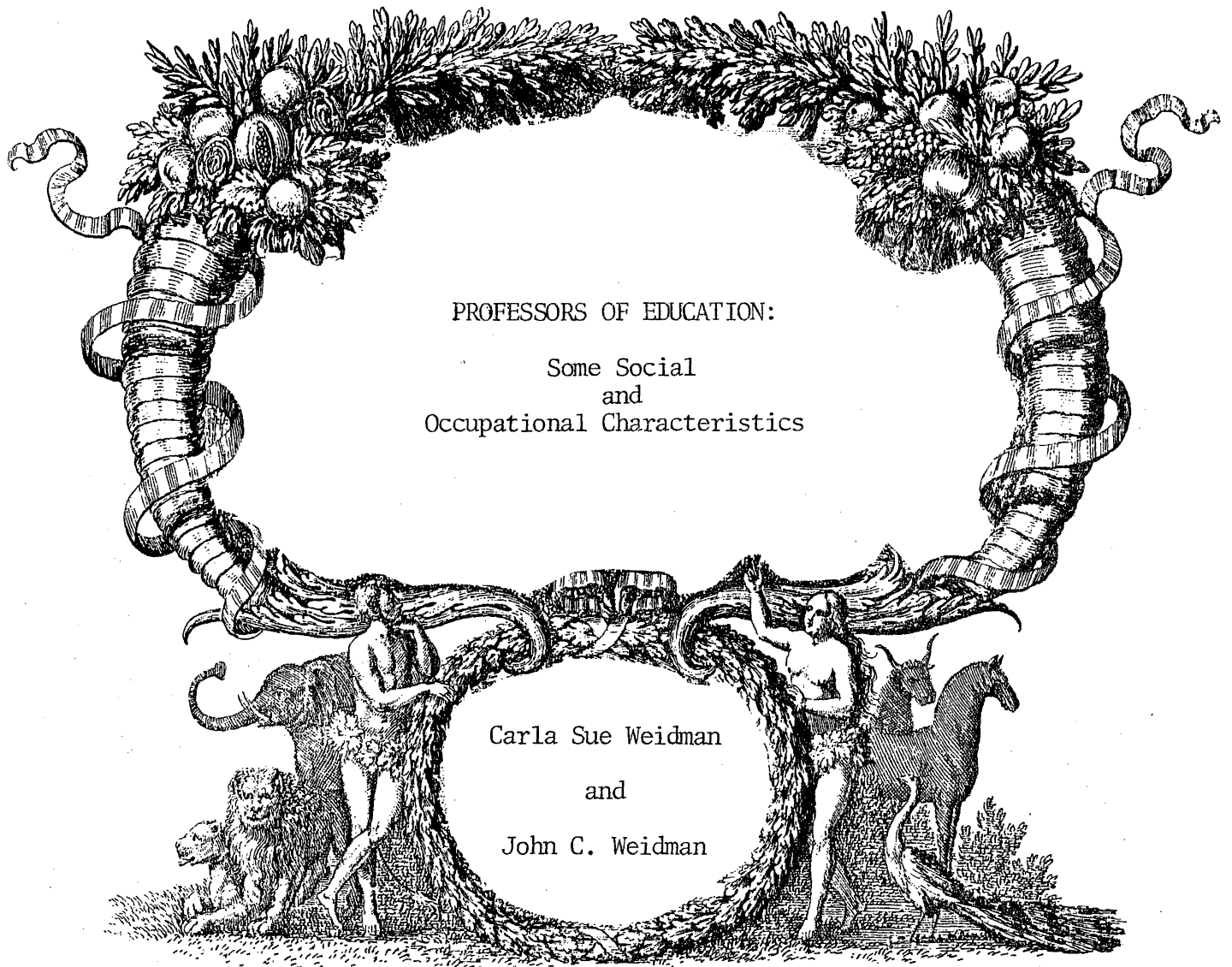


Part Three

*Equality is the chief groundwork of equity.*

*Essays I. xix.*  
*--Montaigne*



PROFESSORS OF EDUCATION:  
Some Social  
and  
Occupational Characteristics

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The basic question explored in this inquiry is whether or not there are important differences in social background and career patterns between male and female professors of education. Our conclusions are based on an analysis of data from a recent national survey of college and university professors.<sup>1</sup> While our exploration does not exhaust the field of inquiry, it has revealed a number of important relationships as well as a wealth of data about the

education professoriate, a group heretofore relatively under-represented in the empirical research on academic professions.

