for standard eight pupils used in Kenya's 8-4-4 syllabus

4.0 Methodology

This was a mixed methods study that relied mainly on documentary analysis method for data collection. An inventory checklist for textbook analysis was used to analyse the textbook by focusing on both the external aspects (cover page, title and list of writers) and internal aspects (content in solved examples, exercises and revision exercises). In using the checklist, the main focus was first to find the number of male and female characters used in the standard eight mathematics textbook. The second aim was to find out the various roles and activities assigned to the male and female gender in the textbook. Analysed data was presented in form of percentage frequencies and excerpts from the textbook. The instrument's reliability was determined using a two-test administration and the interrater reliability was .84 which was more than the threshold of .7 as enunciated by Glen (2016)

5.0 Results

The results of the study were in line with the two main objectives that were formulated for the study. These were to examine gender representation of male and female characters and to find out gender expression of roles and activities as depicted for males and females in the primary school mathematics textbook for standard eight pupils used in Kenya's 8-4-4 syllabus. Findings in view of the two objectives are presented in sections 5.1 through 5.2

5.1 Gender representation

Representation of gender in the textbook was examined first through analysis of internal aspect and external aspects of the book and gender expressions as depicted in terms of frequency of the male and female characters used in the textbook. Analysis and presentation of findings regarding this parameter is as presented in sections 5.1.1 through 5.1.3

5.1.1 Analysis of external aspects of the book

The external aspects of the book entailed the cover, title and list of writers. The title of the book was "primary mathematics pupils' book for standard 8" and was found to be gender neutral. The front cover however shows a picture of a boy and a girl. The boy and girl have both advanced in their academic ladder and both have stepped at the step-column for standard eight. However, the boy is shown to be a head of the girl by a few steps. This expression implies that the male child is always ahead of the girl child even when they are at same level. Regarding the list of writers, it was established that nine teachers participated in the production of the book as indicated in the preface page. Of these, only two are women representing about 22% of the writers. This percentage is insignificant considering that there are many women mathematics educators in Kenya. Girls therefore are left without adequate role models to emulate. Studies show that in cases where textbooks were written by female authors, there was a higher representation and frequency of female icons (Durrani, 2008; UNESCO, 2004)

5.1.2 Analysis of internal aspects

The internal aspects of the textbook studied included content in solved examples, exercises and revision exercises. The book contains 15 chapters in which there are a total of 395 male characters

compared to 201 female characters. Thus, the male characters constitute 66 percent of the human characters compared to 34 percent for female.

5.1.3 Gender expressions of male and female characters

The parametric aspects of gender expressions that were studied included usage of proper nouns (actual/ real names; gender based titles recognized by various nouns as: man, father, son, brother, husband (for male titles) and woman, mother, daughter, sister, wife (for female titles) and gendered pronouns such as he/she and him/his/her. Analysis of these aspects is as shown in table 1

Table 1 distribution of gender expressions i.e. names, titles & pronouns)

Gender expression	Male (%)	Female (%)
Actual name	33	18
Gender title(s)	11	6
Gender pronoun(s)	23	9

The respective gender parameters measured depict that male are almost twice as mentioned as their female counterparts hence depicting widespread gender expression imbalances. This finding confirms that of Durrani (2008) who found that the representation of women in textbook illustrations was minimal, with 21.4% of illustrations portraying women and the rest portraying men. Similarly, there was gender bias in language with 'he' and 'him' being used as a noun more often than 'she' or 'her' (Durrani, 2008).

5.2 Gender expressions (roles, activities and occupations)

There is a total of 263 activities/roles that are mentioned in the book. Of these, 81 percent of them are associated with males while about 19 percent are associated with females. This implies lack of adequate role models for girls. The few who are mentioned in the book do not depict the female gender professionally as females are shown to be engaged in domestic activities involving laundry work and sewing as per the following excerpts illustrates:

- i) Mukami (girl) can do the washing up in 8 minutes but her mother can do in 6 minutes. What fraction of the work can each of them do in 1 minute? - page 236*

- ii) *Four girls made four equal square table clothes. Each table cloth had an area of 2500cm^2 . They joined the four table clothes to make one square table cloth. What was the length of one side of the small table cloth to the corresponding side of the big table cloth they made?*
–page 6

On the other hand, the boys have plenty of role models at their disposal. The gendered activities presented in the book help to disseminate information to boys that they can take occupations in business as businessmen or salesmen as can be deduced from the following two extracts.

- i) *Four businessmen, Wanga, Muthui, Ngolo and Musee shared kshs 36000 between them. Wanga got $\frac{7}{8}$ of the total. Muthui got $\frac{3}{8}$ of the remainder while Ngolo and Musee shared the remaining amount in the ratio 3:2. How much money did each receive?* – page 40
- ii) *A salesman is paid a salary of shs 2500 per month and the commission of 3% of the value of items he sells. In one month, he sold goods worth shs 43500. How much money did he earn that month?* – page 175

Clearly the excerpts serve to demonstrate that there are significant gender biases in the mathematics textbook. In a study by Ullah and Skelton (2012) it was established that textbooks depict women in stereotypical gender roles like cooking, cleaning, washing dresses, raising children and taking the lead in domestic chores. Further, Finn, Reis, and Dulberg, (1980) observes that females are stereotyped as engaging in care giving careers. The textbook under study therefore can be judged as conveying the stereotypical gender roles that exist in the Kenyan society.

