GENDER REPRESENTATION IN MATHEMATICS TEXTBOOKS IN AZAD JAMMU & KASHMIR

Dr. Hazir Ullah[1], Farooq Abdullah[2], Akhlaq Ahmad[3], Dr. Rabia Ali[4]

Abstract

Gender representation in textbooks has been a subject of academic research and debate the world over. Nevertheless, in the developing world in general and Azad Jammu and Kashmir in particular, gender representation in textbooks, especially in Mathematics textbooks, has not received due academic attention. This study examined gender representation in Mathematics textbooks used in primary schools in Azad Jammu and Kashmir. The main focus was to examine whether or not Mathematics textbooks reproduce or challenge the stereotypical representation of men's and women's activities and social roles. Following the procedure of content analysis of a school material, adopted by the feminists of the second-wave, both quantitative and qualitative content analyses were employed for the current research. The analysis of the gender representation in 5 Mathematics textbooks from class 1 to class 5 unpacked that Mathematics textbooks, reinforce and reproduce gender stereotypes by portraying men/boys in the public domain (playing games, driving, running shops, doing and investing in businesses etc.) and women /girls in the private domain of home (engaged in cooking, home decoration, helping out their children in homework etc.). The overall inference made from the content analyses was that the mathematics textbooks used in the primary schools of Azad Jammu and Kashmir

[1]Associate Professor/Chair, Department of Sociology, IIUI, hazir.ullah@iiu.edu.pk
[2] Ph. D Scholar, Department of Sociology, IIUI
[3] Assistant Professor, Department of Sociology, IIUI
[4] Assistant Professor Department of Sociology IIUI

represent public domain as men's world while women/girls are depicted in the private domain of home engaged in cooking, raring children and other domestic chores.

Keywords: *Content Analysis, Gender Representation, Gender Stereotypes, Private Domain, Public Domain*

1. Introduction

This paper aims to examine gender representation in textbooks in Azad Jammu and Kashmir (AJ&K). AJ&K being a self-governing administrative division has education policy and textbooks approved by the Federal Ministry of Education, Government of Pakistan. The National Education Policy (NEP) 2009 is one of the most important of a series of education policies in Pakistan dating back to 1960 (Ullah, 2016). The commitment to eradicating gender inequalities in education by 2015 and promoting gender equality in education has (Ullah & Skelton, 2013) remained part of the 1973 constitution of Pakistan, Education for All (EFA), Pakistan's Education Sector Reforms 2001–2015 and the National Plan of Action 2001-2015 (Ullah, 2013). In addition, the National Plan of Action also focused on elimination of gender bias in textbooks (Ministry of Education, 2003).

In 2005, the Federal Ministry of Education (MoE), having commitment to international treaties and the 1973 constitution, constituted a national curriculum review committee to revisit the national curriculum and eliminate gender bias in textbooks and curriculum (Ministry of Education, 2008). The revised curriculum, duly approved by the Curriculum Wing of the MoE, was disseminated to all provinces for implementation. There after textbooks were developed by the Provincial textbook boards in accordance with the guidelines of the Curriculum Wing of the MoE (Ullah & Skelton, 2013).

The schools located in four areas (namely, Federally Administered Tribal Areas-FATA, Gilgit-Baltistan-GB, Islamabad Capital Territory- ICT and AJ&K) follow textbooks developed by any one of the four provinces of Pakistan. Public schools in AJ&K teach textbooks developed by the Punjab textbooks board. The Pakistani government has committed to international community to address

gender equality in curriculum and the constitution of Pakistan also emphasizes on the issue (Ullah & Skelton, 2014). However, it is pertinent to mention here that despite the Punjab Education Sector Reform Program 2003-05 and provincial plan for action on EFA 2003-2015 commitment gender equality, gender bias in textbooks continue to exits (Khurshid, Gillaniz & Hashmi, 2010). It is very dismaying that neither the review of the implementation status of the NEP 2009 by Minister of Federal Education and Professional Training (MoE & PT, 2015) nor the Consultation Meeting on the National Education Policy took place in AJK in 2016, considered gender bias in textbooks a serious concern. Hence, this inattention of state towards gender bias in textbooks provided a compelling reason to undertake a research to investigate the extent of gender bias prevailing in Mathematics textbooks used in primary schools of AJ&K.