The field of education has traditionally attracted more female than male majors, both in undergraduate and graduate programs. Statistics for 1969-70 show that women earned 75% of the bachelor's degrees in education but only 55% of the masters and 20% of the

doctorates.<sup>2</sup> The ratio of four male doctorates to each female doctorate granted in education has remained constant in the years from 1928 through 1970. Nevertheless, even though the percentage of women earning doctorates in education is disproportionately small, education is the field in which the largest number of doctorates are awarded to women.<sup>3</sup>

In addition to the discrepancy between the number of women undergraduate majors and doctorates in education, recent research has substantiated sex discrimination in the areas of rank and salary.<sup>4</sup> Unfortunately, little of the research has examined education as a separate field. A recent survey by J. Centra did include a small sample of education doctorates,<sup>5</sup> but he reported no contrasts by sex.<sup>5</sup>

A review of selected literature on college and university faculty members leads to the following expectations about sex differences in social backgrounds and career patterns of education professors:

1. The socioeconomic origin of women faculty members is higher than that of men.<sup>6</sup>
2. Males are more likely to be married than their female colleagues.<sup>7</sup>
3. A longer time lapse intervenes between bachelor's degree and doctorate for women than for men.<sup>8</sup>
4. Comparatively lower ranks and salaries are assigned to women, even when highest degree obtained and productivity are held constant.<sup>9</sup>
5. A disproportionately larger number of scholarly publications are produced by men.<sup>10</sup>
6. Women producing the largest number of scholarly publications tend to be from lower socioeconomic backgrounds.<sup>11</sup>

7. Women producing the smallest number of scholarly publications are married.<sup>12</sup>

## II

The data analysis did not support all of our expectations; we found some evidence which contradicted previous findings and some which caused us to qualify some of our expectations.<sup>13</sup> Female professors of education, for instance, do not come from higher socioeconomic backgrounds than those of their male colleagues. Rather, the data pointed out that a clear majority of all education professors have middle class origins as indicated by their father's occupation (Table 1). White collar homes yield 54.2% of the male, and 54% of the female, professors of education. Of those education professors who are from professional backgrounds, women do exceed men by 5.1%. But the overwhelming statistical fact is that professors of education, men and women alike, emerge from middle or lower socioeconomic backgrounds, i.e., 87.7% of the males, 82.6% of the females.

There is a difference in marital status between male and female education professors (Table 2). A substantially larger proportion of women professors of education remain single (39%) than do men (7.1%). This may indicate an awareness among women of the difficulties of combining family obligations with career demands, a consideration more salient for women than for men in American society. Whereas marital status may be positively related to academic success for men, it often creates role conflict and extraordinary demands on women who strive to maintain professional status.<sup>14</sup>

That women tend to take a longer time than men in obtaining a Ph.D. is shown in Table 3. This difference may reflect the effects of sex discrimination in graduate school admissions, especially at the doctoral level, as

well as the trend for women to resume their graduate training after an interim period of child-rearing. The difference in length of time is not so striking for professors whose highest degree is a doctorate other than the Ph.D. or a master's degree. We note, too, that there is a discrepancy between the proportion of women who have Ph.D.'s (18.5%) and the proportion of men who have Ph.D.'s (31.0%). (Women are much more likely than men to have only a master's degree.) These differences may indicate differential career aspirations by sex.

Our findings on rank and salary firmly support the contention that there is discrimination against women. Because of differential hiring practices, it seemed important to treat universities and four-year colleges separately. In the present sample, women are much more likely to be employed in colleges (69.6%) than in universities (31.4%), while men are equally likely to be employed in colleges (50.7%) and universities (49.3%).

