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Ott, Mary Diederich: Baker, Curtis, O.

Earned Degrees Conferred: Analysis of Trends, 1965-66

Through 1974-75.

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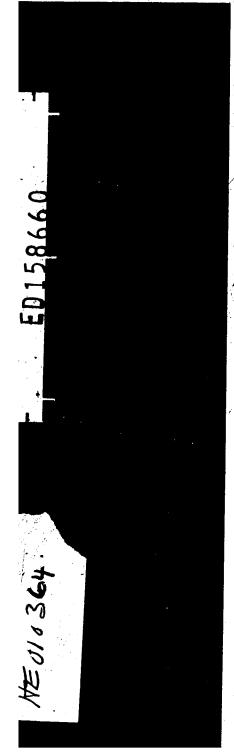
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#### ABSTRACT

The 10-year period 1965-66 through 1974-75, was one of notable growth in higher education, is summarized in statistical tables and commentary. Section I reports that the number of degrees awarded increased substantially at every level (bachelor's, master's, doctor's, and first-professional). Section II focuses on the number and proportions of men and women at each degree level and shows increased representation by women. Tables in Section III emphasize the number of degrees awarded by control and level of institution, indicating a decreasing proportion of degrees awarded by private institutions. Section IV analyzes the pattern of degrees awarded, by discipline division and by level for the five-year period 1970-71 through 1974-75. Discipline divisions that experienced the largest changes in numbers of degrees awarded are further analyzed in terms of specialties. At the bachelor's level, changes in numbers of degrees awarded in selected specialties (and thus changes in manpower supply) are compared with the projected labor demand for workers in these areas, using information from the Bureau of Labor Statistics. (Author/LBH)





# **EARNED DEGREES**

CONFERRED: ANALYSIS OF TRENDS, 1965-66 THROUGH 1974-75

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### HIGHLIGHTS

1. The number of degrees awarded at the bachelor's and higher levels increased by 84.1 percent between 1965-66 and 1974-75. By level, these increases were:

Bachelor's - 77.4 percent

First-professional - 85.4 percent

Master's - 108.6 percent

Doctor's - 86.9 percent

2. The percentage of degrees awarded to women increased at all levels. By 1974-75, women received:

45.4 percent of all bachelor's degrees

12.5 percent of all first-professional degrees

44.8 percent of all master's degrees

21.3 percent of all doctor's degrees

3. The percentage of degrees awarded by private institutions has declined at all levels. Between 1965-66 and 1974-75, this percentage declined from:

40.3 percent to 31.2 percent of all bachelor's degrees

60.6 percent to 57.5 percent of all first-professional degrees

40.1 percent to 33.7 percent of all master's degrees

40.9 percent to 34.9 percent of all doctor's degrees

4. In 1974-75, bachelor's degrees awarded declined for the first time in 20 years. This was primarily due to decline in the discipline divisions of social sciences, letters, and education.

# EARNED DEGREES CONFERRED: ANALYSIS OF TRENDS, 1965-66 THROUGH 1974-75

Mary Diederich Ott and Curtis O. Baker National Center for Education Statistics

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE Joseph A. Califano, Jr., Secretary

**Education Division** 

Mary F. Berry, Assistant Secretary for Education

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# FOREWORD

The basis for this report/is the data collected by the National Center for Education Statistics (NCES) on the survey instrument "Degrees and Other Formal Awards Conferred"—a part of the Higher Education General Information Survey (HEGIS) conducted annually by NCES. The data in this report have been published in annual reports entitled Earned Degrees Conferred.

This report is one in an increasing number of publications focusing on trends and significance of data collected by NCES. The Center welcomes comments on these reports.

The cooperation of the college and university officials who supplied the institutional data is gratefully acknowledged. Their work in preparing the survey responses has made this report possible.

Theodore H. Drews, Acting Director Division of Survey Planning and Analysis Edith M. Huddleston, Acting Chief Higher Education Surveys Branch

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# INTRODUCTION

The 10-year period 1965-66 through 1974-75 was one of notable growth in higher education. As is discussed in detail in section I of this report, the number of degrees awarded increased substantially at every level (bachelor's, master's, doctor's, and first-professional). It was a time of increased interest in the representation of women in higher education, and section II focuses on the number and proportions of men and of women at each degree level. In addition, the period witnessed a decreasing proportion of the degrees at each level awarded by private institutions. Section III emphasizes the number of degrees, awarded, by control and level of institution. Section IV analyzes the pattern of degrees awarded, by discipline division and by level for the 5-year period 1970-71 through 1974-75. Discipline divisions which experienced the largest changes in numbers of degrees awarded are further analyzed in terms of specialties. At the bachelor's level, changes in numbers of degrees awarded in selected specialties (and thus changes in manpower supply) are compared with the projected demand for workers in these areas, using information from the Bureau of Labor Statistics.

# EARNED DEGREES, BY LEVEL

The total number of degrees awarded at the bachelor's, master's, doctor's, and first-professional levels during the entire 10-year period was 10,711,130. Of this number, 73.0 percent were bachelor's, 20.5 percent were master's, 2.7 percent, were doctor's, and 3.8 percent were first-professional degrees. (See table 1.)

Table 1.—Number of degrees awarded, 1965-66 through 1974-75, by level

Levêl	evêl Number		
Bachelor's	7,814,147	73.0	
Master's	2,200,310	20.5	
Doctor's	286,196	2.7	
First-professional	410,477	- 3.8	
Total	10,711,130	100.0	

The total number of degrees awarded each year increased from 714,624 in 1965-66 to 1,320,739 in 1973-74, then decreased to 1,315,659 in 1974-75 (primarily because of a decrease in bachelor's degrees awarded in 1974-75). (See table 2.) The total number of degrees awarded in 1974-75 was 84.1 percent larger than the number awarded in 1965-66, (See table 3.)

The percentage distribution of degrees among levels at the end of the 10-year period differed from that at the beginning (see table 3) in regard to bachelor's and master's degrees, but not in regard to doctor's or first-professional degrees. Bachelor's degrees were 73.5 percent of the degrees awarded in 1965-66 and 70.8 percent of those awarded in 1974-75. This decrease was counterbalanced by an increase in the percentage of master's degrees, which changed from 19.7 percent in 1965-66 to 22.3 percent in 1974-75. Doctor's degrees accounted for 2.6 percent in 50th years; first-professional degrees for 4.2 percent in 1965-66 and 4.3 percent in 1974-75. Thus, the only change in the distribution of degrees among levels between 1965-66 and 1974-75 was that

the percentage of bachelor's degrees decreased and the percentage of master's and first professional degrees increased.

