GENDER BIAS IN TEACHER EDUCATION TEXTS
NEW (AND OLD) LESSONS

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This content analysis investigated the treatment of gender in 23 teacher education textbooks published between 1998 and 2001. Given the decades of research documenting the impact of gender bias in schools, the authors anticipated stronger, fairer texts than those analyzed 20 years ago. Clearly, there has been progress, but it is minimal. Introductory/foundation texts provide slightly more than 7% of content to gender issues; methods texts average little more than 1%. Although a commitment to gender fairness is verbalized in several of these texts, specific resources and strategies to achieve that goal are often absent. Inadequate, stereotypic, and even inaccurate treatment of gender is commonplace. Tomorrow's teachers may learn the importance of verbalizing support for equity without the expectation that they can actually help make it a reality.

Although computers, curricular standards, and school choice capture national attention, teacher education students may be influenced less by these headline-grabbing issues than by the content and quality of teacher education textbooks. These omnipresent books continue to set the stage, select the skills, and shape the sensitivities of tomorrow's teachers. In many ways, these books have become admirable reflections of the current research and cultural sensitivities, attractive in design and often engaging to read.

In *Failing at Fairness*, Myra and David Sadker (1995) referred to gender bias as "a syntax of sexism so elusive that most teachers and students were completely unaware of its influence" (p. 2). Textbooks offer the possibility of preparing future teachers to see the subtle, unintentional, and damaging gender bias that shortchanges children. Textbooks have the potential to help future teachers decrease gender bias, or, through omission and stereotyping, they can reinforce biased attitudes and behaviors. Their content is critical. So how are our textbooks doing?

The question is not new. It is the same question that Sadker and Sadker (1980) asked more than two decades ago when they analyzed 24 leading teacher education texts to assess their treatment of women, sex differences, and gender-related issues. Their study followed the passage of Title IX (1972) and found that teacher education texts were as likely to promote sex bias as reduce or eliminate it. Twenty-three of the 24 texts devoted less than 1% of their content to the contributions, experiences, and challenges confronting women. One third did not mention the topic of sex bias at all. Not a single text provided future teachers with curricular resources or instructional strategies to counter sexism in schools, and several actively promoted stereotypes. It was not a pretty picture, and the findings added momentum to the effort to create nonsexist and nonracist publishing guidelines. However, congratulations are premature: This follow-up study indicates that although progress has been made since 1980, sexism in teacher education texts persists.

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BACKGROUND

Two decades ago, the gender issue was new in our professional consciousness, and much of the important research was yet to come. Shirley McCune and Martha Matthews (1975) surveyed schools and departments of education and discovered that most preservice teacher education faculty were simply unaware of sex-equity issues. Now, more than 25 years later, significant research documenting gender bias exists, yet the gender-information gap persists. Patricia Campbell and Jo Sanders (1997) surveyed science and math education professors and found that more than 90% considered gender equity an important social issue, yet they devoted less than 2 hours of instructional time per semester to the topic. Notably, these teacher educators cited the absence of information in teacher education textbooks as a critical obstacle to their teaching of gender equity.

Although females have made impressive strides in college attendance and in closing the math and science gap in recent years, persistent barriers remain. Females are underrepresented in school administration and leadership positions, continue to encounter harassment from male students and adults, and have fallen behind in crucial career fields including technology. And although today's textbooks are less offensive than those published more than 20 years ago, they are far from equitable. Jordan Titus (1993) conducted a study of eight introductory/foundation teacher education texts. Titus concluded that the treatment of gender issues in the most widely used foundation textbooks "is still cursory or nonexistent" (p. 39). In fact, since the Titus study was published, the political backlash against women has grown. Some introductory texts now include these backlash arguments, suggesting that equal educational opportunities for females come at the expense of males and that feminists are conducting a "war against boys" in America's schools (Sommers, 2000). Progress has indeed been slow.

METHOD

Four questions were posed in this study:

1. How do current teacher education textbooks include information on gender and gender bias?
2. Do these textbooks offer relevant information and practical strategies for responding to sexism in school?
3. Are teacher education textbooks themselves free of gender bias and stereotypes (in language, content, and illustrations)?
4. Do these texts reflect the scholarship of both female and male researchers and writers?

Content analyses were conducted on 23 current teacher education textbooks in five areas: introductory/foundations in education, reading methods, social studies methods, science methods and math methods. Introductory/foundation courses are usually taken by students at the beginning of their teacher training and provide an overview of historical and contemporary issues confronting schools and teachers. These introductory courses along with method courses form the core of most teacher education programs across the country. Texts were selected after interviews with education editors, sales representatives, and university instructors concerning their opinions about market leaders and influential textbooks. Instructors were also asked which textbooks they used in their courses. Therefore, this sample includes many, though not all, of the leading methods textbooks. It is important to note that our findings are not an endorsement or indictment of any particular text. Our purpose was to analyze how teacher education texts *overall* include gender issues. When specific examples from individual texts are highlighted, they serve to support overall results and conclusions. All texts studied were published between 1998 and 2001. A bibliography of the 23 texts is included in the appendix.