Discrimination against women in rank and salary appears to be more pervasive in the universities than in the four-year colleges, a finding which suggests that women hired by universities are less likely to receive the institutional rewards enjoyed by their counterparts in colleges. The discrepancy between the status of women in colleges and universities is not as great for type of appointment as for the other institutional variables. Nevertheless, as Table 4 indicates, (women in universities are somewhat less likely to have a regular appointment with tenure than women in colleges.) Women professors of education are almost twice as likely to have non-tenure track positions (Acting, Visiting) as are men, in both colleges and universities.

When the highest degree is held constant, men in both universities and colleges are more likely to hold the rank of professor than are women (Tables

5 and 6). However, this sex differential is much more pronounced for universities than for colleges. (Women professors of education in colleges who hold a doctorate other than the Ph.D. are a little more likely to hold the rank of professor than men in this degree category.) Similarly, more of these women occupy the rank of professor than do women with Ph.D.'s teaching in colleges. Both men and women professors of education in colleges are more likely to have a higher rank, holding degrees constant, than their counterparts in universities.

An analysis of salaries allotted to men and women professors of education reveals clear and consistent differentials favoring men. (Women education professors in universities are paid less than their male counterparts at all ranks, according to Table 7.) The same is true for women education professors in four-year colleges; this can be seen in Table 8.

We analyzed the data to determine relationships between salaries and highest degree earned. Table 9 presents the findings for men and women professors of education in universities. There is a clear cut pattern: men tend to draw higher salaries than do women, independent of highest degree earned. The same relationships between the salaries for men and women professors is present in four-year colleges, as Table 10 shows.

Since the amount of scholarly productivity might be an important variable in salary increases, we examined the relationship between scholarly productivity and salaries. Because the journal article is the most prevalent mode of scholarly writing, it is reasonable to use number of published journal articles as a measure of productivity. (The pattern of salary differentials favoring men over women is apparent in all productivity categories, with the most dramatic differential by sex among those professors with eleven

or more published articles, as Table 11 shows. Similar findings appear in Table 12 for education professors in four-year colleges, excepting one notable reversal. Women professors of education in four-year colleges who have published eleven or more articles actually earn more than their male counterparts. This one ray of optimism dims, however, in view of the very low number of subjects in this category (the weighted n of 81 is probably based on a raw n of 10-20).

One other set of relationships, those between highest degree and scholarly productivity for men and women professors of education, appear in Tables 13 and 14. Among those education faculty members with doctorates in universities, the productivity of men was much greater than that of women. The differential in productivity by sex was much smaller for college faculty. In both types of institutions, however, there was a greater sex differential in productivity among those faculty members with Ed.D.'s and other doctorates than there was among the Ph.D.'s.

Finally, we examined doctorate holders for relationships between scholarly productivity and marital status, and between scholarly productivity and father's occupation, controlling in both cases for sex. (Married women with the Ph.D. tend to be more productive than single women with the Ph.D., contrary to the expectations (Table 15). There is no productivity differential by marital status among men with the Ph.D. Among those holding the Ed.D. or another doctorate, married men are more productive than single men. This is apparent in Table 16. Conversely, single women holding the Ed.D. or another doctorate are more productive than their married counterparts. This finding confirms expectations.

Also confirming expectations is the finding reported in Table 17 that women with the Ph.D. from working class backgrounds are more productive than women

with the Ph.D. from white collar and professional families. Yet for men with the Ph.D., those from professional families tend to be the most productive.

Among women professors of education with the Ed.D. or another doctorate, those from working class families tend to be less productive than others from professional and white collar families. This is evident in Table 18. Among men with the Ed.D. or another doctorate, there is virtually no productivity differential by family background.

### III

The striking finding in this study was a confirmation of rank and salary differentials favoring men, even when highest degree and productivity were controlled. This differential is consistent for both four-year colleges and universities. Although the data used in this study were collected in 1969, shortly before the advent of affirmative action programs, Centra's data for recent doctorates, which was collected in 1973, displays similar patterns of salary and rank differentials by sex.<sup>15</sup> This raises the question of whether sex discrimination has diminished during the past five years. These findings of differential treatment of men and women are especially challenging to departments and colleges of education which administer a field that has traditionally attracted large numbers of women.