#### A. BACHELOR'S DEGREES

The total number of bachelor's degrees awarded during the 10-year period was 7,814,147. Table 2 and figure 1 show the number of bachelor's degrees awarded annually increased from 525,265 in 1965-66 to 954,376 in 1973-74, then decreased to 931,663 in 1974-75. Thus, the number of bachelor's degrees awarded was 77.4 percent larger in 1974-75 than in 1965-66. (See table 3.) This percentage increase in bachelor's degrees during the 10-year period was the smallest growth rate among the four degree levels. Apparently, an increasing proportion of the baccalaureate recipients has been going on to earn advanced degrees.

#### **B. MASTER'S DEGREES**

The total number of master's degrees awarded during the 10-year period was 2,200,310. The number of master's degrees awarded annually increased steadily throughout the period, from 140,772 in 1965-66 to 293,651 in 1974-75. (See table 2 and figure 1.) The number of master's degrees awarded was 108.6 percent larger in 1974-75 than in 1965-66. (See table 3.) The percentage increase in master's degrees for the 10-year period was the largest among the four degree levels.

# C. DOCTOR'S DEGREES

The total number of doctor's degrees awarded from 1965-66 through 1974-75 was 286,196. Table 2 and figure 2 show the number of doctor's degrees awarded annually increased from \$8,239 in 1965-66



<sup>&</sup>lt;sup>1</sup>The following degrees that contain the term "doctor" are included under first-professional degrees, below: D.D.S., D.M.D., D.O., D.P., D.P.M., D.V.M., J.D., M.D., O.D., Pod.D.,

Table 2.-Number of degrees awarded, 1965-66 through 1974-75, by level and year

Year		All levels	Bachelor's		Master's	•	Doctor's	First-prof.
1965-66		714,624	525,265	-	140,772		18,239	30,348
1966-67		773,375	562,942		157,892		20,621	31,920
1967-68	Ø.	871,832	<sub>3</sub> 637,337	•	177,150		23,091	34,254
19⁄68-69	•	990,286	734,002	•	194,414	• "	26,189	35,681
1/969-70		1,072,581	798,070	•	209,387	1.0	29,872	35,252
/1970-71		1,147,985	* 846,110	8	231,486		32,113	38,276
1971-72	¥.	1,224,027	<b>/</b> 894,110	,~ .	252,774		33,369	43,774
1972-73		1,280,022	930,272		264,525	•	34,790	50,4 <del>3</del> 5
1973-74		1,320,739	954,376	•	278,259	•	33,826	54,278
1974-75	,	1,315,659	931,663	_	293,651		34,086	56,259
1965-66	•				5		شر.	
through		10,711,130	7,814,147	2	,200,310		286,196	410,477
1974-75		_	• •	,	, , , ; -	7		1,,,,

Table 3.-Number of degrees awarded, 1965-66 and 1974-75, by level

	196	5-66	1974	Percentage		
Level	Number	Percent of total	Númber	Percent of total	increases 1965-66 - 1974-75	
Bachelor's	525,265	73.5	931,663	70.8	7.7.4	
Master's	140,772	-19.7 <sup>****</sup>	293,651	22.3		
Doctor's	18,239	2.6	34,086	2.6	86.9	
First-professional	30,348	4.2	56,259	4.3	85.4	
Total 1	714,624	100.0	1,315,659	100.0	84.1	

to a maximum of 34,790 in 1972-73, decreased to 33,826 in 1973-74, then increased slightly to 34,086 in 1974-75. Thus, the number of doctor's degrees awarded in 1974-75 was 86.9 percent larger than the number awarded in 1965-66 (see table 3), contributing to the widely perceived oversupply of Ph.D's in 1975 and 1976.

## D. FIRST-PROFESSIONAL DEGREES

From 1965-66 through 1974-75, 410,477 first-professional degrees were awarded in the eight discipline specialties included among first-professional

degrees.<sup>2</sup> As shown in table 2 and figure 2, the number of first-professional degrees awarded increased annually from 30,348 in 1965-66 to 35,681

<sup>&</sup>lt;sup>2</sup>As used in this publication, a first-professional degree meets the following four criteria:

<sup>1.</sup> It signifies the completion of the academic requirements to begin practice in the profession; (2) it is based on a program requiring at least 2 years of college work prior to entrance; (3) at least 6 academic years of college work are required to complete the degree program, including prior required college work plus the length of the professional curriculum itself; and (4) it is in one of the following specialties: dentistry, medicine, optometry, osteopathic medicine, podiatry, veterinary medicine, law, theology

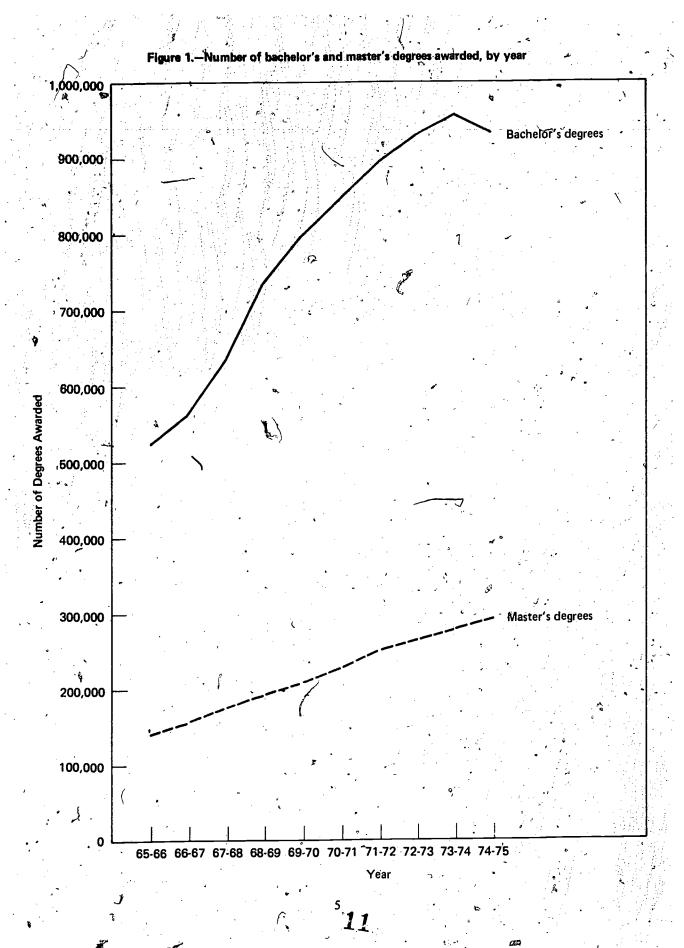
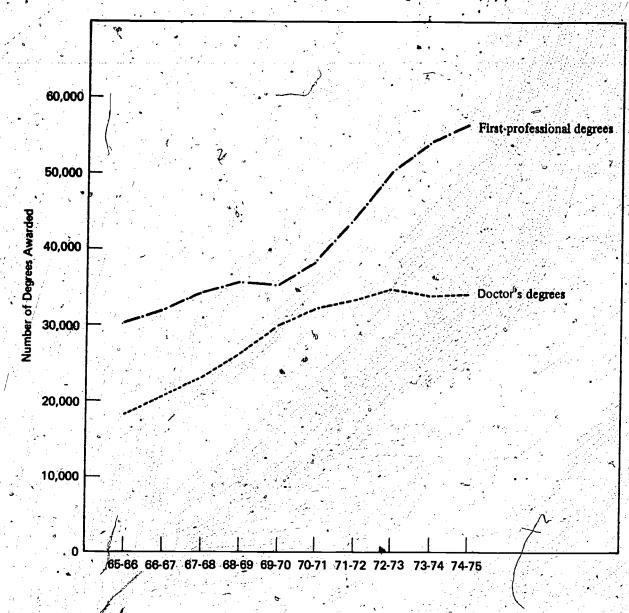