Texts were analyzed using an evaluation tool based on Sadker and Sadker's (1980) 72-item Content Analysis of Sexism in Texts in Teacher Education instrument. We applied the instrument to the narrative, indices, references, bibliographies, and illustrations. A line-by-line analysis of each text's entire content assessed five areas of coverage:

1. *Space allocated to related gender topics:* Coverage was quantified as the percentage of page space devoted to gender subjects. Sentences were tallied that concerned the nature and impact of gender bias and discrimination, sex role stereotyping, and sex differences; strategies to redress gender bias; and the experiences and contributions of women. The amount

of page space devoted to these topics was compared to total book pages.
2. *Accuracy, comprehensiveness, and integration of gender coverage:* Inclusion of gender was analyzed for depth (i.e., were gender topics discussed in detail or were they mentioned without definition and explanation?) and integration (was information threaded throughout the entire text or isolated in sections such as women and education?).
3. *Gender of authors and contributors:* When names listed in the index, bibliography, references, or content could not be clearly recognized as male or female and when first initials rather than first names were used, they were not included in the tabulations of contributors' gender.
4. *Illustrations (photographs and line drawings) regarding the number and role of each gender:* For both students and teachers, the number of male and female figures was tabulated. Active versus passive poses, stereotypic appearances, and stereotypic activities of each figure were also assessed.
5. *Use of restrictive or nonrestrictive nouns and pronouns:* Because language can be a powerful conveyor of bias, in both blatant and subtle form, the use of supposedly generic nouns and pronouns, such as *he* or *mankind* was counted.

Two raters were trained to use the content analysis instrument. For this study, the first author analyzed line-by-line the narrative and photographs of all 23 texts. To ensure reliability, the second author reviewed selected texts. Interreliability of 90% was achieved.

FINDINGS: AN OVERVIEW

- Two decades ago, teacher education textbooks gave less than 1% of content coverage to the issue of sexism (Sadker & Sadker, 1980). Today, the average text coverage is 3.3%, often of limited practical value. Several texts offer no coverage of gender. Introductory/foundations texts offer the most gender coverage (7.3%), yet content is often segregated into one section or chapter. Distinctions between White women and women of color are rare.
- Gender issues receive less coverage in teaching methods texts than in foundations and introductory texts. In the 16 methods texts, 1.3% of content was devoted to gender issues. Social studies methods textbooks offered the greatest coverage (2.5%) and reading texts the least (0.3%). In this study, 1 math and 2 reading methods texts completely omitted the topic.
- Females dominate textbook photographs. Females were depicted twice as often as males. Curiously, the preponderance of females in photographs contrasts sharply to their very limited narrative coverage. In line drawings, however, males outnumber females 2 to 1.
- *Authors:* Forty-seven authors wrote the 23 books summarized below. More than 3 out of 4 of these authors are male (and mostly White) (see Table 1).
- *Researchers:* Current citation and bibliographic styles that list initials rather than first names are found in many of the books, making gender analysis difficult. However, when names were used, male researchers were cited twice as often in the foundation texts.
- *Indices:* Foundations texts reveal a general improvement in the listings of women and gender topics (including gender bias, homophobia, sexual harassment, and Title IX). However, critical topics continue to be omitted in educational methods books, including Title IX.

INTRODUCTION TO TEACHER EDUCATION TEXTS: LAYING THE FOUNDATION, LEAVING OUT HALF THE STORY

If there is any field in which women have made significant contributions, both individually and collectively, it is education. Twenty years ago, a reader would be hard-pressed to find these contributions in teacher education texts (Sadker & Sadker, 1980). Today, the situation has improved. In the seven introductory/foundations books, gender issues comprised 7.3% of total content. As an example, all of these texts describe the dame school, and three texts note that dame schools often provided the only formal education for girls in colonial America. Unfortunately, beyond "mentioning" such events, the extent of women's role in education is shallow and often isolated from the main body of the discussion. For example, Ornstein and Levine's (2000) chapter on "Pioneers in Education" champions the work of nine males and one female (Maria Montessori), imparting a message that males are the unquestioned educational leaders. Parkay and Stanford's (2001) chapter, "Ideas and Events That Have Shaped Education in the United States" discusses women's contributions to education, particularly the feminization of teaching, in 6 disconnected paragraphs. The life work of Emma Willard, Margarethe Schurz, Elizabeth Palmer Peabody, Susan Blow, Ella Flagg Young, Catherine Goggin, Margaret Haley, and Jane Addams are given approximately 3 sentences. Such cursory treatment is in stark contrast to the

TABLE 1 Textbook Authors

	Total	*Male*	*Female*	*Ratio*
All books	47	35	12	3:1
Foundations	16	11	5	2:1
Methods	31	24	7	3:1
Mathematics	5	5	0	5:0
Science	6	5	1	5:1
Reading	12	8	4	2:1
Social studies	8	6	2	3:1

26 pages detailing the contributions of famous, and not so famous, male educators. In McNergney and Herbert (2001), female educators are described in 2 paragraphs of 10 sentences. The rest of this 36-page history chapter is devoted to the educational contributions of males.

Although women have played a major role in schooling, their influence on educational philosophies and the impact of these philosophies on women is nearly invisible. McNergney and Herbert (2001) open their philosophy chapter with a photograph of Maria Montessori, suggesting the ideas of both genders will be presented. In fact, she is the only woman mentioned as a prominent, pioneering philosopher. The chapter goes on to discuss 37 males. Furthermore, Montessori is not included in the main text but relegated to two lines in a box titled "Benchmarks: Developments in Western Intellect Thought and Their Influences on American Education" (p. 161). Such imbalance conveys the message that males are more likely to have the "passion to understand." Johnson, Dupuis, Musial, Hall, and Gollnick (1999) provide a better balance by discussing the contributions of 10 male and 2 female philosophers, Jane Martin Roland and Maxine Greene. Unfortunately, Martin's insights on the treatment of women in educational philosophy are nowhere to be found.