2. Literature Review

Gender bias in children learning material /textbooks is not a new issue. Since earlier studies by second wave feminists in the 1970s, the issue of gender bias or gender representation in multiple types of school textbooks, children learning materials across societies has been extensively researched and debated the world over (Crabb, & Bielawski, 1994; Skelton, 1997; Clark, & Mahoney, 2004; Oyebola, 2003; Carthon, 2003; McDonnell, 2007; Plumm, 2008; Mustapha, 2012; Ghavbavi & Mousavi, 2012; Zilimu, 2014; Ullah, 2013, Ullah & Haque 2016). Studies on gender bias in school textbooks in the global north and global south have unpacked that there are more men/boys characters than women/girls (Ullah, Ali & Naz, 2014). Studies on gender representation in children's literature have revealed some signs of improvement since Weitzman *et al.'s* classic study more than 35 years ago (Mccabe, Fairchild, Grauerholz, Pescosolido & Tope, 2011).

Nevertheless, recent research studies across nations continue to claim the stereotypical and underrepresentation of women and girls in children books (Ullah & Skelton 2012; Skelton, 2011). Clark and Mahoney (2004), Clark and Keller (2005) in the United States of America; Skelton (1997; 2006; 2011) in the United Kingdom; Eilard,

(2004) in Sweden; Jassey (1998) in Japan; Chen and Chen (2002), Yi (2002), Guo and Zhao (2002) in China, Miroiu (2004) in Romania; Ellis (2002) in West Bengal, Alrabaa (1985) in Syria, Ahmed (2006) in India; Mirza (2004), Ullah (2007; 2013; 2014; 2016) and Khurshid et., al (2010) in Pakistan concluded that school materials represent males and females in a highly gender-stereotypical ways in the private as well as in the public domains, and in the actions, attitudes and traits portrayed.

The findings of nearly all content analysis of school textbooks across societies concluded that males out number females in children learning material (Skelton 1997; Ullah, 2013). Similarly, discourse analysis revealed that men spoke more, spoke first, more often and more frequently than women in conversations with the members of their gender. Men are depicted superior and women inferiors-and men exercise power over women. The crux of the past and present studies on gender bias in textbooks is that gender bias in textbooks is nearly a universal and quite persistent issue. Taking this as a point of departure sociologists of education believed and still claim that the study of gender bias in textbooks is an important education issue. It is one of the key obstacles on "the road to gender equality" (Blumberg 2008, p. 346).

The representation of gender in school textbooks has been investigated in different contexts including Pakistan and attention has been given to compulsory textbooks including English, Urdu and Pakistan Studies. However, in this paper we aim to analyze gender bias in Mathematics textbooks, which are important instruments used in teaching and learning at all levels of education in the schools of AJ & K. Like social studies and language textbooks, mathematics textbooks are taught to students as compulsory subjects from class 1 to 10. These are equally powerful representations of the curriculum and the pedagogical practices at all levels of education. Mathematics textbooks like language and social studies are ideologically invested and carry gender biases.

Moroava and Novotna, (2013) argued that Mathematics textbooks are embedded with gender discrimination in the form of

stereotypical roles, omissions, or degradations. Students spend a considerable time in school using mathematics textbooks. One of the reasons for analyzing gender bias in mathematics textbooks was that many studies i.e., Ullah (2013; 2016), Kurshid et al, (2010); Mirza (2004) have examined gender bias in Social Studies, Urdu and English Language textbooks in Pakistan. We have not come across a single study focusing on gender bias in mathematics textbooks in Pakistan, especially in AJK. This study raised the voice that the analysis of Mathematics textbooks along the axis of gender is an important issue and need regular sophisticated feminist analysis. Thus, our assertion is that the importance of mathematics textbooks in education process makes it necessary that gender biases in mathematics textbooks need to be examined in the context of AJ&K.

3. Significance of the Study

This study has theoretical and practical significance. Theoretically, the study findings refresh the debate that gender biases and stereotypes are still embedded into AJ&K textbooks. It is pertinent to mention here that gender biases in mathematics textbooks are least examined phenomena in the AJ&K context. The findings significantly contribute to the existing scholarship in the sociology of education by highlighting the prevalence of gender biases in Mathematics textbooks. The study is of immense importance for curriculum designers and textbooks writers. They can use the study's findings to address the issue of gender stereotypes in the textbooks and guide them how to address gender issue in textbooks in general and in the Mathematics textbooks in particular. The study findings is also a good reading material for students and teachers in the field of sociology, education, gender, anthropology and other social sciences.