Figure 2.—Number of doctor's and first-professional degrees awarded, by year



in 1968-69, decreased slightly to 35,252 in 1969-70, then increased sharply to 56,259 in 1974-75. The number of degrees awarded was 85.4 percent larger in 1974-75 than in 1965-66. (See table 3.5°

#### E. SUMMARY

Master's degrees more than doubled during the 10-year period (1965-66 through 1974-75), contributing significantly to the 84.1 percent increase in

degrees conferred at all levels. The largest numerical increase (two-thirds of the increase for all degrees) occurred at the bachelor's level. Yet bachelor's degrees were increasing at a lower rate than degrees at any of the other three levels.

Conversely, the percentage increase in number of master's degrees awarded (108.6 percent) was larger than that at each of the other levels. Thus, master's degrees accounted for a larger percentage of the total degrees awarded in 1974-75 than in 1965-66. The increase in master's degrees is not directly related to

the number of bachelor's awards, probably due to the differential impact of labor market conditions at these levels. For instance, master's degrees may be obtained in order to upgrade qualifications in areas in which employment prospects are poor at the bachelor's degree level. Also, master's degrees are increasingly awarded routinely during progress towards the Ph.D.

Doctor's degrees and first-professional degrees grew at rates of 86.9 percent and 85.4 percent, respectively, over the 10-year period. These increases were just slightly larger than the total increase (84.4 percent) in degrees. Therefore, the percentage representations of degrees accounted for by doctor's and first-professional degrees did not change substantially during the period.

# EARNED DEGREES, BY LEVEL AND BY SEX OF RECIPIENT

Of the 10,711,130 degrees awarded during the 10-year period, 4,369,513 (40.8 percent) were awarded to women. (See table 4.) The number of degrees awarded to men increased annually, from 440,427 in 1965-66 to 765,529 in 1973-74, then decreased to 746,588 in 1974-75 (the number was 69.5 percent larger in 1974-75 than in 1965-66). Degrees awarded women increased each year of the 10-year period, from 274,197 in 1965-66 to 569,071 in 1974-75, an increase of 107.5 percent.

Women earned 38.4 percent of all degrees in 1965-66, and 43.3 percent in 1974-75. (See table 5.) However, the representation of women differed markedly by degree level, with the largest percentage representation at the bachelor's level (43.7 percent of all bachelor's degree recipients during the 10-year period) and the smallest percentage representation at the first-professional degree level (7.0 percent of first-professional degree recipients during the 10-year period). As indicated in table 5 and in figure 3, the percentage representation of women among degree recipients increased at all levels between 1965-66 and 1974-75.

#### A. BACHELOR'S DEGREES

The number of men receiving bachelor's degrees increased annually from 1965-66 through 1973-74, then decreased by 4.2 percent in 1974-75 (624 percent larger in 1974-75 than in 1965-66). (See table 4.) The number of women receiving bachelor's degrees also increased annually from 1965-66 through 1973-74, then decreased by .1 percent in 1974-75 (89.5 percent larger in 1974-75 than in 1965-66). Due to the greater proportional growth in degrees awarded to women than in degrees awarded to men, the percentage representation of women among bachelor's degree recipients increased from 42.5 percent in 1965-66 to 45.4 percent in 1974-75. (See table 5 and figure 3.)

#### **B. MASTER'S DEGREES**

The number of men and the number of women receiving master's degrees increased annually from 1965-66 through 1974-75. (See table 4). Master's degrees to men increased by 74.0 percent between 1965-66 and 1974-75. The number of women receiving master's degrees was 176.4 percent larger in 1974-75 than at the beginning of the 10-year period. The larger proportional increase in the numbers of women' receiving master's degrees resulted in an increase in the percentage representation of women among master's degree recipients from 33.8 percent in 1965-66 to 44.8 percent in 1974-75. (See table 5 and figure 3.) Whereas women received a much lower proportion of master's than of bachelor's degrees awarded in 1965-66, in 1974-75 women accounted for nearly the same proportion of master's degreerecipients as of bachelor's degree recipients.

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#### C. DOCTOR'S DEGREES

The number of men receiving doctor's degrees increased annually from 1965-66 through 1972-73, then decreased by 4.2 percent in 1973-74 and by another 2.0 percent in 1974-75, resulting in a 66.4 percent increase in 1974-75 over 1965-66. (See table 4.) In each year of the 10-year span, the number of women receiving doctor's degrees increased, and was 243.1 percent larger in 1974-75 than in 1965-66. Women received 11.6 percent of doctoral degrees in 1965-66 and 21.3 percent in 1974-75. (See table 5 and figure 3.)

# D. FIRST-PROFESSIONAL DEGREËS

The number of men receiving first-professional degrees increased each year of the 10-year period except 1969270, when the number was 2.1 percent smaller than in the previous year. (See table 4.)



