

DEPICTIONS OF THE GENDER ROLES IN ELEMENTARY LANGUAGE ARTS AND MATHEMATICS TEXTBOOKS IN 1940'S ~ 1950'S AND THE PRESENT.

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Introduction

For children, school textbooks are among their first cultural encounters. Since textbooks present an occupational and social picture of the outside world to children, representation of gender roles in elementary textbooks plays an important role to establish children's gender awareness and self-esteem.

In this paper, depictions of the gender roles in elementary textbooks were examined and discussed. Two academic subjects, language arts and mathematics were chosen. In each subject, the textbooks, used in around 1940's to 1950's were contrasted with the textbook used in the present. In order to demonstrate depictions of the gender roles in elementary textbooks, the following procedures were taken: (1) summary of three contemporary education texts on the subject of gender roles in the elementary textbooks; (2) description of my own research project; (3) presentation and analysis of research findings from elementary language arts textbooks; (4) presentation and analysis of research findings from elementary math textbooks; and (5) discussion of depictions of gender roles in textbooks. Throughout this paper, the following questions are discussed: (1) Are any distorted or stereotyped gender roles presented in the textbooks? (2) If so, are there any improvement in stereotyped depiction of gender roles through time? (3) How do stereotyped depictions of gender roles in the textbooks affect elementary school children? (4) How can textbooks be improved?

Summary Of Research Findings From Contemporary Education Texts On The Subject Of Gender Roles In The Elementary Textbook

Pottker's (1977) research on elementary language arts textbook analyzed 20 third-grade readers (1969-70 school year), which contained approximately 2000 stories, for personality and occupational stereotypes of females (111). Pottker found that the female characters in the textbooks reflect the characteristics of the most feminine woman imagined by being appreciative, affectionate, charming, attractive, understanding and considerate. As Pottker calls "Little sister syndrome" (113), females were helped out of tough situations and many problems by "big brothers" in the stories, since males were portrayed as smarter and with greater achievement. In family context, the mother was shown to be weak and passive, who was dependent upon her husband's aid, whereas the father was portrayed as a firm figure and a master of his house.

In 20 textbooks, only sixteen different jobs for women existed, and not one married women worked, while men were portrayed in over 90 different jobs (118). Pottker compared occupations of women in the textbooks with the occupations of American women in the labour force. The comparison clearly reveals sex stereotyped job descriptions of women in the textbooks. About 57% of the women in the textbooks were homemakers, which is about 20% more than there were in the real US labour force in the 1970 (116). Among working women in the textbooks, 42% of them were elementary school teachers, while only 6.1% of working women in the US were elementary school teachers (116). Pottker claims that the occupational status of women in elementary school reading textbooks does not accurately reflect the real occupational status of women in the United States.

Winifred's (1977) research on elementary math textbook analyzed sex stereotyped descriptions from 12 elementary math textbooks for Grades 2, 4, and 6, and obtained similar findings to Pottker's research. Winifred found stereotypical activities among boys, girls, men, and women. For example, boys play with cars, boats, and

rockets, and they also take part in baseball and football games. Fathers earn money and enjoy outdoor activities, such as fishing and camping. In contrast, girls play with dolls, jump rope, practice piano, and help their mothers with the grocery shopping, cooking, baking, and sewing (145). Girls and their mothers serve meals for their father/husband and brothers/sons.

As for occupation status in the textbooks, 86 occupations for males and only 18 for females were found in the textbooks. For men, the jobs "literally ranged from A to Z, from acrobat to zoo keeper" (144). In between, there were "the astronaut, doctor, inventor, lawyer, mathematician, president, scientist, weatherman, and men who perform services in the community" (144). In contrast, none of above male occupations appeared on the list of occupations for females, which includes "a buyer, cafeteria manager, cook, dressmaker, doughnut maker, journalist, librarian, nurse, queen, and ticket seller" (144). Therefore, Winifred concludes that even in math textbooks, sex bias and sex stereotypes are presented through pictures and story questions.

Willis' (1995) research on elementary math textbook was done much more recently than Winifred's, however, boys, girls, men, and women were still portrayed with stereotypical distortions. Willis examined how males and females were presented in Grade 3 math textbooks in Australia. She found that roughly equal numbers of boys and girls appeared as main characters in the stories and activities; however, there were 49 male characters as presenters, but only 25 female presenters (270).