Sadker and Sadker (2000) do not discuss female philosophers but do include an eight-page section on Women and Education. In fact, the Sadker and Sadker text offers the most comprehensive coverage, devoting almost twice the page space to gender issues and the experiences of women than any of the other texts in this study. Also included are concrete, specific strategies for equitable instruction.

Morrison (2000) also focuses on specific strategies by challenging students to

> select a literature or history textbook that is being used in a local school. Analyze the text for the presence or absence of women's issues, themes, or women authors. How would you rate the text as providing a gender-fair education in that subject? (p. 159)

Curiously, the few strategies and resources that do exist in the texts analyzed in this study are more likely to be found in these introductory/foundations books than they are in methods texts. Four out of 7 introductory texts and 6 out of 16 methods texts provided instructional strategies specific to gender.

Special Features

The inclusion of special features, unique inserts that highlight research studies, individual educators, recent court decisions and relevant laws, and other issues of interest is one method authors use to include gender in these texts. For example, Morrison's (2000) Profiles section presents first-person accounts of teaching experiences. "Emma Hart Willard's Plan for the Education of Women" introduces readers to this pioneer's vision of education. Her struggles and eventual success in establishing the Troy School are also documented (p. 381). One of Parkay and Stanford's (2001) Professional Reflection inserts is titled "Identifying the Factors Behind Youth Violence" (p. 149). James Garbarino's book *Lost Boys: Why Our Sons Turn Violent and How We Can Save Them* is featured as the authors consider the role of schools in reducing violence. Unfortunately, the authors miss the opportunity to directly confront links between traditional notions of masculinity and youth violence. In another special feature of this text, Technology Highlights, research on the computer gender gap is emphasized (p. 278). Johnson et al. (1999) include a Relevant Research insert titled "Development of Racial and Gender Identity," which discusses how schools offer no "sustained challenge to the vision of male dominance" (p. 97). Another excellent Professional Dilemma insert asks, "What If There Are Only a Few Girls in the Calculus Class?" (p. 88). Readers are encouraged to con-

front their assumptions regarding the math and science abilities of both males and females. Whereas these inserts provide valuable information, they also fragment from the main text coverage of gender issues and the contributions of women, sending a potential message that these topics are of less importance.

The Law

Twenty years ago, only one out of four foundations books analyzed mentioned Title IX (Sadker & Sadker, 1980). Our current study shows progress, as all seven foundation texts reviewed include coverage of Title IX and sexual harassment protections. Johnson et al. (1999) offer a good description of peer sexual harassment:

> Teasing, snapping bra straps, requesting sexual favors, making lewd comments about one's appearance or body parts, telling sexual jokes, engaging in physical abuse, and touching inappropriately are examples of peer sexual harassment. It is important for teachers to make it clear that sexual harassment will not be tolerated. School districts are supposed to have in place a grievance procedure for sex discrimination complaints. Students and/or their parent can file a complaint with the Office of Civil Rights. . . . Keep in mind that sexual harassment is not limited to high school students; middle school and in some cases elementary school children are also sexually harassed. (p. 265)

Although recognition of the law is important, descriptions frequently rest on legal and financial liability at the expense of other issues. In McNergney and Herbert's (2001) discussion titled "Somebody Will Pay!" a school's liability "under Title IX for monetary damages to the victims" due to sexual harassment is emphasized (p. 448). The omission of a broader view of the problem, including strategies to prevent sexual harassment, reinforces the revenge mentality suggested in the title. Sexual harassment is more than a violation of the law; such behavior takes a physical, psychological, and academic toll on both girls and boys.

In fact, the Sadker and Sadker (2000) text offers the most comprehensive discussion of the law, including its impact on both students and faculty, females and males. Title IX prohibits sex discrimination in health benefits, counseling, admission, employment rights, scholarships, and a host of educational activities, although future teachers reading most of these texts would likely believe that the law concerns only athletics. Morrison (2000) describes Title IX as an important law for women: "Title IX has had a tremendous influence on all areas of education, but particularly on physical education and athletics" (p. 396). Ornstein and Levine (2000) initially capture the more complete role of Title IX. The authors discuss the impact of Title IX and the Women's Educational Equity Act on educational opportunities for girls and women in math, science, and technology courses, reduced sex stereotyping in curriculum materials (although this is actually not included in Title IX), as well as greater participation by women in athletics (pp. 270-271). Unfortunately, the authors fail to point out that years of congressional budget cutbacks have all but eliminated many of these programs.

The Backlash

In recent years, a backlash fueled by conservative political organizations has blamed the academic problems of boys on efforts to ensure equal educational opportunities for girls. Three textbooks now include discussions of this backlash ideology. McNergney and Herbert (2001) and Ryan and Cooper (2000) present a somewhat balanced analysis of the backlash in relation to gender equity, informing future teachers that sexism is a double-edged sword (ironically, a position long held by most feminists). McNergney and Herbert ask the important question, "Are boys also victims of bias in the schools?" (p. 319). They rightly note the academic and behavioral problems boys face and consider the effectiveness of single-sex schools. Ryan and Cooper acknowledge the gains females have made in science and math achievement as well as increased college enrollment and recognize that, consequently, some critics "challenge the assertion that schools discriminate against girls" (p. 167). However, neither text champions the backlash or discredits the discrimination still experienced by females in classroom interaction, course-taking patterns, and curriculum.