Table 4.—Number of degrees awarded, 1965-66 through 1974-75, by level, sex, and year

	All le	evels	Bac	h <b>el</b> or's	Mas	ter's	Doc	tor's	First-pro	fessional
Year	Men	Women	Men	Women	Men	Women	Men	Women	/ Men	Women
1965-66	440,427	274,197	301,969	223,296	93,184	47,588	16.121	2,118	29,153	1,195
1966-67	476,643	296,732	324,710	238,232	103,179	•	18,164		30,590	
1967-68	526,764	345,068	360,163	277,174	•	63,401	20,185	2,906		1,587
1968-69	591,567	398,719	412,864	•		72,533	22,753	•	34,069	1,612
1969-70	638,987	433,594	453,605	•	•	83,241	25,892	3,980	33,344	1,908
1970-71	680,344	467,641	478,423		138,590	92,896	27,534	4,579	35,797	2,479
1971-72	722,832	501,195	503,631	390,479	150,085	102,689	28,095	5,274	41,021	•
1972-73	751,936	528,086	521,534	•	155,000	109;525			46,827	3,608
1973-74	765,529	555,210	530,907	423,469	158,344	119,915		6,452	48,904	5,374
1974-75	746,588	569,071	508,424				26,819	7,267	49,230	7,029
1965-66	7	٠,	,		,,,,,,	101,500	20,019	7,207	77,230	7,029
through (	5,341,617	1,369,51,3	4,396,230	3,417,917	1,322,273	878,037	241,512	44.684	381 602	28.875
1974 <del>-75</del> ·	• .					-4	:	,	,002	20,075
% Increase			ni			•			•	· .
1965-66					0	•	•	٠	•	•
through	69.5	107.5	68.4	89.5	74.0-	176.4	66.4	243.1	68.9	100 2
1974-75			00.4	٠, ٠,٠	7- <del>7</del> .Q:	170,4	00.4	243.1	9.00.9	488,2
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Table 5.-Percentage of degrees awarded to women, by level and year

Year	All levels	Bachelor's	Master's	Poctor's	First-prof.
1965-66	38.4	42.5	33.8	11.6	3.9
1966-67	38.4	42.3	34.7	11.9	4.2
1967-68	39.6	43.5	35.8	12.6	4.6
1968-69	40.3	43.8	37.3	13.1	4.5
1969-70	40.4	43.2	39.8	13.3	5.4
1970-71	40.7	43.5	40.1	14.3	6.5
1971-72	40.9	43.7	40.6	15.8	6.3
1972-73	41.3	43.9	41.4	17.9	7.2
1973-74	42.0	. 44.4	43.1	19.1	9.9
1974-75	43.3	45.4	44.8	21.3	12.5
1965-66		,			- 12,5
through	40.8	43.7	39.9	15.6	7.0
1974-75			,	. 15.0	7.0

Figure 3.—Percentage of degrees awarded to women, by level and year 50 Bachelor's Master's . 40 **~30** Doctor's degrees .20 First-professional 10 1969-70 💉 1970-71 - 1972-73 1971-72 1973-74 1974-75 1966-67 1968-69 1967-68 Year 16

Among first-professional degree recipients, there were 68.9 percent more men in 1974-75 than in 1965-66, while the number of women increased annually from 1965-66 through 1974-75 (a 488.2 percent increase). The percentage representation of women among first-professional degree recipients increased from 3.9 percent in 1965-66 to 12.5 percent in 1974-75. (See table 5 and figure 3; see also Women's Participation in First-Professional Degree Programs in Medicine, Dentistry, Veterinary Medicine and Law<sup>3</sup> for more detailed analyses of these four first-professional fields for the period 1969-70 through 1974-75.)

## E. SUMMARY

At each of the degree levels, the percentage representation of women increased during the 10-year period. The rates of increase in numbers of women awarded degrees were inversely related to the percentage representations of women at the individual degree levels in 1965-66. That is, as may be expected, the rates of increase were largest at those levels in

which the percentages of women were smallest in 1965-66.

In 19.74-75, the percentage of women among master's degree recipients nearly equalled that among bachelor's degree recipients. Moreover, both levels are approaching equal representations of men and of women. At the doctor's and first-professional levels, continued increases in the percentages of women in current enrollments for degrees indicate that the percentage representations of women among degree recipients will continue to increase for at least the next 3 or 4 years.

However, doctor's and first-professional degree programs are no longer expanding as they were during the 10-year period studied. Thus, competition for acceptance into these programs will probably be even greater in the foreseeable future than it has been in the past. If the number of qualified women applying for acceptance to these programs continues to increase and additional places are not forthcoming, we may see an actual decrease in the number of men enrolled as the number of women enrolled increases.

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<sup>&</sup>lt;sup>3</sup>NCES 76-023. Available from the National Center for Education Statistics.

# EARNED DEGREES, BY LEVEL AND BY CONTROL OF INSTITUTION

Of the degrees earned during the 10-year period, 3,783,022 (35.3 percent) were awarded by private institutions. (See table 6.) The number of degrees awarded by public institutions increased annually from 1965-66 through 1973-74; in 1974-75, the number decreased by 0.8 percent from the previous year, but constituted an increase of 109.5 percent over 1965-66. The number of degrees awarded by private institutions increased each year of the 10-year period, but, at a slower rate than for public institutions. Private institutions awarded 47.7 percent more degrees in 1974-75 than in 1965-66.

Private institutions awarded 41.1 percent of all degrees in 1965-66. (See table 7.) Each year from 1965-66 through 1973-74, the percentage representation of degrees awarded by private institutions decreased, reaching a low point of 32.7 percent of all degrees in 1973-74. In 1974-75, however, private institutions showed a small increase, awarding 33.0 percent of all degrees.

As indicated in table 7, the percentage of degrees awarded by private institutions varied by level of degree for the 10-year period: approximately 35 percent of bachelor's, master's, and doctor's degrees, and 58 percent of first-professional degrees. Furthermore, as indicated in table 7 and figure 4, the percentage representation of degrees awarded by private institutions was smaller at each degree level in 1974-75/than in 1965-66.

#### A. BACHELOR'S/DEGREES

Of the 7,814,147 bachelor's degrees awarded during the 10-year period studied, 2,672,600 (34.2 percent) were awarded by private institutions. The number of bachelor's degrees awarded increased at both public and private institutions each year from 1965-66 through 1973-74. (See table 6.) It then decreased by 2.6 percent at public institutions and 1.8

percent at private institutions in 1974-75. The number of degrees awarded at public institutions was 104.3 percent larger in 1974-75 than in 1965-66, while the number awarded by private institutions was only 37.5 percent larger. Thus, the proportion of total bachelor's degrees awarded by private institutions decreased from 40.3 percent in 1965-66 to 31.1 percent in 1973-74, then increased slightly to 31.2 percent in 1974-75. (See table 7 and figure 4.)