### Appendix

Data for this study are from the National Survey of Higher Education conducted by the Carnegie Commission on the Future of Higher Education in cooperation with the American Council on Education.<sup>16</sup> Bayer provides the following description of the sample design for the National Survey of Higher Education.<sup>17</sup>

*In March of 1969 the survey questionnaire was mailed to a*

sample of regular faculty at 303 U.S. colleges and universities, primarily those institutions which participated in the 1966 Cooperative Institutional Research Program of the American Council on Education.<sup>18</sup> A disproportionate random sampling design was used in selecting these institutions in order to obtain adequate numbers of institutions of various types and characteristics.<sup>19</sup> The 303 institutions. . . include 57 junior colleges, 168 four-year colleges and 78 universities. They range in size from a faculty of fewer than 20 to a faculty of more than 4000.

The 303 institutional representatives for the ACE Cooperative Institutional Research Program were sent letters... which requested that they provide rosters showing the names and addresses of all regular teaching faculty at their institutions. A six in seven random sample of faculty was selected from these rosters for the survey; included were 100,315 regular faculty--from both academic departments and professional schools--who were responsible for the teaching of any degree-credit course during the 1968-1969 academic year. . . Usable returns were finally received from 60,028 respondents (59.8 per cent).

Systematic investigations of non-response bias indicated that the sample achieved was very close to the criterion sample developed prior to the data collection that was based on actual distributions of faculty among various types of institutions.<sup>20</sup> The only discrepancies discovered between the achieved and criterion samples were small overrepresentations of Ph.D. holders and individuals interested in research or research and teaching.

To estimate national norms for education faculty, the data were weighted. A detailed discussion of the weighting procedure can be found in Trow, et al.<sup>21</sup> Bayer describes the following weighting procedure for the

National Survey of Higher Education:<sup>22</sup>

Three sets of weights were developed. The first is a between-college weight which adjusts the data for the disproportionate sampling of institutions from the population. The second is within-college weight which adjusts for the six in seven sampling of faculty and for the differential response rates of faculty (by degree level) at the various institutions. The third, the subject weight, is the product of the first two and was applied in the subsequent processing of subject data records on file.

All tables in this paper are based on weighted data, i.e., each individual's responses are weighted by his or her subject weight. Because the data are weighted, no tests of statistical significance are used. The raw n for the sample used in the present research is 3049; the weighted n is 23,806. 26.6 percent of the weighted sample are women. A comparison of the National Survey of Higher Education weighted data with another study of education professors based on U.S. Office of Education statistics done by Counelis indicated similar distributions of education faculty in universities (Counelis, 41.2%; National Survey, 45.1%) and in four-year colleges (Counelis, 58.8%; National Survey, 54.9%).<sup>23</sup> In the weighted sample, 53.1 per cent of the men and 60.6 per cent of the women teach more than six hours of classes each week.

Included in the present research are education faculty who marked one of the following categories printed on the questionnaire as their "present principal teaching field:" "education;" "elementary and/or secondary;" "foundations;" "educational psychology and counseling;" "educational administration;" and "other education fields". Not included in our study are data for professors of physical education and industrial arts education.

Table 1

## Father's Occupation of Education Professors by Sex

<i>Father's Occupation</i>	Men%	Women%
Professional <sup>a</sup>	12.3	17.4
White Collar <sup>b</sup>	54.2	54.0
Semi- and Unskilled Labor	33.5	28.6
Weighted N	17,469	6,258

<sup>a</sup>Includes: College-University Teacher, Researcher or Administrator; Other professional; Owner large business.

<sup>b</sup>Includes: Elementary & Secondary School Teacher or Administrator; Managerial, Administrative, Semi-professional; Owner, small business; Farmer, owner or manager; Other white collar, Clerical, Retail Sales; Armed Forces.