Curiously, Parkay and Stanford (2001) take a different approach. In the section "Gender and Education" (pp. 279-281), the problems and progress experienced by females are covered in three quarters of a page. More than twice that amount is devoted to the backlash. Parkay and Stanford write,

> Additional research and closer analyses of earlier reports on gender bias in education were beginning to suggest that boys, not girls, were most "shortchanged" by the schools. Numerous articles as well as a 1999 PBS series that began with a program titled "The War on Boys" challenged the conclusions of the earlier AAUW [American Association of University Women] report *How Schools Shortchange Girls* [1992]. Other commentary discounted gender bias in the schools as a fabrication of radical feminism; among the first to put forth this view was Christina Hoff Sommers' (1994) controversial book, *Who Stole Feminism? How Women Have Betrayed Women;* and more recently, Judith Kleinfeld's (1998) *The Myth That Schools Shortchange Girls: Social Science in the Service of Deception* and Cathy Young's (1999) *Ceasefire!* (pp. 279-280)

The authors summarize these books, reports, and the television show but fail to mention that they were all funded by far-right political foundations and have been roundly criticized for lack of peer review and factual inaccuracies. The backlash publications that Parkay and Stanford cite call for dismantling of Title IX and blame "misguided feminists" for the reading difficulties that boys face, ignoring the fact that boys experienced reading problems long before the modern feminist movement began. Ironically, a page later, after highlighting many backlash arguments, Parkay and Stanford offer some useful suggestions for equitable teaching, suggestions that contradict backlash recommendations (p. 281).

Parkay and Stanford (2001) also describe a report claiming that "contrary to long-standing assumptions that there are pronounced differences between the performance of males and females on standardized tests . . . there is not a dominant picture of one gender excelling over the other." The report contends that gender differences "are not the result of bias in the exams; instead the differences are genuine" (p. 281). Although they point out that the study reviewed more than 400 tests, they fail to mention that the gender differences on all the tests were merged into a single (and many believe misleading) finding. Considering these tests individually offers a much clearer, if more disturbing, picture. Test scores that impact college admissions and scholarships, for example, show females on the short end of a disturbing gender gap. Statistics reveal that males outperform females on both the verbal and mathematics sections of the SAT, on the SAT II, and on the Graduate Record Exam (GRE), with males scoring 120 points higher than females (Coley, 2001; College Entrance Examination Board, 1999; GRE, 2000). Why do males score higher on high-stakes tests that impact their futures while females do better on tests that do not? Why do females receive higher report card grades while posting lower scores on these critical tests? Instead of exploring these questions, Parkay and Stanford discount the gender gap, and students are led to believe that it has disappeared. Parkay and Stanford seem to accept many backlash premises, including the idea that education is a zero-sum game and that efforts to ensure educational rights for girls have come at the expense of boys.

Most texts also pay little attention to issues like persistent gender segregation in courses, seemingly accepting vocational programs that stream girls into low-paying careers such as cosmetology while boys are trained in more lucrative vocations such as auto mechanics or computer repair (U.S. Department of Labor, Bureau of Labor Statistics, 2000). In college, males dominate computer science, physics, and engineering programs, whereas women represent more than 90% of college majors in elementary teaching, social work, special education, and library sciences. This hypersegregation characterizes schools and colleges, contributes to salary discrepancies in adulthood, but need not be a permanent and unexamined part of American schooling (U.S. Department of Education, National Center for Education Statistics, 2000a).

TEACHER EDUCATION METHOD TEXTBOOKS: MISSING IN METHOD

The 16 methods texts analyzed devoted 1.3% of their pages to gender issues. The discipline devoting the least space to the issue was reading texts.

Reading Methods

In the four reading texts analyzed, 0.3% of content space concerned gender issues, the lowest percentage of any category in this study. This is surprising for several reasons, including the fact that gender has been a central issue in the reading discipline for decades, an issue with implications for both girls and boys. Significant research exists concerning sex bias in basal readers and children's literature. Test scores and special reading programs document the particular difficulties faced by boys in reading, yet this gender difference in reading performance is not addressed. Why are there differences? What can teachers do to close this gender gap? Studies also have documented that females are often omitted from stories and pictures in children's basal readers (Shannon & Goodman, 1994; Sleeter & Grant, 1991). When they do appear, they are often stereotyped. Whereas girls in basal readers are portrayed as passive observers, watching their active brothers at work and at play, basal reader boys are actively achieving feats of heroism. In part to respond to these images, many annotated bibliographies of nonsexist children's books have been disseminated widely, yet not a single one has made it to the pages of these books. Several state textbook adoption committees use gender equity standards as a criterion for book selection and adoption, an issue not addressed in these texts (Farr & Tulley, 1989; Marzano, 1993-1994).