As for occupational status, men in the textbooks were "computer operator, postman, mountaineer, greengrocer, farmer, news agent, teacher, grocer, gardener, fruitier, bank teller, ports store proprietor, wood cutter, car salesperson, service station proprietor, and father" (270). Although men were occasionally called 'Dad,' they were mostly named and described in terms of their jobs. On the other hand, women in the textbooks were "shop assistant, cook, confectioner's shop worker, greengrocer, farmer, news agent, teacher, florist, mother, grandmother" (270). Unlike men, women were referred to as, 'Mom,' 'Grandma' or someone's wife, and they were rarely named. Thus, Willis claims that even very contemporary math textbooks provide distorted images of men and women.

Description of my research project

Two Grade 4 academic subjects of textbooks, language arts and mathematics were examined. In each subject, the textbooks used around 1940's to 1950's were contrasted with the textbook used in the present. In order to demonstrate the gender roles in these textbooks, the following four factors were looked at in both texts and illustrations: (1) number of boys, girls, men, and women in the textbooks; (2) number of occupations for men and women that appeared in the textbooks; (3) types of occupations for men and women; and (4) activities that boys and girls were engaged in the textbooks.

Language Arts

With regard to the number of boys, girls, men and women portrayed in both old and current language arts textbooks, Table 1 shows no significant difference.

	1940's ~ 1950's		Present	
Title of the textbooks (year)	<i>Friends and Neighbours</i> (1946)	<i>Language Journeys</i> (1952)	<i>A Lizard to Start with</i> (1979)	<i>Tickle the Sun</i> (1988)
Boys	8	36	13	22
Girls	11	33	8	17
Men	9	14	16	17
Women	4	16	13	17 25

Table 1. Number of boys, girls, men and women in the textbooks

There is, however, a remarkable difference in the number of occupations for men and women in the old textbooks. Although there is some improvement in the present textbooks, where the number of occupations for women has increased, men's occupations appeared far more than women's.

	1940 ~ 1950's		Present	
Title of the textbooks (year)	<i>Friends and Neighbours</i> (1946)	<i>Language Journeys</i> (1952)	<i>A Lizard to Start with</i> (1979)	<i>Tickle the Sun</i> (1988)
Men	6	6	8	9
Women	3	2	4	4

Table 2. Number of occupations for men and women that appeared in the textbooks

Also striking were the types of occupations for men and women found in the old textbooks. The majority of women were either stay-at-home housewives or unmarried elementary school teachers. These findings imply that girls have only two choices: motherhood or a career woman who remains single.

In the current textbooks, some improvement is shown in terms of women's occupations. Women in the textbooks were engaged in various professional jobs, such as a scientist and a veterinarian. The textbook, *Tickle the Sun* (1988), contains a chapter that deals with an interview with a female veterinarian. As well, *A Lizard to Start with* (1979) contains an illustration of a female engineer with the sentence, "Engineers work with numbers when they build a bridge or design a jet . . ." (164). On the other hand, in the same textbook, the sentence "Mother tried

to cheer Benjy with an apple pie" (54) shows that the role of mother as a server still persists. Furthermore, no working mothers were found in any textbooks.

Title of the textbooks (year)	<u>1940 ~ 1950's</u> <i>Friends and Neighbours (1946) & Language Journeys (1952)</i>		<u>Present</u> <i>A Lizard to Start with (1979) & Tickle the Sun (1988)</i>	
	Occupation	Number	Occupation	Number
Men	farmer principal fireman postman secretary of PTA clown street car driver elephant trainer potato seller construction worker	3 2 1 1 1 1 1 1 1 1	mayor farmer fortune teller shop owner Judo instructor TV commercial maker artist police man scientist professor sea captain crossing guard	3 2 1 2 1 1 1 1 1 1 1 1
Women	teacher "Miss" housewife candy shop owner	4 many 1	teacher "Miss" principal artist engineer housing inspector scientist vet	1 1 1 1 1 1 1

Table 3. Types of occupations for men and women

With regard to the type of activities that boys and girls are engaged in, stereotypical activities were found in the old textbooks; boys were engaged in sports and active games, whereas girls were engaged in quiet activities. Furthermore, most of the time boys and girls did their activities separately from each other. In the current textbooks, however, girls were engaged in more active activities with boys.