4. Research Methodology

The research on which this paper is based is quantitative and qualitative content analysis of 05 mathematics textbooks (from grade 1 to 5). We employed content analysis to examine gender bias in mathematics textbooks from grade 1 to 5 by following the general approach of content analysis used by second wave feminists for the analysis of school textbooks (Ullah 2013; Skelton 2006). Following

the content analysis traditions of second wave feminists we scanned the textbooks to count male and female characters in the texts and pictures. We have examined the gender stereotypes in examples and mathematical questions.

It is pertinent to mention here that we did not restrict the analysis simply to quantitative content analysis, but also employed qualitative content analysis. Employing qualitative content analysis (CA) we went beyond simple counting characters and gender roles in text but attempted to "understand the broader social reality and context" (Zhang & Wildemuth 2009 cited in Ullah & Skelton 2013: 186). Doing qualitative CA, textbooks were scanned to highlight "dominant pattern of gender construction and relations" (Ullah and Skelton 2013, p.186). We did this with the belief that the representation of males and females in stereotypical gender role contribute to the construction of gender identities (Davies, 1989). By doing Quantitative and qualitative content analysis, the study unpacked that mathematics textbooks are embedded with gender bias text and pictures like language and social studies textbooks. This will be further revealed in the findings section below.

5. Results and Discussions

The Numerical Imbalance between Female and Male in Mathematics Textbooks

The unequal representation of females and males in textbooks continue to exist despite curriculum reform efforts in Pakistan and AJ&K (Ullah, 2016). The count of male and female specific names, pronouns, pictures in the mathematics textbooks shows that men/boys outnumber women/girls in mathematics textbooks in AJ&K.

Table 1 Women/girls underrepresentation in mathematics textbooks

Books	Male	Percentage	Female	Percentage	Total
Book 1	10	42	14	58	24
Book 2	32	59	22	41	54
Book 3	21	57	16	43	37
Book 4	37	64	21	36	58
Book 5	53	72	21	28	74
Total	153	62	94	38	247

Mathematics textbooks from class 1 to 5 carry a total of 247 human characters (153men/boys and 94 women/girls). The ratio of men/boys to women/girls is 62; 38 percent. Males outnumber females in all the studied textbooks except book-1. It is vividly clear that women suffer lower visibility (Gershuny, 1977; Hartman & Judd, 1978; Ullah, 2013).

Reinforcement of Gender Stereotypical Roles

Similar to findings from past studies (i.e., Clark & Keller, 2005; Skelton, 2006; 2011; Ullah & Skelton 2012) analysis unpacked that men and women are represented in stereotypical gender roles. Men are represented in a wide variety of activities and roles traditionally considered masculine (i.e., business, driving etc.) whereas women are dominantly depicted in house chores (cooking, cleaning, childcare, sewing etc.). Table 2 gives a vivid picture of the prevalence of gender stereotypical role in mathematics textbooks.

Table 2 Representation of Gender Stereotypical Roles

Gender Representation	Men	Women
Donations	3	1
Earning money	16	6
Purchasing grocery, cloths and other durable goods	34	13
Painting, drawing and packing gifts	3	3
Doing Business	3	2
Cooking and Cleaning	0	6
Going for Walk, Playing indoor and outdoor games	12	5
Constructing Building	3	1
Driving car/bus/van	4	1
White collar jobs in Public domain	4	0
Total	82	38

Broadly speaking, we counted ten (10) activities in which men and women were engaged. Eight (8) activities were found which were common among boys and girls. The analysis revealed men's engagement not only in a wider range of activities compared to women, but they seem to be engaged in activities which are

considered masculine (belonging to the public domain). Women, on the other hand, are represented in limited number of 'feminine' activities such as cooking, caring and teaching children, decorating house, purchasing clothes etc. This vivid gender division in the Mathematic textbook is indicative of the fact that strategically young boys and girls are given persistent messages through school textbooks "to develop gender identities and learn about gender expectations" (Ullah, 2013, p.237). This strict gender division of labour in textbooks contributes to pupils' understanding of what it means to be a men or woman (Mccabe *et al.,* 2011).