Burns, Roe, and Ross (1999) and Cunningham, Moore, Cunningham, and Moore (2000) do not even discuss gender. The coverage in the other two texts is minimal and fragmented. Heilman, Blair, and Rupley (1998) offer diffuse support for gender equity: "Both boys and girls should be provided with opportunities to interact with written language that requires both problem solving behaviors and lesson learning behaviors" (p. 98), but they offer little follow-up. In discussing sex differences in reading preferences, Reutzel and Cooter (2000) conclude,

> Favored topics of interest for girls in fiction include mystery, friendship, adventure, fairy tales, and animal stories. Their favored nonfiction topics include art and hobbies. Favored topics of interest for boys in fiction include science fiction, mystery, and adventure. Nonfiction categories include earth science, how-to-science experiments, and sometimes arts and hobbies. Girls tend to prefer fiction books having female main characters and, similarly, boys usually prefer male main characters in fiction texts. (p. 475)

The discussion appears to condone sex-typed reading preferences rather than challenge teachers to expand the reading interests of both female and male students. One particularly unfortunate assumption that may be drawn from these statements is that boys will refuse to read stories about girls, an insight that does not encourage equity and respect among boys and girls and ignores individual differences in reading preferences. An entire chapter, "Teacher Effectiveness in the Literacy Program" in Heilman et al. (1998), surveys research on instructional practices such as assessment, interactive instruction, expectations, and classroom management: generic strategies without any consideration of gender. They do not offer strategies to respond to the persistent reading problems encountered by boys.

Reutzel and Cooter (2000) do provide general nonsexist teaching principles. A "Checklist for Selecting and Evaluating Materials for Culturally and Linguistically Diverse Learners" is presented in a highlighted box (p. 342). Readers are encouraged to assess sexist language and ensure that the perspectives of diverse groups and both genders are included. These guidelines are useful, but much more is needed, such as guidelines for equitable instruction and bibliographies of nonsexist children's books.

Social Studies Methods

Overall, the six social studies texts analyzed devoted an average of 2.5% of their content to the topics of sexism and to the experiences and contributions of females, more than the average coverage found in the reading, science, and math texts combined. The power of the Internet in social studies education is evident. Savage and Armstrong (2000) direct readers to click on such Web sites as The American Association of University Women, WEEA (Women's Educational

Equity Act), and the National Women's History Project for gender equity information. Garcia and Michaelis (2001) go further by suggesting eight activities to bring gender into social studies classrooms, such as,

> Challenge students to gather examples of gender bias, gender stereotyping, and sexist language. They may review textbooks, television advertisements, storybooks, photographs, and other visual art, news reports, and so on. Then, as a class, discuss how selected examples might be changed to reflect a viewpoint of gender equality. (pp. 109-110)

Following these suggestions, 13 articles on the study of gender are identified (pp. 110-111). These resources are helpful ancillaries to the main text. Parker (2001) also alerts future teachers to gender bias in classroom interactions. In three pages, he highlights how "children's interactions with one another and the teacher's interaction with them remains a serious problem" (p. 41). Drawing on the research conducted by the American Association of University Women, the author concludes that there are " 'two worlds' in the classroom, one of active boys, the other of inactive girls" (p. 43).

To engage students in the prewriting process, Farris (2001) suggests a strategy of graphic organizing, using National Women's History Month as the theme. In this activity, students are asked to identify women who were pioneers, suffragettes, equal rights advocates, scientists, authors, artists, political leaders, and educators. Names such as Amelia Earhart, Elizabeth Blackwell, and Gloria Steinem are listed as examples (pp. 112-113). The recognition of women and of National Women's History Month is noteworthy. However, the emphasis is on prewriting techniques, and the significance of these women is not in the text.

When Farris (2001) suggests several group-project ideas for a unit on the Civil War, only one of the ideas includes females, and linguistic bias and stereotypes compromise even that suggestion:

> Have a Civil War re-enactor come to class in uniform and discuss the segment of the Civil War *he* [italics added] is most familiar. Women often followed the troops. A female participant in the reenactment group could also shed light on the reality of life on the battlefield. (p. 337)

In this excerpt, the word *he* sends the message that the period really was about men and confirms a second-class role for women, an afterthought even in the choice of actors. This era in American history involved serious social and economic reform, with important female voices on and beyond the battlefield. However, these voices are silenced in these sample classroom ideas.

Titles can also be misleading. In "Goals of Lessons Focusing on Multicultural and Gender Issues," Savage and Armstrong (2000) offer important reasons for incorporating cultural diversity into the curriculum. Future teachers are asked to develop lessons that "recognize the validity of different cultural perspectives [and] that help pupils develop pride in their cultural heritage" (p. 152). Integrating the work of women into lessons is not mentioned. Addressing historical and current gender discrimination is not mentioned. In fact, it is only in the title that gender is mentioned.

Although these social studies texts offer more space on the topic of gender than other methods books, serious problems persist. Future teachers are not given many strategies to help students "rediscover" women in history. If social studies teachers do not learn about the experiences and barriers related to gender bias, it is likely that their students will be uninformed as well. The result is that both boys and girls lower their opinions about the importance of girls and women in America's story. One example of the impact of this omission is reported in *Failing at Fairness* (Sadker & Sadker, 1995). When high school students were asked to name important men in American history, they had no trouble listing scores of males. When asked to name important women (who are not first ladies, entertainers, or sports figures), they had a difficult time naming even five.

Science Methods Texts

More than 20 years ago, only one out of three science books analyzed by Sadker and Sadker (1980) mentioned gender issues and challenges in science. In that study, Mary Budd Rowe's *Teaching Science as Continuous Inquiry* (1978)

described female gender as "A Special Handicap," in that girls "know less, do less, explore less, and are prone to be more superstitious than boys" (p. 68). Fortunately for teachers, students, and society, science methods texts today are beginning to move beyond such overt and harmful stereotypes. In this study, the three science texts averaged 1.1% space given to gender, and all three addressed gender bias with varying levels of effectiveness.