Title of the textbooks (year)	1940's ~ 1950's <i>Friends and Neighbours</i> (1946) & <i>Language Journeys</i> (1952)	Present <i>A Lizard to Start with</i> (1979) & <i>Tickle the Sun</i> (1988)
Boys	sports: softball, hockey, baseball, skating, watching a hockey game outdoor: fishing, <i>making snowman</i> playing with a model airplane building a sail boat playing with fire	sports: Judo, fishing with his dad, <i>basketball</i> outdoor: camping, <i>playing on the beach</i> playing as a detective indoor: <i>making pancakes</i>
Girls	outdoor: picnic, <i>making snowman</i> playing with a doll	sports: <i>playing basketball</i> outdoor: playing as a detective <i>playing on the beach</i> indoor: <i>making pancakes</i>

Table 4. Activities that boys and girls were engaged in (activities that are written in italics indicate that boys and girls play together)

Mathematics

Results that were obtained from the old and the present math textbooks were significantly similar to the ones from the language arts textbooks, discussed above, in terms of the number of boys, girls, men and women in the textbooks (Table 5) and the number of occupations for men and women that appeared in the textbooks (Table 6).

Title of the textbooks (year)	1940 ~ 1950's		Present	
	<i>Study Arithmetics 4</i> (1940~1950's)	<i>Study Arithmetics 6</i> (1940~1950's)	<i>Math Quest 4</i> (1986)	<i>Journey in Math 4</i> (1987)
Boys	38	30	79	149
Girls	29	26	66	152
Men	43	46	28	19
Women	37	19	12	13

Table 5.

	1940 ~ 1950's		Present	
Title of the textbooks (year)	<i>Study Arithmetics 4</i> (1940~1950's)	<i>Study Arithmetics 6</i> (1940~1950's)	<i>Math Quest 4</i> (1986)	<i>Journey in Math 4</i> (1987)
Men	8	11	26	12
Women	2	2	8	6

Table 6.

In *Study Arithmetics Book 6* (1940's ~ 1950's), men's and women's roles were clearly contrasted by displaying a man's picture and a woman's close to each other. For example, a picture of a boy and his father in the textbook was described as "During the winter Ray helped his father make plans for spring on their farm . . ." (145). In contrast, a picture of a girl and her mother was described as "Mrs. Wilson saved the fat from meat she cooked . . ." (147).

In the current textbooks, two types of strategies are found. First, the various types of women's jobs were introduced in the textbooks. For example, in *Journeys in Math 4* (1987), the illustration of a female carpenter was provided for the following math question: "A carpenter is making benches and 3-legged stools. *She* has 31 legs that can be screwed into seats. How many stools and benches can she make?" (317). The other strategy is to avoid using human characters. In *Math Quest 4* (1986), various kinds of animals, from Garfield to dinosaurs, were illustrated.

Title of the textbooks (year)	1940 ~ 1950's <i>Study Arithmetics 4 & 6</i> (1940~1950's)		Present <i>Math Quest 4</i> (1986) & <i>Journey in Math 4</i> (1987)	
	Occupation	Number	Occupation	Number
Men	farmer store owner sales clerk engineer driver surveyor meteorologist apartment manager forester company owner freight agent bank teller bus driver milk seller baker	8 6 4 2 1 1 1 1 1 1 1 1 1 1 1 1	teacher sports player astronaut shop owner photographer farmer cook baker painter detective magician forester driver librarian fireman	3 3 2 2 2 2 2 2 2 2 2 2 1 1 1
Women	teacher "Miss" housewife	7 many	teacher "Ms/Mrs." carpenter professor cashier ticket seller office worker pharmacist guitarist	3 2 1 1 1 1 1 1

Table 7. Types of occupations for men and women

In *Study Arithmetics Book 6* (1940's ~ 1950's), boy's and girl's activities were clearly contrasted again, by displaying a boys' picture and a girls' picture close to each other. For example, a picture of boys in the textbook was described as "The boys who were making boats in the school shop had to be careful not to waste any nails . . ." (125). In contrast, a picture of girls was described as "While the boys worked in the school shop, the girls learned how to sew . . ." (131).

In the present textbooks, boy's and girl's activities are more mixed. Boys were sometimes involved in baking and helping mother, while girls were sometimes actively involved in sports.