Women in the Traditional Feminine Roles: Reproduction of Gender Boundaries

As discussed earlier in this paper, Mathematic textbooks, like Social studies, Urdu and English, reinforce the stereotypical gender role /gender division of labour in society. Skimming the contents of the Mathematics textbooks revealed that the activities of public domain are dominantly associated with men and that of the private domain with women. Throughout the selected textbooks, the task of cooking is associated with women. We did not come across a single example where men were depicted as cooks, either at home or in the public domain.

Surprisingly Mathematical problems in the textbooks have been presented with gender stereotypical statement such as a) "Sadia prepared *biryani* in 54 minutes and *haleem* in 2 1/10 hours. How much total time was taken to prepare two dishes"? b) "Hina started cooking at 11 am and finished at 1 pm. Find how many hours did she spend in cooking." In addition to cooking, chores such as looking after children's homework and their after-school activities were presented as women's key responsibilities. One of the many instances is cited here as to substantiate our argument. "Amina spends 2 hours in teaching her children daily and 3 hours in cooking. Find how many total hours she spends daily in these tasks". Such messages legitimize cooking and teaching to children at home as women natural role (Ullah, 2013; 2016).

The representation of women in the public domain, we argue, is symbolic and appendix. By symbolic and appendix, we mean that they have been depicted in shopping for the family and kitchen-activities

considered an extension of women's domestic roles. Mathematics textbooks are full of discourses that depict women predominantly occupied in such roles. Some of these are listed here for further clarity; (a) 'Hafsa bought 1.1/2kg of rice. She cooked 5/7 of them. How much rice she cooked"? b) "On Eid day Fatima purchased 13kg and 28kg chicken. She used 7kg and 493g chicken in cooking *biryani*. Find the remaining amount of chicken", c) "Rimsha purchased a dress of Rs 750 and a pair of shoes in Rs 248. Find the total amount she spent", d) "Aiman purchased 5m of cloth to make cushion cover. 3.75m of the cloth was used to make all the covers. How much cloth was left"? e) "Arsala used 4.50m lace to decorate bed cover. To decorate 12 more bed covers how much lace will be required"? f) "Munazza purchased 855g sweets. She gave 350g sweets to her sister. Find that how much sweets are left with Munazza", g) "2m and 86cm lace is used for Amna's shirt and 11m and 15cm lace is used for Hamna's dress and dupatta", h) "Sara bought 24cm long ribbon for her shirt and 39 cm long ribbon for her dupatta. Find the total length of the ribbon which Sara bought", and i) Earfa made handbags for her shop which costs Rs 899.95. She got an order of 30 such handbags. What will be the cost to make 30 such handbags"? Clearly these examples illustrate that household chores are relegated as feminine activities.

In addition to shopping and taking care of kitchen activities there are several other household chores that are considered purely feminine. These include emotional labor such as taking care of the feelings of relatives and family members, making them comfortable, living up to the expectations of the extended family, adherence to social norms and finally exchange of gifts among family, relatives and friends. The selected textbooks included several examples that portrayed women engaged in such activities. One of the several discourses, which depicted women exchanging gifts and caring for the family, is presented here to substantiate our argument. "Sumaya parceled Eid gift to her brother and sister one parcel weighs 1.50kg and the other weighed 2.28kg. Which parcel was heavier and how much." We did not find a single example that shows men exchanging gifts with the family members, relatives or friends.

Likewise, painting, drawing, home decoration are considered feminine activities and therefore associated with women. Throughout the textbooks, home decoration and painting etc. are presented as women's job i.e., "Zahida wants to draw square patterns on a rectangular sheet of paper. Find the maximum possible length of a side of each pattern if the dimensions of a paper sheet are 12 cm and 20 cm". Another discourse demonstrates: "Zara has a proper sheet 32 cm long and 24 cm wide. She wants to make small pieces of paper of square sheet. Find the maximum possible length of a side of each small piece of square shape such that no part of the paper sheet is to be wasted. "These statements may seem trivial to many yet drawing on feminist poststructuralist theory, it can be argued that these statements are ideologically invested and communicate very strong message about what it means to be a boy/man or girl/woman. Textbooks knowledge, as argued by Ullah (2013) serves males' purpose and interest.

Men Representation in the Traditional Masculine Roles

The selected Mathematics textbooks present public domain as men's prerogative. Men have been depicted in a wide range of activities, i.e., driving, purchasing, selling, constructing, painting, banking, business etc. The representation of men in these activities communicates an explicit and implicit message to young children that what it means to be a male and female in the context of AJ&K. Some of the discourses from the textbooks are cited here to buttress our argument.

