
Raising Students' Awareness of Women in Psychology

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The near invisibility of women's contributions to psychology is a serious problem in the teaching of psychology. We tested the effectiveness of a teaching exercise aimed at increasing students' awareness of women's contributions to psychology. The exercise involved making, displaying, and examining posters about women in psychology. Students (a) named more women who contributed to psychology, (b) identified more contributions of women to psychology, and (c) listed more women with their accurately matched contributions following the assignment than they did before the assignment. This exercise can be modified to teach students about the contributions of other groups (e.g., racial and ethnic minorities) to psychology.

Scholars have noted that women's contributions to psychology are nearly invisible in psychology textbooks and courses (Bernstein & Russo, 1974; Bohan, 1990, 1993; Furumoto, 1985, 2003; Walsh, 1985). Hogan, Goshtasbpour, Laufer, and Haswell (1998) reviewed 357 history of psychology undergraduate course syllabi and found that among approximately 100 texts or required readings, only a few devoted any pages to women's contributions. Furthermore, only 17% of syllabi addressed women in psychology beyond the texts. As a result of such oversight, many students might perceive that women have made limited contributions to psychology (Furumoto, 1985). This perception can reinforce the stereotype that women are not contributors to science and, in turn, serve as one factor that might subtly direct some female students away from pursuing careers in psychological science.

To address this problem, scholars have developed courses (Bohan, 1993), texts (Bohan, 1992; O'Connell, 2001; O'Connell & Russo, 1983, 1988), special issues of journals (O'Connell & Russo, 1980), resource lists (Benjamin, 1980), and teaching exercises (e.g., Furumoto, 1985) that highlight women's contributions to psychology. For instance, in her history of psychology course, Furumoto (1985) used student research projects on women in psychology that culminated in oral presentations and biographical essays. Paludi (1991) replicated Furumoto's approach and extended it by distributing copies of biographical sketches to the class and displaying them on a bulletin board for viewing by other students and faculty. Although these methods provided promising groundwork for teaching students about women in psychology, empirical examination of their effectiveness is needed, and instructors might

find it helpful to know whether these methods increase students' knowledge about women in psychology.

Thus, we describe and examine empirically the effectiveness of a method that builds on Paludi's (1991) approach to teach students about women in psychology. We wanted to develop an activity that (a) engaged students by using their creativity and (b) provided an opportunity for students to share their work with one another to gain a broader sense of the contributions of women to psychology. To this end, we developed the Women in Psychology Posters exercise.

Women in Psychology Posters: Description of the Assignment

During the first week of a psychology of women course, we assigned each student a woman in psychology selected at random from a list of 120 women (see Appendix). We compiled this list of historic and contemporary women using psychology of women and other psychology texts (e.g., Paludi, 2002; Yoder, 2003) and several Web sites (e.g., <http://teach.psy.uga.edu/dept/student/parker/PsychWomen/wopsy.htm>; <http://www.webster.edu/~woolfm/womenlist.html>; <http://www.webrenovators.com/psych/WomenInPsychology.htm>). We encountered a profound invisibility of the contributions of women of color to psychology in the sources that we searched, but were able to include some women of color on our list. Nevertheless, the majority of the women on our list were of American or European background.

We informed students that they had to research the background and work of their assigned woman and develop a creative and informative poster (11 × 17 in.) that highlighted the contributions of that woman to psychology. Following Furumoto's (1985) and Paludi's (1991) approaches, we specified that the posters should also include background information (e.g., time of life and work, educational background) and a picture of the woman if available. Posters were due at the midpoint of the semester, at which time we collected and displayed them on a wall in a heavily trafficked hall in the psychology building. The display of posters overlapped with women's history month and provided everyone in the department an opportunity to view the posters and learn from them.

Students had 2 weeks after the display of posters to complete their follow-up assignment designed to facilitate students' learning about women in psychology. For the follow-

up assignment, students had to study carefully the “wall of posters” and identify at least five women they did not know before the exercise but whose work and contributions to psychology they found to be especially important or interesting. Students recorded the name of each person, her contribution to psychology, and a brief explanation of why they thought her work was important. The accuracy, creativity, and comprehensiveness of the women in psychology poster and the quality and timely completion of the follow-up assignment together were worth 10% of students’ semester grade.

Method

Participants

A total of 28 students (27 women, 1 man) completed both pre- and postassessments. Participants ranged in age from 19 to 46 ($M = 22.39$, $SD = 5.14$, $Mdn = 21$). The majority of the participants (22 of 28) identified themselves as White or Caucasian; 4 of 28 as Hispanic, Latina, or Latino; 1 as Asian American or Pacific Islander; and 1 as multiracial. Almost all participants (26 of 28) identified themselves as exclusively heterosexual, 1 as mostly heterosexual, and 1 as exclusively lesbian or gay.