	1940's ~ 1950's <i>Study Arithmetics 4 & 6 (1940~1950's)</i>	Present <i>Math Quest 4 (1986) & Journey in Math 4 (1987)</i>
Boys	sports: softball, hockey, baseball, roller skating, swimming, soccer outdoor: horseback riding, cycling, fishing playing with a model airplane wood work: making a boat, building a house painting, farming: tree planting	sports: baseball, hockey, <i>cycling, table tennis, swimming</i> outdoor: camping, <i>playing marble, making a sand castle</i> , playing with a model car fishing, <i>snow sleigh</i> indoor: <i>baking</i> house chore: washing dishes, grocery shopping indoor: computer
Girls	outdoor: picnic, <i>making snowman</i> playing with a doll house chore: baking, grocery shopping, sewing, making candy, knitting, preparing dinner, baby-sitting practicing the piano	sports: baseball, <i>table tennis, swimming, gymnastics, cycling, snow sleigh</i> outdoor: water sliding playing as a detective <i>playing marble, making a sand castle</i> , horseback riding house chore: baking indoor: playing with a doll. <i>making pancakes</i>

Table 8. Activities that boys and girls were engaged in (activities that are written in *Italic* mean boys and girls play together)

Discussion and Conclusion

The findings from this project are not significantly different from those of Pottker, Winifred, and Willis. In both language arts and math textbooks used around the 1940 to the 1950, the depictions of gender roles were distorted and stereotyped. Men were portrayed as breadwinners engaged in limitless kinds of jobs. On the other hand, the majority of women were described solely in terms of their roles as housewives in a family context. The only occupations that they held were typically 'female,' such as elementary school teachers.

In the current textbooks, there has been a great improvement in terms of girls' activities and women's occupations. Girls are more involved in sports, and women are more engaged in a variety of jobs. However, stereotyped images of males and females still persist in virtually all of the current textbooks. For example, most of the professional jobs are still undertaken by men and women's occupations are still quite limited. None of the working mothers is presented in any textbooks.

How do these distorted images of males and females in the textbooks affect elementary school children? According to Serbin (1983), children prefer to read about characters of their own sex and are more likely to want to try out activities modeled by characters of their own sex. Her findings indicate that children are aware of, and sensitive to, gender roles in the textbooks. Similarly, Stockard (1980) finds that children tend to copy the attitudes of characters in textbooks. Therefore, if the textbooks provide symbolic stereotyped representations of males and females, they help children define what is expected of them to do. For example, if women are only depicted in a few occupations and men are shown in many more, this suggests sex segregation in occupation. Stockard presents the following anecdote to show how negatively textbooks affect children's self-esteem:

A sixth-grade girl once was doing her math homework which consisted of ten story problems. Suddenly, she threw her book down in disgust. When asked what was wrong, she reported, "I'm not supposed to be able to do these problems. Of ten problems, eight of them are about boys and the two girls are stupid!" None of the characters in her math text were people with whom she wanted to identify. (70)

Furthermore, textbooks are the major source of instruction in schools (Pottker 1977); approximately 75% of classroom time and 95% of homework time are spent with textbooks (118). Thus, it is extremely important to consider the impact of biased and inaccurate portrayals of males and females on children as a serious problem.

Finally, the question of how to eliminate stereotyped gender roles is not easily solved. However, a concerted effort should be made to create textbooks that will enable children of both sexes to develop their full potential and self-esteem. There are two ways in which this could be accomplished. First, textbooks could equally distribute roles between males and females. For example, Michel (1986) suggests that "the mother and father should be portrayed as parents on equal footing, with the same responsibilities and household chores should be done by anyone in the family" (59). Second, textbooks could introduce more possible and enhancing images of girls and women who exist in the real society. For example, textbooks should present those women who raise their children and also go out to work and those who have professional responsibilities.

In conclusion, elementary school textbooks have greatly improved in terms of stereotyped depictions of gender roles for the past 45 years. These sex stereotype, however, have not completely been eliminated. Since textbooks have a great influence on children's development of self-esteem, it is extremely important to make textbooks free from stereotypical and inaccurate images of males and females. Sex-bias free textbooks can be effective in helping to develop attitudes in children that will contribute to equality and mutual respect between boys and girls, and men and women.

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