Discourses (1) (2) and (3) below vividly show that business is men's job and women have nothing to do with it. Discourse 1: "There are 258 horses in Sajid's farm house. 216 horses are sold. Find how many horses he has now." Discourse 2: "A milk man has 125l milk. 83l milk has been sold. Find how much milk is left with him." Discourse 3: "Mr. Saad, Mr. Waleed and Mr. Akram are the three-business men of Turkey. They import textile products from Pakistan. For this purpose, they come to Pakistan regularly after 12, 15 and 20 days respectively. If they came on the 20^{th} of March together, after how many days they will visit Pakistan together again.

Similarly, men in the selected textbook shave been depicted as sellers and buyers of durable goods, building and plots. The pre-

dominance of men as sellers and buyers reinforces the stereotypical beliefs that men purchase and sell with an utilitarian and more logic based approach (The conscious pursuit of an intended consequence and making decision with facts), whereas women shop with hedonic motives (women purchase things because they love them). Thus, selling and purchasing is men's job as it requires reasons and not emotions. In what follows Discourse (4), Discourse (5), Discourse (6), Discourse (7), Discourse (8), Discourse (9), Discourse (10) demonstrate the engagement of men in the sale and purchase of durable goods.

Discourse (4): Faisal bought a house for Rs 836703 and some furniture for Rs 29653. How much money does he spend altogether?

Discourse (5): Nazir Hussain purchased a rectangular plot whose length is 119.75 meter and breadth is 112.25 meter. Find the area of the plot to two decimal places.

Discourse (6): Ahmad bought 40kg 565g of flour and Raheel bought 30kg 609g of flour.'

Discourse (7): Abdullah bough 7.11 kg of sugar and he puts it in 9 jars in equal quantity. How much sugar he would put in each jar?'

Discourse (8): Abrar wants to purchase a motor car for his personal use. The price of the car is Rs.600000. He has an amount equal to ¾ of price of a car in his bank account.

Discourse (9): A man purchased a new car for Rs.1835000 and sold it at 10% loss. Calculate his loss."

Discourse (10): A man purchased a house for Rs. 2475000 and sold it at 10% profit. Calculate his profit.

The selling and purchasing of goods with an utilitarian and profit motives are also vividly clear from the following discourses

Discourse (11):"A shopkeeper earns 40% profit on a pair of shoes. Find the profit if the cost price of that pair of shoes is Rs.700."

Discourse 12):"A shopkeeper earns 15% profit. Calculate his profit on a refrigerator whose cost price is Rs.24500." Contrarily, not a single woman is supposed to earn the profit.

Additionally, throughout the textbooks driving trucks, buses and cars have been depicted as men's prerogative. We did not come across a single woman driver either in the texts or pictures. Discourses (13) & (14) & (15) communicate a powerful message that driving, irrespective of heavy and light vehicles, is masculine activity and can be done by men only. Similarly, discourse (15) conveys a strong message that traveling and excursion is males' activity.

Discourse 13: "Farhan drove 5 hours in the morning and 2 hours in the evening. How much more time did he drive in the morning?"

Discourse 14: "Usman drives the car at the speed of 21.63 km per hour. How many kms does he drive in 8 hours?"

Discourse 15: "Ahsan took 4hrs 35 min to travel from Lahore to Islamabad and 3 hrs20min to return from Islamabad to Lahore. How much more time he took in his initial journey as compared to his return journey?"

Similarly, the selected Mathematics textbooks depict banking and dealing with currency as men's activities. This is evident from the following discourses.

Discourse (16): "Azmat and Asad have Rs 54362 and Rs 46895 in their bank accounts respectively. How much money do they have altogether?"

Discourse (17) "Abdullah has Rs.235960015 in his bank account. He deposits Rs.1574653 more in his account. Find the total balance."

Discourse (18) "Ehtisham has Rs. 842000 in his bank account. Calculate amount he would have to pay as zakat after 1 year."

> Discourse (19) "Arshad Mehmood has 567000 in his bank account. Calculate the amount of *zakat* he would have to pay after 1 year."
>
> Discourse (20) "Talha had Rs 896503 in his bank account. He donated Rs. 673421 for flood relief. How much money is left in his bank account?"