#### B. MASTER'S DEGREES

From 1965-66 through 1974-75, U.S. institutions awarded 2,200,310 master's degrees, of which 769,415 (35.0 percent) were granted by private institutions. The number of master's degrees increased [ annually throughout the 10-year period at public and at private institutions. (See table 6); at public institutions, the number was 130.9 percent larger in 1974-75 than in 1965-66, as compared with a 75.3 percent increase at private institutions. The proportion of total master's degrees from private institutions decreased from 40.1 percent in 1965-66 to 33.7 percent in 1974-75, but most of this decrease occurred prior to 1971-72, and the proportion of master's degrees awarded by private institutions has been fairly stable since that time. (See table 7 and figure 4.) 13

#### C.. DOCTOR'S DEGREES

Of the 286,196 doctor's degrees awarded during the 10-year period, 104,241 (36.4 percent) were awarded by private institutions. Doctor's degrees awarded by public institutions increased each year from 1965-66 through 1972-73, decreased by 2.5 percent in 1973-74, then increased in 1974-75, but to a level below that of 1972-73. At public institutions, the number was 105.9 percent larger in 1974-75 than in 1965-66, at private institutions it was 59.5 percent



Table 6.-Number of degrees awarded, 1965-66 through 1974-75, by level, control of institution, and year

. •	All	levels	Bac	helor's	Mass	ter's	Doct	or's	First-pro	fessional
Year	Public	Private	Public	Private	Public	Private	Public	Private	Public	
1965-66	420,595	294,029	313,555	<sup>3</sup> 211,710	84,313	56,459	10,774	7 465	11,953	18,395
1966-67	466,278	307,097	343,393			60,497	12,438		13,052	
1967-68	535,014	336,818	393,851	243,486		64,526	14,157	8,934		
1968-69	623,194	367,092	466,133	267,869		68,846	16,455	9,734	–	•••
969-70	692,715	379,866	523,442	274,628	,	74,036	19,189	10,683		
970-71	751,785	1396,200	562,345	283,765	, ,	79,181	20,794	•	16,341	
971-72	812,929	41.1,098	604,471	289,639	-,	84,825	21,782	11,587		
972-73	856,072	423,950	636,378	293,894			22,370	12,420		
973-74	888,250		657,455	296,921	,		21,817	12,009		
974-75	881,276	434,383	640,524	•			22,179	11,907	23,474	
965-66		•	- ; - <b>,</b> · ·		121,000	,	22,172	11,507	23,907	32,352
rough 974-75	6,928,108	3,783,022	5,141,547	2,672,600	1,430,895	769,415	181,955	104,241	173,711	236,766
ercentage	•	•		* * * * *				•	, '	1.
creases	•					• •				
965-66			•					. ,		
rough 974-75	109.5	47.7	104.3	37.5	130.9°	75.3	105.9	59.5	100:0	75.9

Table 7.—Percentage of degrees awarded by private institutions, by level and year

* Year	All Levels	Bachelor's	/ Master's	Doctor's	« First-Professional
1965-66	41.1	40.3	₩ 40,1	40.9	60,6
1966-67	39.7	39.0	38.3	39.7	59.1
1967-68	38.6	38.2	36.4	38.7	58.0
1968-69	37.1	<b>36.5</b> .	35.4	37.2	57.9
·19 <b>6</b> 9-70 -	35.4	34.4	35.4	35.8	58.2
1970-71	34.5	<b>33.5</b> .	34.2	35.2	57.3
1971-72	33.6	32.4	33.6	34.7	₹ 57.2
1972-73	33.1	31.6	33.8	35.7	56.2
1973-74	32.7	31.1	33.3	35.5	56.8
1974-75	33.0	31.2	33.7	34.9	
1965-66		<b>-</b>		<i>*</i>	. 57. <b>5</b>
through 1974-75	35.3	→34.2	35.0 ,	36.4	57.7

Figure 4.-Percentage of degrees awarded by private institutions, by level and year Percentage private Bachelor's Master's 70% Doctor's 60% 40% 'Doctor's Master's Bachelor's 30% 1970-71 1972-73 1969-70 1971-72 1974-75 1966-67 1967-68 1965-66 1968-69 1973-74 20

larger in 1974.75 than in 1965.66, reflecting an increase each year from 1965.66 through 1972.73, a decrease by 3.3 percent in 1973.74 and an additional 0.8 percent decline in 1974.75. Although the proportion of doctorates awarded by private institutions dropped from 40.9 percent in 1965.66 to 34.9 percent in 1974.75, the proportions awarded by private and by public institutions have been fairly stable since 1970.71.

#### D. FIRST-PROFESSIONAL DEGREES

During the 10-year period, U.S. institutions granted 410,477 degrees in first-professional specialties, of which 236,766 (57.7 percent) were from private institutions - the only degree level at which private institutions exceeded public institutions. The number of first-professional degrees increased annually at both public and private institutions, except for decreases in 1969-70 of 2.0 percent at public institutions and 0.6 percent at private institutions. (See table 6.) At public institutions, the number of first-professional awards was 100.0 percent larger in 1974-75 than in 1965-66; at private institutions, the increase was 75.7 percent. Thus, even with regard to first-professional degrees, the proportion of degrees awarded by private institutions decreased during the 10-year period, from 60.6 percent in 1965-66 to 57.5 percent in 1974-75. (See table 7 and figure 4.) However, the proportion of all firstprofessional degrees awarded by private institutions; has been fairly stable since 1970-71'.

#### E. SUMMARY

As indicated in table 8, the percentage representation of women increased during the 10-year period at both public and private institutions at each degree level. For the total period, however, the percentage representation of women degree recipients was larger at the bachelor's, master's, and first-professional levels at public institutions than at private institutions. Conversely, the percentage representation of women among doctor's degree recipients' was larger at private than at public institutions. The reasons for the differences in percentages of women by-control of intuition are beyond the scope of this publication.

The proportion of degrees awarded by private institutions decreased from 41.1 percent in 1965-66 to 33.0 percent in 1974-75, because the rate of increase in degrees awarded was substantially larger at public institutions (109.5 percent) than at private institutions (47.7 percent). The greatest decrease in percentage of degrees awarded by private institutions was at the bachelor's degree level; however, the rate of decrease has slowed at all levels during the past 5 years, leading to the expectation that private institutions will continue to award a significant proportion of degrees for the foreseeable future.