Procedures

We expected that creating their individual posters would teach students about their assigned woman in psychology but not necessarily about other women in psychology. Given that the aim of the activity was to teach students about the contributions of multiple women in psychology, we were interested in the unique impact of the follow-up exercise. We used pre- and posttests to assess the impact of the poster follow-up exercise. More specifically, after turning in their posters (Time 1) and after turning in their follow-up assignments 2 weeks later (Time 2), we asked students to list as many (a) names of women in psychology and (b) contributions of these women to psychology as they could. Thus, the pretest provided a baseline assessment of each student’s knowledge about women in psychology (accumulated in the present or other courses) prior to completing the poster follow-up exercise.

Two independent judges rated the accuracy of names and contributions that students listed; we created three separate dependent variables based on these ratings. These dependent variables were (a) names (1 point for each accurate name), (b) contributions (1 point for each accurate contribution), and (c) names matched with their contributions (1 point for each name listed with at least one accurate matching contribution). These three dependent variables allowed us to separate the extent to which students learned names of women in psychology, contributions of women to psychology, and the names of women in psychology and their contributions. Judges used partial credit (i.e., .5 points) when contributions

listed were accurate but did not capture fully the essence of the contributions of the woman (e.g., Anna Freud extended her father’s work). Interrater reliability was 100%, 100%, and 96% for number of correct names, contributions, and matched names and contributions, respectively. The single discrepancy in matched names and contribution reflected disagreement on a student who listed Florence Lane instead of Florence Cane but a correct contribution posttest. We resolved this discrepancy conservatively and did not give the student a point for this response for matched name and contribution posttest.

Results

We conducted repeated measures (i.e., within subjects) ANOVAs to compare students’ pre- and posttest knowledge of names, contributions, and name–contribution matches of women in psychology. For each dependent variable, we found a significant increase from pre- to posttest, and the magnitude of effect sizes (i.e., η^2) was notable. More specifically, students identified significantly more names of women in psychology at posttest ($M = 4.75$, $SD = 2.22$) than at pretest ($M = 3.00$, $SD = 1.25$), $F(1, 27) = 27.81$, $p < .0001$, $\eta^2 = .51$. Similarly, the number of contributions listed at posttest ($M = 4.80$, $SD = 2.87$) was significantly greater than that at pretest ($M = 3.48$, $SD = 1.82$), $F(1, 27) = 6.91$, $p < .05$, $\eta^2 = .20$. Furthermore, the number of matched posttest names and contributions ($M = 3.89$, $SD = 2.24$) was significantly greater than the number of matched pretest names and contributions listed ($M = 2.71$, $SD = 1.24$), $F(1, 27) = 11.34$, $p < .01$, $\eta^2 = .30$.

Descriptive data indicated that most students demonstrated an increase from pre- to postassessment on each of the three dependent variables, with 61%, 68%, and 64% reporting more post- than pretest names, contributions, and matched names and contributions, respectively. In addition, visual inspection of data from 5 students who completed only the pretest and 9 students who completed only the posttest (because they were late or absent during one of the assessments) revealed the same pattern as that found for the other students. Small sample sizes precluded statistical comparisons of the two groups but descriptive data indicated the trend that average scores for those who had not yet completed the follow-up exercise were lower ($M_{name} = 3.20$, $SD_{name} = 1.48$; $M_{contribution} = 2.50$, $SD_{contribution} = 1.41$; $M_{match} = 2.50$, $SD_{match} = 1.41$) than for those who had completed the follow-up exercise ($M_{name} = 3.89$, $SD_{name} = 2.15$; $M_{contribution} = 4.06$, $SD_{contribution} = 1.94$; $M_{match} = 3.50$, $SD_{match} = 1.97$).

Discussion

The purpose of the Women in Psychology Posters follow-up exercise was to increase students’ awareness of the contributions of women to psychology. Results supported the effec-

tiveness of this assignment. More specifically, students (a) listed more names of women who contributed to psychology, (b) identified more contributions of women to psychology, and (c) reported more women along with their accurately matched contributions following the assignment than they did before the assignment. The findings of this study are especially compelling because the use of a within-subjects design allowed us to use students as their own controls and demonstrated the effectiveness of the follow-up exercise beyond potential instructor effects or possible uniqueness of the students in this particular class. Furthermore, the effect sizes for the pre- to posttest changes in this study were comparable to that typically found in intervention research. More specifically, Lipsey and Wilson's (1993) meta-analysis of educational, psychological, and behavioral intervention effects, which other authors (e.g., Hyde & Plant, 1995) have used as a baseline for comparison, indicated that approximately 67% of the 302 effect sizes examined were between .11 and .65 (6% were lower and 27% were higher than this range). The effect sizes for this exercise (i.e., .20, .30, and .50) were well within this typical range.

Thus, our results suggest that the Women in Psychology Posters follow-up assignment can serve as a useful tool for redressing the invisibility of women and their contributions to psychology. This assignment can be used in a variety of courses and can teach students about the contributions of women to psychology in general (e.g., history of psychology, psychology of women) or to specific areas in psychology (e.g., social, developmental). Moreover, this exercise can be modified to teach students about the contributions of other groups (e.g., racial or ethnic minority persons, non-Western scholars) to psychology.