Table 2

## Marital Status of Education Professors by Sex

<i>Marital Status</i>	Men%	Women%
Married	89.8	46.1
Single (formerly married)	3.0	14.8
Single	7.1	39.1
Weighted N	17,456	6,292

Table 3

Amount of Time Between B.A. and Highest Degree  
of Education Professors by Sex

<i>Time</i>	Ph.D.		Other Doctorate		M.A. M.Ed.		Other	
	Men%	Women%	Men%	Women%	Men%	Women%	Men%	Women%
Less than 1 yr.	.3	0	2.4	4.6	60.8	29.8	81.9	100.0
1-4 yrs.	6.0	4.3	5.4	7.6	13.2	31.8	4.7	0
5-10 yrs.	46.8	31.3	33.4	31.7	19.9	24.9	11.9	0
11+ yrs.	46.9	64.4	58.8	56.1	6.1	13.4	1.5	0
Weighted N	5192	1163	7068	1271	4299	3440	278	229



Table 4

Type of Appointment of Education Professors  
by Type of Institution and Sex

Appointment	University		Four-Year College	
	Men%	Women%	Men%	Women%
Reg/Tenure	49.7	38.4	49.4	44.1
Reg/without Tenure	46.4	54.5	45.9	47.6
Visiting, Acting	3.9	7.2	4.7	8.3
Weighted N	8561	1979	8812	4329

Table 5

Rank in Universities of Education Professors  
by Highest Degree and Sex

Rank	Ph.D.		Other Doctorate		M.A. M.Ed.		Other	
	Men%	Women%	Men%	Women%	Men%	Women%	Men%	Women%
Professor	37.8	26.2	31.4	28.6	5.4	2.9	7.7	0
Associate Professor	26.9	30.3	29.2	29.2	6.2	10.3	6.9	0
Assistant Professor	31.9	37.5	32.8	31.8	28.2	25.2	25.1	26.7
Other	3.5	6.0	6.5	10.6	59.6	61.6	60.3	73.3
Weighted N	3618	564	3382	486	1345	832	119	53

Table 6

Rank in Four-Year Colleges of Education Professors  
by Highest Degree and Sex

Rank	Ph.D.		Other Doctorate		M.A. M.Ed.		Other	
	Men%	Women%	Men%	Women%	Men%	Women%	Men%	Women%
Professor	54.6	34.9	42.4	47.4	5.1	.1	11.5	0
Associate Professor	25.3	35.6	39.5	20.9	28.1	12.2	18.3	0
Assistant Professor	16.3	25.9	16.6	26.3	34.8	44.9	34.9	25.9
Other	3.8	3.6	1.5	5.4	32.0	42.8	35.3	74.4
Weighted N	1508	509	2626	784	2965	2639	196	176

Table 7

Salary in Universities of Education Professors  
by Rank and Sex

	Professor		Associate		Assistant		Other	
	Men%	Women%	Men%	Women%	Men%	Women%	Men%	Women%
<i>9-month salary</i>								
9,999 or less	.4	3.5	2.1	11.6	12.7	46.6	55.0	90.5
10,000-11,999	1.6	14.9	18.9	27.8	58.9	45.5	21.6	6.8
12,000-13,999	11.8	29.7	45.3	42.1	25.5	7.9	11.5	2.3
14,000-16,999	41.0	44.3	28.6	17.3	2.4	0	6.7	.4
17,000-19,999	30.3	7.5	5.2	1.2	.5	0	2.7	0
20,000 or more	14.8	0	0	0	0	0	2.5	0
Weighted N	2538	320	2057	407	2700	596	1232	654

Table 8

Salary in Four-year Colleges of Education Professors  
by Rank and Sex

	Professor		Associate		Assistant		Other	
	Men%	Women%	Men%	Women%	Men%	Women%	Men%	Women%
<i>9-month salary</i>								
9,999 or less	10.2	41.1	9.1	41.3	37.6	72.5	79.0	87.4
10,000-11,999	10.3	5.4	38.0	38.7	49.6	16.4	11.3	7.0
12,000-13,999	25.2	18.4	38.0	10.2	7.8	7.1	6.5	5.6
14,000-16,999	28.5	27.4	12.5	8.0	4.9	4.0	3.3	0
17,000-19,999	22.1	4.6	1.9	1.8	0	0	0	0
20,000 or more	3.6	3.1	.6	0	0	0	0	0
Weighted N	2587	608	2893	688	1997	1573	1306	1373