It is evident from our everyday lived experiences that construction is a task relegated to men. An overwhelming majority of construction workers including engineers as well as laborer are men. This domination of men in the field of construction is not divine but socially constructed through state apparatus, education being one of these apparatuses. The representation of men in the construction field communicates a strong message to young boys and girls that the field of construction belongs to boys/men. Discourse (18) is one of the several examples that we quote here from the textbooks. Discourse 21: "12 men can build a house in 24 days. In how many days can 18 men build the same house?"

In additions to business, banking, driving, construction, the selected textbooks also represent men as farmers. Though women too equally contribute in agriculture in Pakistan but since farming involves physical exertion hence men are deemed more fit to execute farming as a profession. This is highlighted in the discourse given below.

Discourse (22):"a farmer grew 105684 kg carrots in first year and 53223 kg carrots in second year. How much more carrots did he grow in second year"; painters-"an artist spends 1 2/5 hours to make a painting and 108 minutes to make another painting. How much time did he spend to make two paintings?"

To sum up the findings from this study it is clear from the quantitative content analysis of the data and qualitative content analysis of the selected discourses that gender stereotypes in textbooks still persist. Females are represented in the traditional feminine roles, dominantly in the private domain of home whereas men have been shown engaged in a wide range of activities in the public domain.

6. Conclusion

This study examined gender representation in primary level school Mathematics textbooks currently used in AJ&K schools. The overall conclusion of the study is that Mathematics textbooks reinforce the public and private divide of the social world, associating public with men and private with women. The study findings are similar to the findings of previous studies on gender representation in textbooks; including Mathematics textbooks (Ullah, 2011; 2013; 2016; Zakka, Oluyemi & Twaki, 2015). The study, thus, updates researchers, academicians and policy makers that stereotyping and women/girls underrepresentation in textbooks in general and Mathematics textbooks in particular still persists. This needs a serious attention by curriculum developers and textbooks authors so that gender stereotyping through textbooks can be eliminated to avoid further harm to future generations.

References

Ahmed, F. B. (2006). Male Bias in School Texts'. *The Tribune* Online Edition. Chandigarh, India (February 26). Retrieved on August 25, 2011.

Alrabaa, S. (1985). Sex division of labour in Syrian school textbooks. *International Review of Education*, *31*(1), 335-348.

Blumberg, R. L. (2008). The consequences of women's economic empowerment vs. disempowerment: From the "magic potion" for development to the "four horsemen of the Apocalypse"? Paris: UNESCO. Report, December. Presented at UNESCO conference, Bangkok, February 2009.

Carthon, J. T. (2005). *Representation of gender in middle grades mathematics textbooks used in southwest Georgia.*

Clark, R., Allard, J., & Mahoney, T. (2004). *How much of the sky? Women in American high school history textbooks from the 1960s, 1980s and 1990s. Social Education, 68(1), 57-63.*

Clark, R., Ayton, K., Frechette, N., & Keller, P. J. (2005). Women of the world, re-write! Women in American world history high school textbooks from the 1960s, 1980s, and 1990s. *Social Education*, *69*(1), 41-46.

Crabb, P. B., & Bielawski, D. (1994). The social representation of material culture and gender in children's books. *Sex roles, 30(1-2),* 69-79.

Ellis, J. (2002). Strengthening subservience: Gender bias in West Bengal school textbooks. *Manushi, 23-24.*

Gharbavi, A., & Mousavi, S. A. (2012). A content analysis of textbooks: Investigating gender bias as a social prominence in Iranian high school English textbooks. *English Linguistics Research, 1(1), 42.*

Gershuny, H. L. (1977). Sexism in dictionaries and texts: Omissions and commissions. *AP Nielsen et al*, 161-179.

Guo, Z., & Zhao, T. S. (2002). Lattice Boltzmann model for incompressible flows through porous media. *Physical Review E*, *66*(3), 036-304.

Hartman, P. L., & Judd, E. L. (1978). Sexism and TESOL materials. *Tesol Quarterly*, 383-393.

Jassey, A. (1998). Gender in Elementary School Texts' J*apan Quarterly, 45,* 87-93.

Khurshid, K., Gillaniz, I. G., & Hashmi, M. A. (2010). A Study of the Representation of Female Image in the Textbooks of English and Urdu at Secondary School Level. *Pakistan Journal of Social Sciences (PJSS)*, *30*(2).