Some roles and activities came to the limelight in due course of content analysis of the textbook. Based on the emerging themes, the activities were grouped into the following categories: domestic chores, business transactions, banking, agriculture, property ownership, leisure sports and entertainment, skilled labour, salaries/ wages/ earnings and masculinity. The main factors of interest regarding each of the roles is as explained in section 4.2.1

4.2.1 Analysis of Gender specific roles and occupations

Each of the nine themes was analysed in terms of the respective areas of focus with respect to portrayal of specific roles, activities and or occupations undertaken by male and female characters. Regarding the domestic chores, the analysis focused on the roles revolving around cooking, fetching of water, firewood and other household duties, for business transactions the analysis focused activities involving buying and selling goods and services while for banking activities the study focused on the process of depositing, saving and withdrawing or borrowing money from a financial institution. With regard to agricultural activities, the study sought to find out who does most of the farming activities i.e. planting, cultivation and field preparation activities while for property ownership, the study aimed at finding out who among male and female gender was depicted as the owner of land and/or livestock, vehicles/motor cycles and other capital implements, houses and business enterprises. In terms of leisure/ sports /entertainment and welfare activities, the study sought to find out the particular gender with the most opportunities for recreation and leisure while in the parameter for salaries/wages and earnings the study sought to find out who the textbook depicts as the breadwinner in the family. As for labour (skilled, semi- skilled and unskilled) activities, the study sought to find out how men and women are depicted in terms of performing professional and non-professional tasks. Finally, for masculinity, the study sought to find out how women and men are depicted physically based on the performance of activities requiring expenditure of physical energy. Overall, the percentage distribution of male and female characters based on the nine parameters is as shown in table 2.

Table 2: Gender distribution of roles, activities and occupations

Gender Roles	Male (%)	Female (%)
Domestic	38	62
Business transaction	83	17
Banking	75	25
Agriculture	82	18
Property ownership	84	16
Leisure/ sports and entertainment	83	17
Skilled labour	100	0
Salaries wages and earnings	86	14
Muscular activities	85	15

From table 2, the percentage distribution for men is higher in all the mentioned parameters except for domestic activities where females outnumber males. The implication is that boys are likely to be influenced to join lucrative careers and positions since they have more role models as depicted in the book. Girls on the other hand are left with less career options most of which relegate them to care giving careers. This finding is in conformity with those of Ullah and Skelton (2012) where women were depicted in performing domestic chores. According to Dean, (2007) textbooks can present a gendered picture of the world thus covertly encouraging girls and boys to take up the stereotypical positions and careers constructed for them by these books.

6.0 Conclusions and Recommendations

Textbooks have the power to change the attitudes and behaviour of individuals covertly and overtly. They can be used to promote and enhance social constructs which can privilege certain groups in the society including men's power over women (Smith, 1991). The findings of this study provide evidence that the mathematics textbook used by standard eight learners in Kenya reinforces the traditional and socially existing male and female stereotypes. It should be noted that the government through the ministry of gender has made concerted efforts towards ensuring gender parity in all echelons of the Kenyan society. However, these efforts will be in vain if textbooks disseminate values and beliefs which contravenes the ministry's initiatives. The differences depicted in the representation and discrimination in the school textbook has an impact on children's life choices as well as motivation (Ullah & Skelton, 2012). This is because textbooks are used as instruments for concept and attitude formation (Lynch, Modgil, & Modgil, 1992). According to Campbell (2010), Students develop their self-esteem and identity according to the gendered role models they are exposed to. Therefore, it is important for textbooks to provide equal opportunities in terms of gender representation for creation of a more egalitarian society. In today's society both women and the men must be portrayed as equal beings who complement each other. The woman of today is capable of doing and excelling in jobs which were traditionally reserved for males. In fact, extant literature shows that women can perform better than men in all fields given a level playing ground. It is therefore critical that the gender differences existing in textbooks be eliminated. First, to address this, female authors should be incentivized in order to encourage them to author more school textbooks. Empirical evidence shows that cases where textbooks were written by female authors, there was a higher representation and frequency of female icons in various careers (Durrani, 2008; UNESCO, 2004). Secondly, it is imperative that the authors of textbooks be

sensitized on gender biases that they advertently or inadvertently pass across. Furthermore, teachers can be trained to identify and counter gender biases in the textbooks and encourage their students to do the same. Moreover, the government through the ministry of education and Kenya Institute of Curriculum Development (KICD) should ensure that the textbooks approved for use are vetted against the gender bias parameter. Besides, there is need to increase awareness for all education stakeholders on the danger of using gendered learning and teaching materials.

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