Table 8.—Percentage of women among degree recipients, by degree level and control of institution: 1965-66 and 1974-75

		.19	965-66 <sup>/</sup>		1974-75			1965- throu 1974-	gh 📩 🔪
Level		Public	Private	- :	Public	Private *		Public	Private
Bachelor's		43.0	41.9	-	45.9	44.5		44.5	42.3
Master's		33.9	33.7		46.8	40.8		41.5	37.0
Doctor's		10.2,	13.6 ہے۔	•	20.8	22.3	**	14.5	17.5
First-pro-	×		,			•	r		•
fessional		4 3.9	4.0	<b>*</b>	12.9	12.2		7.2	6.9
All levels	· •	39.2	37.2	•	. 44.5	40.6	:	42.1	38.3

<sup>\*</sup>This is analyzed in detail in DHEW publication, Analysis of Doctor's Degrees Awarded To Men and Women: 1971 Through 1974-75 (Washington, D.C., U.S. Superintendent of Documents, 1975).

# EARNED DEGREES, BY LEVEL AND BY DISCIPLINE DIVISION, 1970-71 THROUGH 1974-75

In 1970-71, a new taxenomy of discipline divisions and specialties for the earned degrees survey was introduced. Due to problems of noncomparability of disciplines and specialties using the old and the new taxonomies, the analysis by discipline division will cover only the 5-year period 1970-71 through 1974-75.

#### A. BACHELOR'S DEGREES

The total number of bachelor's degrees awarded in 1974-75 was 10.1 percent larger than the number awarded in 1970-71. In 1974-75, there were more bachelor's degrees than in 1970-71 in all but eight discipline divisions. (See table 9.) The largest decreases were in social sciences (-19,925), letters (-15,465), education (-8,889), and mathematics (-6,572). Table 10 presents the eight disciplines and the percentage and numerical decreases over the 5year period and shows that in each of these eight disciplines, there were also decreases over the period in the proportion of total bachelor's degrees awarded. All other fields showed at least marginal increases in both the number and the proportion of bachelor's degrees. The largest increases in bachelor's degrees were in health professions (+23,992), public affairs and services (†19,294), business and management (+18,746) and biological sciences (+16,203).

Within each of the four disciplines which experienced the largest decreases in numbers of bachelor's degrees awarded annually, most of the decrease was accounted for by a few specialties: "history" and "social sciences, general" within the discipline division of social sciences; "English, general" within letters; "elementary education, general" within education; and "mathematics, general" within mathematics. All these specialties are likely majors for students who wish to become elementary or secondary school teachers, and

thus the decreases in these specialties and divisions at the bachelor's level are probably related to decreasing opportunities for employment in elementary and secondary school teaching.

· Within the four disciplines which experienced the greatest increases in numbers of bachelor's degrees awarded annually, certain specialties accounted for most of the increases. Within health professions, half of the increase was in "nursing"; other substantial increases were found in "speech pathology and audiology," in "medical laboratory technologies," and in "pharmacy." Within the discipline division of public affairs and services, major increases occurred in "law enforcement and corrections" and in "social work and helping services." A smaller but still substantial increase occurred in degrees in "parks and recreation management." Increases in the specialties of "business management and administration" and "accounting" were larger than the net increase in the division of business and management. Finally, most of the increase in biological sciences was in the speciality of "biology, general," possibly due to increased career interest in medicine and dentistry. Schools often classify premedical and predental programs within the survey category of "biology, general."

It is interesting to consider the projected demand for new workers in the fields in which the decrease or increase of graduates with bachelor's degrees has been largest. To do so, we will employ two sources published by the Bureau of Labor Statistics (BLS): the Occupational Outlook Handbook, 1974-75 edition (OOH), and Occupational Manpower and Training Needs, 1974 revision (OMTN).

In terms of the specialties in which the largest decreases occurred, the BLS category of elementary and secondary school teachers appears most appropriate. In these areas, BLS projected that "teacher training could be curtailed sharply and manpower requirements still be met." (OMTN-p 43).

Table 9.-Bachelor's degrees conferred, by discipline division: 1970-71 and 1974-75

	19	70-71	19	74-75-	Percentage change
Discipline division	Number	% of total	Number	% of total	1970-71 to 1974-
Agriculture and natural		<del></del>		<del></del>	•
resources	12,710	1.5	17.573	1.9	38.3
Architecture and	.0	Ę	€		30.3
environmental design	. <i>5</i> ,578	0.7	8,238	0.9	`:47`7
Area studies	2,497	0.3	. 3,066	0.3	22.8
Biological sciences	36,033	4.3	52,236	. 5.6	45.0
Business and management	116,709	13.8	135,455	14.5	16.1
Communications	10,802	1.3	19,249	2.1	78.2
Computer and		~ · · · ·			( ,2
information sciences	2,388	0.3	5,039	0.5	111.0
Education	177,638	21.0	168,749	18.1	· \ \ -5.0
Engineering,	50,357	6.0	47,303	5.1	-6.1
Fine and applied arts	30,447	3.6	41,061	4.4	.34.9 · <del>ξ</del>
Foreign languages	20,433	2.4	18,172	2.0	-11.1
Health professions	25,484	<i>,</i> 3.0	49,476	5.3	94.1
Home economics	11,271	1.3	16,873	1.8	49.7
Law	545	0.1 /	436	*	-20.0
Letters	, · 73,398	8.7	57,933	6.2	-21.
Library science	1,013	0.10	1,069	0.1	5.5
Mathematics	24,918	2.9		2.0	•26,4
Military sciences	357	*	390	*	.9.2
Physical sciences	21,549	2.5	20,896	2.2	-3.0
Psychology	38,154	4.5	51,436	5.5	34.8
Public affairs and services	9,303	1.1	28,597	3.1	207.4
Social sciences	156,698	18.5	136,773	14.7	-12.7
Theology	3,744	0.4	4,818	0.5	28.7
Interdisciplinary studies	14,084	1.7	28,479	3.1	102.2
Total	846,110	100.0	931,663	100.0	10.1

Percentages may not total 100.0 due to rounding.

\*Less than .05% of total degrees.