McCabe, J., Fairchild, E., Grauerholz, L., Pescosolido, B. A., & Tope, D. (2011). Gender in twentieth-century children's books: Patterns of disparity in titles and central characters. *Gender & society*, *25*(2), 197-226.

MacDonell, C. (2007). *Project-based inquiry units for young children: first steps to research for grades pre-K-2*. ABC-CLIO.

Ministry of Education, (2003). National plan of action on education for all 2001-2015. Islamabad: Government of Pakistan.

Ministry of Education, (2008). Draft document: National education policy 2008. Islamabad: Government of Pakistan.

Miroiu, M. (2004). *The way to autonomy. Feminist political theory, I*aşi: Polirom Publishing House.

Mirza, M. (2004). Gender analysis of school curriculum and text books. *Islamabad: UNESCO*.

Mustapha, S. (2012). Gender equality in and through education in Nigeria: Gender representation in learning materials.

Oyebola, O. (2003). Gender issues in textbook development: A study of gender balance in illustrations of selected textbooks for upper primary level. *ILORIN Journal of Education*, *22*, 1-7.

Plumm, K. M. (2008). Technology in the classroom: Burning the bridges to the gaps in gender-biased education?. *Computers & Education*, *50*(3), 1052-1068.

Ping, C., & Weiling, C. (2002). Separated by one layer of paper: Some views about the inferior position of girls in the study of elementary school arithmetic. *Chinese Education & Society*, *35*(5), 23-33.

Skelton, C. (1997). Revisiting gender issues in reading schemes. *Education 3-13*, *25*(1), 37-43.

Skelton, C. (2011, September). Gender and reading schemes. In *British educational research association annual conference, September* (pp. 6-8).

Skelton, C. (2006). Boys and girls in the elementary school. *The SAGE handbook of gender and education*, 139-151.

Ullah, H., & Haque, H. (2016). The Representation of Boys' and Girls' Activities in School Textbooks. *FWU Journal of Social Sciences*, *10*(1), 81.

Ullah, H. (2006). *Engendering human bodies through different forms of knowledge in contemporary NWFP* (M.Phil Thesis), Quaid-e-Azam University, Islamabad, Pakistan.

Ullah, H. (2007). Gender and Curriculum: Patriarchal Hegemony through Curriculum in Contemporary N.W.F.P. *Biannual Journal Gender and Social Issues, 6*(2), 35-46.

Ullah, H. (2013). *Reproduction of Class and Gender Hierarchies through Education in Khyber* Pakhtunkhwa (Ph.D Thesis). University of Peshawar, Pakistan.

Skelton, C. (2011, September). *Gender and Reading Schemes*. Paper Presented at the British Educational Research Association Annual Conference, Institute of Education University of London.

Ullah, H. (2014). Social Reproduction of Gender Hierarchies in Sports through Schooling in Khyber Pakhtunkhwa, *Asian Pacific Journal of Education*, *36*(1), 131-144.

Ullah, H., & Skelton, C. (2013). Gender Representation in the Public Sector Schools Textbooks of Pakistan. *Educational Studies*, *39*(2), 183-194.

Ullah, H., Ali, J., & Naz, A. (2014). Gender Representation in Children's Books: A Critical Review of Empirical Studies. *World Applied Sciences Journal*, *29*(1), 134-141.

Ullah, H., Khan, A. N., Khan, H. N., & Ibrahim, A. (2016). Gender Representation in Pakistani Print Media-A Critical Analysis. *Pakistan Journal of Gender Studies*, *12*, 53-70.

Jin, Y. (2002). A Discussion on the Reform of Elementary School Social Teaching Materials from the Angle of Gender Analysis. *Chinese Education & Society*, *35*(5), 63-76.

Zakka, Z. M., Oluyemi, S., & Twaki, G. (2015). Analyzing Gender Representation in Primary 5 and 6 Mathematics Textbooks in Nigeria. *International Journal of Educational Studies*, *2*(2), 109-114.

Zhang, Y., & Wildemuth, B.M. (2009). Qualitative Analysis of Content. In Applications of Social Research Methods to Questions In Information And Library Science, Ed. B. Wildemuth, 308-19. Westport, Ct: Libraries Unlimited.

Zilimu, J. A. (2014). *Exploring the Gender Gap in Tanzanian Secondary School Mathematics Classrooms*. University Of Illinois at Urbana-Champaign.