Table 9

Salary in Universities of Education Professors  
by Highest Degree and Sex

	Ph.D.		Other Doctorate		M.A. M.Ed.		Other	
	Men%	Women%	Men%	Women%	Men%	Women%	Men%	Women%
<i>9-month salary</i>								
9,999 or less	4.1	16.9	6.0	28.3	48.3	76.1	43.4	82.2
10,000-11,999	26.6	31.1	25.2	28.5	32.4	17.4	14.8	0
12,000-13,999	25.9	32.3	27.4	20.3	12.3	3.5	24.8	17.8
14,000-16,999	23.1	18.0	25.7	22.1	3.7	1.1	13.3	0
17,000-19,999	15.0	1.8	10.4	.7	2.1	1.8	0	0
20,000 or more	5.4	0	5.4	0	1.2	0	3.7	0
Weighted N	3613	554	3362	478	1337	833	114	53

Table 10

Salary in Four-year Colleges of Education Professors  
by Highest Degree and Sex

	Ph.D.		Other Doctorate		M.A. M.Ed.		Other	
	Men%	Women%	Men%	Women%	Men%	Women%	Men%	Women%
<i>9-month salary</i>								
9,999 or less	11.5	34.3	8.7	47.7	51.1	81.9	42.7	58.9
10,000-11,999	17.4	22.6	30.4	17.7	31.5	13.7	35.4	22.2
12,000-13,999	31.7	12.4	27.5	14.3	15.1	4.1	7.2	18.9
14,000-16,999	20.3	23.6	22.0	18.6	1.8	.3	14.7	0
17,000-19,999	15.3	5.0	10.3	1.6	0	0	0	0
20,000 or more	3.8	2.2	1.0	.8	.4	0	0	0
Weighted N	1598	566	3666	768	2948	2600	196	176

Table 11

Salary in Universities of Education Professors  
by Number of Journal Articles Published and Sex

	No articles		1-4 articles		5-10 articles		11+ articles	
	Men%	Women%	Men%	Women%	Men%	Women%	Men%	Women%
<i>9-month salary</i>								
9,999 or less	33.1	74.2	13.1	42.4	3.4	9.5	2.1	6.0
10,000-11,999	36.2	19.3	34.9	35.5	25.7	15.5	9.6	13.6
12,000-13,999	19.7	3.3	27.1	15.7	33.0	49.2	18.5	34.9
14,000-16,999	8.6	2.5	18.3	5.3	24.3	24.1	31.5	42.1
17,000-19,999	1.6	.7	5.3	1.1	12.7	1.7	23.2	3.3
20,000 or more	.8	0	1.3	0	1.0	0	15.1	0
Weighted N	1654	798	3011	686	1458	228	2220	228

Table 12

Salary in Four-Year Colleges of Education Professors  
by Number of Journal Articles Published and Sex

	No articles		1-4 articles		5-10 articles		11+ articles	
	Men%	Women%	Men%	Women%	Men%	Women%	Men%	Women%
<i>9-month salary</i>								
9,999 or less	39.1	79.0	19.7	61.1	14.8	15.3	2.7	0
10,000-11,999	33.8	12.6	28.1	21.6	19.8	20.5	15.2	4.0
12,000-13,999	21.4	8.2	26.6	7.9	17.8	19.9	16.8	0
14,000-16,999	4.2	.2	17.2	8.9	23.1	39.8	41.8	65.0
17,000-19,999	1.4	0	7.3	0	22.1	4.5	16.5	15.4
20,000 or more	0	0	1.1	.5	2.4	0	7.0	15.6
Weighted N	3767	2488	3243	1289	1048	278	631	81

Table 13

Number of Journal Articles Published by Education Professors  
in Universities by Highest Degree and Sex

<i>Number of articles</i>	Ph.D.		Other Doctorate		M.A. M.Ed.		Other	
	Men%	Women%	Men%	Women%	Men%	Women%	Men%	Women%
None	12.1	12.9	15.0	25.0	48.1	69.3	60.2	66.1
1-4	33.2	44.5	39.1	37.2	38.8	26.3	19.7	33.9
5-10	22.0	20.4	16.7	18.7	8.5	2.5	9.0	0
11 or more	32.7	22.1	29.2	19.2	4.5	1.9	11.2	0
Weighted N	3567	552	3296	469	1306	825	106	53