Considering history, pocial science, English, and mathematics employment outside of secondary education, one finds:

(1)Graduate education is usually necessary for employment as a historian. The number of master's degrees in history awarded in 1971 exceeded the projected average annual openings for the period 1972-1985 (OMTN-p. 71).

(2)BLS does not give projected demand information for persons with bachelor's degrees in "social sciences, general" or in English.

(3)In mathematics, although BLS projected an oversupply of mathematicians based on increases in supply projected by the U.S. Office of Education

(OMTN-p. 57), the actual situation is one of a decrease in degrees beneath the levels which BLS states are needed to meet demand.

The decreases in bachelor's degrees in these fields will probably help to adjust supply to decreasing demand for teachers at the elementary and secondary levels. In terms of employment outside of education, the picture is not very clear.

We will now consider the outlook in the specialties with the greatest increases in bachelor's degrees. According to the BLS, the expansion in supply will exceed projected demand for registered nurses (OOH p. 503) and for speech pathologists and audiologists (OMTN-p. 70). Within medical laboratory technol-



Table 10.—Percentage and numerical decreases in numbers of bachelor's degrees awarded in 1974-75 vs. 1970-71

Discipline division .	Percent decrease	Numerical decrease
Mathematics	26.4	6,572
Letters	21.1	15,465
Law	20.0	109
Social sciences	12:7	19,925
Foreign languages	11.1	2,261
Engineering	<b>\6.1</b>	3,054
Education	. ₹ 5.0	8,889
Physical sciences '	3.0	` ∙653

ogies, BLS does not separate out demand for college graduates, although a mild expansion in demand is projected for this category as a whole (OOH-p. 491). For pharmacy, the outlook is expected to be very good through the mid-1980's, with demand expected to exceed the supply (OOH-p. 524). Thus, the outlook for graduates in these expanding specialties in the health professions is mixed.

Although BLS does not discuss the specialty of law enforcement and corrections as such, the increase in this area may be due to increased demand from law enforcement agencies for upgrading of qualifications. Rapid expansion in demand (OOH-p. 572) should provide favorable employment opportunities in social work throughout the 1970's, but rapidly increasing supply may well increase competition in the 1980's. In parks and recreation management, employment opportunities are expected to be excellent (OOH-p. 567). Reductions in government expenditures, however, could reduce the need for additional personnel in each of these areas.

The specialty of "business management and administration" as such is not discussed in the BLS publications. In accounting, employment is expected to increase rapidly through the mid-1980's (OOH-p. 129). However, the growth rate in accounting degrees between 1970-71 and 1974-75 was larger than the projected rate of increase in demand for the period 1972-1985 (OMTN-p. 37). Thus, if the growth rate does not moderate, oversupply may result.

In terms of biology, BLS considers the larger category of life sciences, which includes degrees awarded in agriculture and natural resources and in biological sciences. Large increases in supply in the life sciences are expected to exceed increases in demand during the period 1972-1985 (OMTN-p. 56).

Thus, the areas of greatest increase in bachelor's degrees present a very mixed supply and demand outlook for educated manpower. However, increases do tend to be in areas where increased demand is still likely.

#### B. MASTER'S DEGREES

Master's degrees awarded'in 1974-75 exceeded by 26.9 percent the number awarded in 1970-71. In 1974-75, the number was larger in all but six discipline divisions. (See table 11.) There were substantial decreases in five fields: engineering (-1,098), foreign languages (-953), letters (-870), mathematics (-863), and physical sciences (-556). In addition, no degrees were awarded in military sciences in 1974-75, These six discipline divisions, as well as agriculture and natural resources, area studies, biological sciences, fine and applied arts, library science, social sciences, and theology, experienced decreases over the period in the proportion of total master's degrees awarded. In all other discipline divisions there were increases in both the number and proportion of master's degrees awarded. The largest numerical increases were in education (+\$1,166), business and management (+9,796), public affairs and services (+7,099), and health professions (+4,940).

Specialties accounting for the largest part of the numerical decreases in the discipline divisions were: engineering (largest decreases were in "electrical, electronics, and communications engineering"), "other," and "mechanical engineering." There were also substantial decreases in "aerospace, aeronautical and astronautical engineering" and "industrial and management engineering". Although demand for engineers at the master's level is not discussed in the BLS publications, the demand at the bachelor's level is expected to exceed the supply for the 1972-85 period (OMTNp. 55). In foreign languages, the largest decreases were in "French," "Spanish," and "German". In letters, the decrease in "English, general" was larger than the net decrease in the discipline division as a whole. Most of the decrease in mathematics was in "mathematics, general." Finally, substantial decreases within physical sciences/were in "physics, general" and to a lesser extent in "chemistry, general."

Within each of the four discipline divisions that accounted for the largest numerical increases in master's degrees, certain specialties experienced large increases. In education, increases of 2,700 or more degrees occurred in each of the following: "elementary

Table 11.-Master's degrees conferred, by discipline division: 1970-71 and 1974-75

• /	19	70-71	' 19	74-75		Percentage change
Discipline division	Number	% of total	Number	% of total		1970-71 to 1974-75
Agriculture and natural		' 1.1				
resources	2,458	1.1	3,076	1.0		25.1
Architecture and			•	•	•	
environmental design	1,724	0.7	2,953	1.0	,	71.3
Area studies	1,017	0.4	1,140	0.4		12.1
Biological sciences	5,756	2.5	6,591	• 2.2		14.5
Business and management	26,654	11,5	-36,450	12,4		36.8
Communications	1,856	0.8	2,796	1.0	.77	50.6
Computer and			,	. —		·'.
information sciences	1,588	0.7	2,299	0.8		44.8
Education	89,067	38;5,	<b>120,233</b>	40.9		35.0
Engineering	16,457	7.1	<b>-</b> 15,359.	5.2	•	<b>6.7</b>
Fine and applied arts	6,678	2.9	8,363	2.8	<i>s</i> r .	25.2
Foreign languages	4,779	2.1	\$ 3,826	1.3	.,'	-19.9
Health professions	5,902	<b> 2.5</b>	10,842	3.7		83.7
Home economics	1,453	0.6	1,901	0.6	<b>*</b> * '	30.8
Law	955	0.4	1,245	0.4		30.4
Letters	12,743	5.5	11,873	4.0		-6.8
Library sciences	7,028	3.0	<b>.</b> 8,123	2.8		15.6
Mathematics .	-5,201	2.2	4,338	1.5	. '	16.6
Military sciences	2	*	, 0	٥,0		-100.0
Physical sciences	6,386	2.8	5,830	2.0	•	-8.7
Psychology	4,438	1.9	7,104	2.4		60.1
Public affairs and services	8,406	3.6	15,505	5.3		84.5
Social sciences	16,522	7.1	16,942	5.8		2.5
	2,710	1.2	3,230	1.1		19.2
Interdisciplinary studies	1,706	0.7	3,632	1.2		112.9 · ·
Total	231,486	100.0	293,651	100.0	,	26.9