Abruscato's (2000) three-page section titled "The Scientist: Who Is She?" is a section that challenges the pervasive stereotype that scientists are male. The author notes that when students are asked to draw a scientist,

> the scientist is represented as a bespectacled white male with a slightly mad glint in his eyes and a crop of straggly hair . . . the real harm of this stereotype lies in the fact that it dissuades children from considering science or science-related careers. Moreover, the sex-role stereotype harms boys as much as it harms girls: Girls learn that science is not for females and boys learn that girls do not like science. (pp. 13-14)

Discussion questions further help students to consider how gender influenced their own decisions to become scientists: "If you are a woman, what factors tended to turn you toward or away from a scientific career? If you are a man, what stereotypes, if any, did you have about women and careers in science and technology?" (p. 17). Such personal and societal explorations of bias are certainly helpful. The text also provides two useful, annotated Web site descriptions, "Women in Science and Technology" and "4000 Years of Women in Science" (p. 16). Unfortunately, this promising start lacks specific follow-up strategies. A troubling omission in all three books is the failure to include noted women scientists and their contributions. In consequence, future teachers do not learn of these prominent women or how to integrate their work into the science curriculum.

Two of these texts, Carin and Bass (2001) and Martin, Sexton, and Gerlovich (2001), do offer beginning teachers specific strategies. Carin and Bass emphasize that "whether or not they will need to use science in their future careers, all of your students—girls and boys—can learn to enjoy, benefit from, and raise questions about science and technology" (p. 136). To develop equitable teaching practices, the authors suggest gender-fair interaction and wait-time strategies as well as hands-on activities for both girls and boys. Similarly, Martin et al. encourage readers to consider their own subtle biases for males and females, to hold high expectations for all students, and to provide female science role models. In addition, this text provides a wealth of science lessons and activities. The breadth of choices (from collecting leaves to mapping temperature receptors on the human hand to creating music with handmade kazoos) is impressive and likely to capture the diverse interests of both boys and girls.

Because the baseline was so low in 1980, the progress in these current texts is striking. Yet, with only 1% of content devoted to this issue, much more needs to be done. Males continue to receive higher math and science scores on the National Assessment of Educational Progress and SAT II and AP tests (College Entrance Examination Board, 1999; U.S. Department of Education, National Center for Education Statistics, 2000a, 2000b). Whereas science careers such as medicine have seen an increase in female participation, other sciences such as physics remain male domains. And gender perceptions and problems persist. In elementary school, both males and females agree that they like and understand math and science. By the 12th grade, however, females report less positive attitudes and consider math and science harder subjects than do boys (U.S. Department of Education, National Center for Education Statistics, 2000b). Future teachers must be prepared to break down the persistent gender barriers that limit scientific and mathematical talents of students, and although these methods books offer a step in the right direction, more than one step is needed.

Math Methods Texts

Put most positively, the three math methods texts analyzed have the potential for a great deal of growth. Overall, 0.6% of space is given to gender-related issues. The pervasiveness of gender bias is strikingly captured in the opening sentence of Posamentier and Stepelman (1999):

"Although the famous mathematician Carl Friedrich Gauss (1777-1855) referred to mathematics as the 'queen of science,' it is unquestionably the 'king' " (p. 1). Mathematics methods books do little to challenge such harmful stereotypes. Riedesel and Schwartz (1999) completely omit the topic of gender. Sexism, gender differences in math achievement, and the stereotyping of math as a male domain are not discussed; nor are strategies to help female students succeed in math. The sole illustration in this book also reinforces math as male domain: an icon of two male students talking (the icon represents "Math as Communication," a National Council of Mathematics Teachers standard).

Van De Walle (2001) reflects a greater sensitivity to the struggle for gender equity than the other texts analyzed. Sexism is discussed in terms of gender differences in achievement, beliefs and attitudes, and representation in math and science careers. Van De Walle's is the only text to include gender-fair instructional strategies. He calls on teachers to monitor interaction and feedback patterns that favor males, to focus on higher order questioning, and to create hands-on activities to engage all students. However, less than 1% of content space is given to these issues.

Tomorrow's teachers will find few female mathematician role models in these textbooks. Only the Posamentier and Stepelman (1999) text mentions a female pioneer. In a section titled "Enriching Mathematics Instruction With a Historical Approach," the works of 17 male mathematicians are detailed, whereas Hypatia is given passing mention. "*Incidentally* [italics added], the first woman mathematician we hear of in ancient time is Hypatia (ca. 410), who wrote commentaries on the work of Diophantus" (p. 201).