Instructors should be aware of some potential challenges when using this exercise. First, students may experience some difficulty when attempting to find information about the contributions of women (or other groups) to psychology. Instructors can work with a reference librarian to reserve or request relevant resources and place them together in a collection for students to access. In addition, instructors can encourage students to conduct PsycINFO and PsycLIT searches to find original work by women. Original works might be the most fruitful source of information on some women in psychology. Second, when displaying students' posters is not feasible due to space limitations, students can create booklet pages to place in a binder that is made available to students during office hours or on reserve at the library for completion of the follow-up assignment.

Our study did not compare the effectiveness of the poster exercise to other forms of instruction (e.g., lectures, readings), and replicating these findings with other samples is necessary. Nevertheless, by developing a simple and creative exercise that extends the works of Furumoto (1985) and

Paludi (1991) and by demonstrating empirically the effectiveness of this exercise in this course, we hope to have added to the tools that instructors can employ to teach students about the many contributions of women to psychology.

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Appendix
Alphabetical List of Women in Psychology

Adkins, Dorothy Christina	Greene, Beverly
Ainsworth, Mary	Halpern, Diane
Albino, Judith E. N.	Heidbreder, Edna
Anastasi, Anne	Helson, Ravenna Mathews
Bailey, Marian Breland	Henle, Mary
Barnett, Rosalind C.	Inhelder, Barbel
Baumgarten-Tramer, Franziska	Isaacs, Susan
Bayley, Nancy	Jacobson, Edith
Bem, Sandra Lipsitz	Jahoda, Marie
Bernal, Martha	Jameson, Dorothea
Brown, Laura S.	Johnson, Norine
Brunswick, Ruth	Jones, Mary Cover
Bryant, Alice I.	Kent, Grace
Buhler, Charlotte Malachowski	Kitzinger, Celia
Buros, Luella Gubrud	Klein, Melanie
Buxbaum, Edith	Lacey, Beatrice
Calkins, Mary Whiton	Ladd-Franklin, Christine
Cane, Florence	Landrine, Hope
Cantor, Dorothy	Loevinger, Jane
Caplan, Paula	Loftus, Elizabeth F.
Cass, Vivienne	Maccoby, Eleanor Emmons
Cattell, Psyche	Mahler, Margaret Schonberger
Chesler, Phyllis	Martin, Lillian Jane
Chin, Jean Lau	Mayo, Clara Weiss
Chodorow, Nancy	McGraw, Myrtle
Clark, Mamie Phipps	Mednick, Martha
Comas-Diaz, Lillian	Merrill (James), Maud Amanda
Culbertson, Frances Mitchell	Miller, Jean Baker
Daniel, Jessica Henderson	Milner, Brenda
Deaux, Kay	Montessori, Maria
Dembo, Tamara	Moore, Kate Gordon
Denmark, Florence Levin	Murphy, Lois Barclay
Deutsch, Helene	Naumburg, Margaret
Dewing, Frances Hall Rousmaniere	Neugarten, Bernice Levin
Dix, Dorothea	Norsworthy, Naomi
Downey, June Etta	Pappenheim, Bertha (Anna O.)
Dunbar, Helen Flanders	Payton, Carolyn Robertson
Eagly, Alice	Perls, Laura
Fausto-Sterling, Anne	Prosser, Inez Beverly
Fiske, Susan	Puffer, Ethel
Frenkel-Brunswick, Else	Reskin, Barbara
Freud, Anna	Rickers-Ovsiankina, Maria
Fromm-Reichmann, Frieda	Roe, Anna
Gardiner, Muriel	Root, Maria
Garnets, Linda	Russo, Nancy Felipe
Gergen, Mary	Scarr, Sandra Wood
Gibson, Eleanor Jack	Sears, Pauline Snedden
Gilbreth, Lillian Moller	Sexton, Virginia Staudt
Gilligan, Carol	Sherif, Carolyn Wood
Goodenough, Florence Laura	Shinn, Milicent
Goodnow, Jacqueline Jarrett	Smith, Theodate Louise
Greenacre, Phyllis	Spence, Janet Taylor

Starovoitova, Galina
Strickland, Bonnie Ruth
Swim, Janet
Thompson, Clara
Thurstone, Thelma Gwinn
Tyler, Leona Elizabeth
Walker, Lenore
Wallston, Barbara

Washburn, Margaret Floy
Weisstein, Naomi
Wellman, Beth Lucy
Wilbur, Cornelia
Woolley, Helen Bradford Thompson
Wortman, Camille
Yoder, Janice
Zeigarnik, Bluma

Note. This list includes women who have made a historical or contemporary contribution to psychology. Various inclusion and exclusion criteria can be used to modify this list as appropriate for different courses.

Notes

1. We thank Rachel Bartley, Danielle Dirks, and Marcie Wiseman for their assistance with data entry and cleaning.
2. Send correspondence to Bonnie Moradi, P.O. Box 112250, Gainesville, FL 32611-2250; e-mail: moradib@ufl.edu.