Table 14

Number of Journal Articles Published by Education Professors  
in Four-Year Colleges, by Highest Degree and Sex

<i>Number of articles</i>	Ph.D.		Other Doctorate		M.A. M.Ed.		Other	
	Men%	Women%	Men%	Women%	Men%	Women%	Men%	Women%
None	25.0	23.6	30.1	44.8	66.1	70.6	48.5	100.0
1-4	41.8	47.0	44.8	34.5	25.5	27.0	48.4	0
5-10	18.9	20.6	15.3	14.6	7.2	2.5	3.2	0
11 or more	14.3	8.8	9.9	6.0	1.1	0	0	0
Weighted N	1587	583	3564	753	2943	2573	196	176

Table 15

Number of Journal Articles Published by Professors of Education  
with the Ph.D., by Marital Status and Sex

<i>Number of Articles</i>	Men		Women	
	Married%	Single%	Married%	Single%
None	15.8	21.9	9.5	25.6
1-4	36.1	30.8	53.7	38.3
5-10	20.3	33.9	21.1	20.4
11 or more	27.8	13.5	15.7	15.6
Weighted N	4876	278	623	483

Table 16

Number of Journal Articles Published by Professors of Education with the Ed.D. or Other Doctorate, by Marital Status and Sex

<i>Number of articles</i>	Men		Women	
	Married%	Single%	Married%	Single%
None	22.8	24.1	46.3	24.3
1-4	41.1	62.0	23.8	52.0
5-10	16.4	2.5	18.4	13.2
11 or more	19.6	11.3	11.6	10.5
Weighted N	6489	351	724	491

Table 17

Number of Journal Articles Published by Professors of Education with the Ph.D., by Father's Occupation and by Sex

<i>Number of Articles</i>	Men			Women		
	Profes- sional%	White <sup>a</sup> Collar%	Skilled, Semi-Skilled, Labor%	Profes- sional%	White Collar%	Skilled, Semi-Skilled, Labor%
None	9.6	17.9	15.5	28.9	14.7	14.3
1-4	31.9	36.4	36.2	40.5	3.6	31.4
5-10	36.9	18.7	18.3	16.9	12.7	47.3
11 or more	21.7	27.0	29.9	13.7	19.1	7.0
Weighted N	699	3034	1416	302	613	219

<sup>a</sup>See notes for Table 1.

Table 18

Number of Journal Articles Published by Professors of Education with  
the Ed.D. or Other Doctorate, by Father's Occupation and by Sex

<i>Number of Articles</i>	Men			Women		
	Profes- sional%	White <sup>a</sup> Collar%	Skilled, Semi-Skilled, Labor%	Profes- sional%	White Collar%	Skilled, Semi-Skilled, Labor%
None	22.4	20.5	26.0	39.3	35.8	38.3
1-4	41.6	39.8	45.2	25.9	34.3	42.1
5-10	14.6	18.2	13.6	16.9	17.0	14.6
11 or more	21.3	21.6	15.3	17.9	12.9	4.9
Weighted N	853	3352	2652	200	618	404

<sup>a</sup>See notes for Table 1.

NOTES

1. This article is based in part on data gathered by the National Survey of Higher Education, sponsored by the Carnegie Commission on Higher Education and supported in part as a cooperative research project by funds from the U. S. Office of Education. Detailed information on these surveys can be found in Martin A. Trow, et al, *Technical Report: Carnegie Commission National Survey of Higher Education* (Berkeley, California: Carnegie Commission on Higher Education, 1972). Support for the data analysis in this article was provided by the University of Minnesota Computer Center.
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The relatively disadvantaged status of academic women seems to have improved very little with respect to rank and salary as late as 1973. This conclusion follows from recently reported analyses of data from a 1973 replication of the survey on which the present article is based. See A. E. Bayer and H. S. Astin, "Sex Differentials in the Academic Reward System," *Science*, vol. 188, no. 4190 (May 23, 1975), pp. 796-802.
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*I am in earnest -- I will not equivocate -- I will not excuse --  
I will not retreat a single inch and I will be heard.*

*The Liberator*  
-- William Lloyd Garrison