Whereas female mathematicians are all but invisible, hypothetical women do materialize in the form of word problems. Although all three texts contain slightly more male names than female names in word problems, there is a sizable fictitious female population (77 males and 68 females). The word problems provide both positive and negative gender messages. For example, this problem depicts females as both physically active and using technology:

> Sarah and Janice rode their bicycles to school one morning, and when they saw each other at the bicycle rack, they both checked their bike computers to see what their average speeds were. Sarah's computer said she averaged 12.6 miles per hour. Janice's said she averaged 20.5 kilometers per hour. If a kilometer equals about .6 miles, who rode faster? (Riedesel & Schwartz, 1999, p. 81)

Gender role stereotypes are also reinforced:

> Linda has 4 2/3 yards of material. She is making baby clothes for the bazaar. Each dress pattern requires 1 1/6 yards of material. How many dresses will she be able to make from the material she has? (Van De Walle, 2001, p. 238)

> John is building a patio. Each section requires 2/3 of a cubic yard of concrete. The concrete truck hold 2 1/4 cubic yards of concrete. If there is not enough for a full section at the end, John can put in a divider and make a partial section. How many sections can John make with the concrete in the truck? (Van De Walle, 2001, p. 239)

ILLUSTRATIONS: FAÇADES OF EQUALITY

Because the findings of this analysis reveal the underrepresentation of women and gender issues in the narrative content of these texts, one might anticipate that text illustrations would reinforce female invisibility. Curiously, our study found the reverse is true. In all texts, the number of females in photographs is almost twice the number of males. We can only hypothesize the reasons for this disconnect. Perhaps there is a conscious or subconscious effort to balance the genders in the book. Because text content is almost exclusively male, a visual counterbalance might be in order. Authors and editors would find it far easier to include photographs of women than to undertake new research and rewrite content to include the female experience. Part of the explanation may also lie in the feminization of teaching, and photographs of classroom life capture more female than male teachers. Although these are only suppositions, one fact is clear: There is a striking contradiction between content and photographs.

Whereas the photographs reflect a world inhabited mostly by females, the line drawings tell a different story. These line drawings, created by artists not captured by photographers, are more in line with the male narrative. The line draw-

ings reflect 3 times more male than female figures. Why the difference? Perhaps because artists attempt to reflect the text content, a content that is mostly male.

Actions in both photographs and line drawings also reflect gender stereotypes:

- *School staffing:* In all texts, illustrations portray teaching as a female profession, showing female teachers 2 times as often as male teachers. In contrast, males are seen 5 times more often as principals, reaffirming that administration is a male domain.
- *Technology:* In both foundations and methods texts, males are seen working at computers more than twice as often as their female peers. Five out of the six photographs in Morrison's (2000) chapter "Technology, Teaching, and Learning" capture males directly in front of the computer and engaged in a computer-related activity, with females either observing their male peers or on the photograph's edges (pp. 446-495). A picture of two boys engaged in a computer activity also opens the chapter on technology in Garcia and Michaelis (2001, p. 264). Such photographs do not help future teachers see their female students as interested, competent users of technology.
- *Special education:* Photographs reinforce a troubling reality that males, across all races, are overrepresented in special education, whereas females are underrepresented (U.S. Department of Education, Office for Civil Rights, 1999). Why the gender gap? Are we more likely to recognize male special education needs such as reading or behavior problems and ignore female needs such as eating disorders and poor performance in subjects like physics? Whatever the reason, not a single methods text in this study included pictures of females with special needs. In the foundations books, 13 males but only 3 females were pictured.
- *Scientists:* Illustrations in science methods texts both challenge and reinforce gender stereotypes. The caption "Young girls are as curious as boys about science and inquiry. Sensitive teachers nurture that interest" accompanies a photograph of a female actively participating in an experiment (Carin & Bass, 2001, p. 135). But a drawing titled "Space Journey" portrays four male and no female students as astronauts (Abruscato, 2000, p. 266).

CONCLUSIONS

Teacher education textbooks connect students to their future lives as classroom teachers, but in terms of gender equity, it is a fragile connection indeed. Although most texts include some coverage of gender issues and the role and contribution of women, that coverage is minimal and not always positive. Foundation texts provide slightly more than 7% of content to gender issues, including the experiences and contributions of females, and methods texts average little more than 1%. Three methods texts in this study provided no coverage. The content analysis revealed a generally supportive tone for the idea of gender fairness in education, yet the books rarely contained specific resources and strategies to achieve that goal. The political backlash against the feminist movement is now a topic in several books. One text gives a lengthy and troubling description of backlash assumptions, suggesting that efforts to help girls must come at the expense of boys.

When we initially decided to undertake this study and determine what today's best-selling textbooks tell future teachers about women, sexism, and gender equity, we expected a marked improvement from texts analyzed 20 years ago. Given the decades of research and writing documenting the nature and impact of gender bias in schools and society, we believed that it was reasonable to anticipate stronger, fairer texts. Clearly, there has been progress, but it is minimal and disappointing. If future teachers are to end sex bias in schools, they will need to understand how sexism operates and how it harms all children. Every day they will confront bias in classroom interactions, harassment in the hallways, stereotypes in the curriculum, imbalance in school staffing, and a whole host of educational and political challenges. Current college textbooks are unlikely to prepare teachers to respond to these challenges.

APPENDIX
Teacher Education Texts Selected for Content Analysis

Foundations of Education

Johnson, J. A., Dupuis, V. L., Musial, D., Hall, G. E., & Gollnick, D. M. (1999). *Introduction to the foundations of American education* (11th ed.). Needham Heights, MA: Allyn & Bacon.

McNergney, R. F., & Herbert, J. M. (2001). *Foundations of education: The challenge of professional practice* (3rd ed.). Needhman Heights, MA: Allyn & Bacon.

Morrison, G. S. (2000). *Teaching in America* (2nd ed.). Needham Heights, MA: Allyn & Bacon.
Ornstein, A. C., & Levine, D. U. (2000). *Foundations of education* (7th ed.). Boston: Houghton Mifflin.
Parkay, F. W., & Stanford, B. H. (2001). *Becoming a teacher* (5th ed.). Needham Heights, MA: Allyn & Bacon.
Ryan, K., & Cooper, J. C. (2000). *Those who can, teach* (9th ed.). Boston: Houghton Mifflin.
Sadker, M., & Sadker, D. (2000). *Teachers, schools, and society* (5th ed.). New York: McGraw-Hill.

Reading Methods Texts

Burns, P., Roe, B., & Ross, E. (1999). *Teaching reading in today's elementary schools* (7th ed.). Boston: Houghton Mifflin.
Cunningham, P. M., Moore, S. A., Cunningham, J. W., & Moore, D. (2000). *Reading and writing in elementary classrooms: Strategies and observations* (4th ed.). New York: Addison Wesley Longman.
Heilman, A. W., Blair, T. R., & Rupley, W. H. (1998). *Principles and practices of teaching reading* (9th ed.). Upper Saddle, NJ: Prentice Hall.
Reutzel, D. R., & Cooter, R., Jr. (2000). *Teaching children to read: Putting the pieces together* (3rd ed.). Upper Saddle, NJ: Prentice Hall.

Social Studies

Farris, P. J. (2001). *Elementary and middle school social studies: An interdisciplinary instruction approach* (3rd ed.). New York: McGraw-Hill.
Garcia, J., & Michaelis, J. (2001). *Social studies for children: A guide to basic instruction* (12th ed.). Needham Heights, MA: Allyn & Bacon.
Martorella, P. H. (2001). *Teaching social studies in middle and secondary schools* (3rd ed.). Upper Saddle, NJ: Prentice Hall.
McEachron, G. A. (2001). *Self in the world: Elementary and middle school social studies*. New York: McGraw-Hill.
Parker, W. C. (2001). *Social studies in elementary education* (11th ed.). Upper Saddle, NJ: Merrill/Prentice Hall.
Savage, T. V., & Armstrong, D. G. (2000). *Effective teaching in elementary social studies* (4th ed.). Upper Saddle, NJ: Prentice Hall.

Science Methods Texts

Abruscato, J. (2000). *Teaching children science: A discovery approach* (5th ed.). Boston: Allyn & Bacon.
Carin, A. A., & Bass, J. E. (2001). *Teaching science as inquiry* (9th ed.). Upper Saddle River, NJ: Merrill/Prentice Hall.
Martin, R., Sexton, C., & Gerlovich, J. (2001). *Teaching science for all children* (3rd. ed.). Needham Heights, MA: Allyn & Bacon.

Math Methods Texts

Posamentier, A. S., & Stepelman, J. (1999). *Teaching secondary mathematics: Techniques and enrichment units* (5th ed.). Upper Saddle River, NJ: Merrill/Prentice Hall.
Riedesel, C. A., & Schwartz, J. E. (1999). *Essentials of elementary mathematics* (2nd ed.). Boston: Allyn & Bacon.
Van De Walle, J. A. (2001). *Elementary and middle school mathematics: Teaching developmentally* (4th ed.). New York: Addison Wesley Longman.

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Campbell, P., & Sanders, J. (1997). Uninformed but interested: Findings of a national survey on gender equity in preservice teacher education. *Journal of Teacher Education*, *48*, 69-75.
Coley, R. T. (2001). *Differences in the gender gap: Comparisons across racial/ethnic in education and work*. Princeton, NJ: Educational Testing Service.
College Entrance Examination Board, and Educational Testing Service. (1999). College-bound seniors: A profile of SAT program test takers. New York: Author.
Farr, R., & Tulley, M. (1989). State level adoption of basal readers: Goals, processes, and recommendations. *Theory Into Practice*, *28*, 248-253.
Graduate Record Exam. (2000). *Sex, race, ethnicity, and performance on the GRE general test, 1999-2000*. Princeton, NJ: Educational Testing Service.
Marzano, R. J. (1993-1994). When two world views collide. *Educational Leadership*, *51*, 6-11.
McCune, S., & Matthews, M. (1975). Eliminating sexism: Teacher education and change. *Journal of Teacher Education*, *26*, 294-300.
Rowe, M. B. (1978). *Teaching science as continuous inquiry* (2nd ed.) New York: McGraw-Hill.
Sadker, M., & Sadker, D. (1980). Sexism in teacher education texts. *Harvard Educational Review*, *50*, 36-46.
Sadker, M., & Sadker, D. (1995). *Failing at fairness: How America's schools cheat girls*. New York: Touchstone.
Shannon, P., & Goodman, K. (1994). *Basal readers: A second look*. New York: Owen.
Sleeter, C., & Grant, C. (1991). Race, class, gender, and disability in current textbooks. In M. Apple & L. Christian-Smith (Eds.), *The politics of the textbook* (pp. 78-101). New York: Routledge.
Sommers, C. H. (2000). *The war against boys: How misguided feminism is harming our young men*. New York: Simon & Schuster.
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U.S. Department of Education, National Center for Education Statistics. (2000b). *Trends in educational equity for girls and women*. Washington, DC: Government Printing Office.

U.S. Department of Education, Office for Civil Rights. (1999). *Elementary and secondary school compliance reports*. Washington, DC: Government Printing Office.

U.S. Department of Labor, Bureau of Labor Statistics. (2000). *Employed persons by detailed occupation, sex, race, and Hispanic origin*. Washington, DC: Author.

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