<sup>\*</sup>Less than .05% of total degrees.

education, general," "education, general, "student personnel," "reading education," "special education, general," and "educational administration." The increase in elementary education degrees at the master's level may result from the severe competition for elementary school teaching positions among individuals with only a bachelor's degree in this area. Thus, individuals may attempt to improve prospects by obtaining a master's degree. In business and management, the largest part of the increase was in "business management and administration." In public affairs and services, "public administration" and "social work and helping services" accounted for most of the increases. One type of employment in public administration is as city manager, an area in which a master's

degree is preferred. Although BLS projects a percentage increase (OMTN-p. 38) in the demand for city managers, it is far below the percentage increase in the number of degrees in public administration. However, positions in State and local government are expected to continue to increase through the mid-1980's. Public Administration programs prepare students for a wide variety of positions in these areas of government. As stated in regard to bachelor's degree recipients, opportunities in social work are expected to be favorable through the 1970's, with increased competition in the 1980's (OOH-p. 572). Finally, in health professions, the largest increases were in "speech pathology and audiology," "public health," and "mursing." In two areas the outlook for in-

dividuals with master's degrees is expected to be favorable. Public health as such is not discussed in the BLS publications.

#### C. DOCTOR'S DEGREES

The number of doctorates awarded in 1974-75 was only 6.1 percent larger than the number awarded in 1970-71. In 1974-75, the number was larger than in 1970-71 in all but five discipline divisions. (See table 12.) The two divisions with the largest decreases were physical sciences (763) and engineering (530). In addition, biological sciences, mathematics, and agriculture and natural resources also experienced decreases. Furthermore, these five divisions as well as fine and applied arts, law, and letters experienced decreases in

the proportion of total doctorates awarded. All other fields experienced increases in the number and proportion of doctor's degrees awarded. The largest increases in numbers of doctor's degrees awarded were in education (1,045), psychology (660), theology (560), and social sciences (550).

At the discipline specialty level, the decrease in physical sciences was primarily accounted for by decreases in "physics, general" and in "chemistry, general." In engineering, the decreases were greatest in "electrical electronics, and communications engineering," followed by "mechanical engineering" and "civil, construction, and transportation engineering." Declines at the dectoral level for both these scientificand engineering fields are in contrast to the employment outlook which is generally favorable. It is possible that these declines are a reflection of the unfavorable outlook for college teaching positions.

Table 12.—Doctor's degrees conferred, by discipline division: 1970-71 and 1974-75

Discipline division	1970-71		1974-75			Percentage change	
	Number	% of total	Number	% of total		1970-71 to 1974	
Agriculture and natural			4			•	
resources	1,086	3.4	991	2.9	• •	-8.7	
Architecture and	4		•	`	f		
environmental design	36	0.1	69	0.2		91.7	
Area studies	149	0.5	166	0.5	•	11.4	* '
Biological sciences	3,645	11.4	3,384	9.9		-7.2	
Business and management	810	2:5	1,011	3.0	•	24.8	
Communications	145	0.5	165 ·	0.5		13.8	7
Computer and	•	•	V	. •			
information sciences	. 128°	0.4	213	0.6	. :	<sup>5</sup> 66.4	(
Education.	6,398	19.9	7,443	21.8	Ď	/ 16.3	
Engineering .	3,638	11.3	3,108	9.1		-14.6	
Fine and applied arts	62Î	1.9	649	1.9		4.5	,
Foreign languages	781	2.4	857	2.5		9.7.	į.
Health professions , >	466	1.5	618	1.8		32.6	
Home economics	123	0.4	156	.0.5	•	26.8	
Law	20	.0.1	21	<sup>♥</sup> 0.1		5.0	
Letters /	2,416	· ` ` 7.5	2,498	7.3		3,4	
Library science	39	0.1	56	0.2	•	43.6	•
Mathematics	1,199	3.7	\ 975	2.9		-18.7	
Physical sciences	4,391	13.7	3,628	10.6		-17.4	. 1
Psychology	1,782	5.5	2,442	7.2	•	37.0	·. '
Public affairs and services	178	0.6	285	• 0.8		60.1	
Social sciences	3,659	11.4	4,209	12.3		15.0	č
Theology	312 \	1.0	872	2.6	-	179.5	
nterdisciplinary studies	91	∞ 0.3	270	0.8	٧	196.7	,
Total	32,113	100.0	34,086	100.0		6.1	

Increases in education degrees were primarily in "educational administration", "curriculum and instruction," "educational psychology," and in "industrial arts, vocational and technical education." The increases at this level, as at the master's, could be attributed to the desire of many people currently in the field of education to upgrade their education to help retain their positions.

The increase in psychology was primarily in "psychology, general's followed by "clinical psychology." The outlook for psychologists is favorable for the next few years.

In the social sciences the largest increases were in "arithropology," "history," "sociology," and "economics." Competition is expected in sociology and keen competition in anthropology and history; doctorates in economics will face less competition. It is impossible to explain why these four, with such differing outlooks, show such large increases.

# D. FIRST-PROFESSIONAL DEGREES

Among the four degree levels, the first-professional level had the greatest percentage increase (47.0 percent) between 1970-71 and 1974-75. (See table 13.) More first-professional degrees were awarded in each discipline specialty in 1974-75 than in 1970-71. However, only "law" (with a 11,845 increase) accounted for a larger proportion of the degrees awarded in 1974-75 than in 1970-71. The increased supply of lawyers will exceed the demand, if the number of degrees awarded in law stays at the current level. The

outlook for the other first-professional areas varies from favorable to very good, with the exception of theology. In theology, the demand for Protestant ministers and for rabbis has been declining.

#### E. SUMMARY

Changes in numbers of degrees awarded among the discipline divisions and specialties during the period 1970-71 through 1974-75 differed by degree level. Thèse differences may have resulted, in part, because poor employment prospects at the bachelor's level in a field discouraged some persons from obtaining a bachelor's degree in that field and at the same time encouraged other persons, already in the field, to ob. tain a higher level degree in order to retain their employment. Furthermore, employment prospects at the doctor's level are fairly independent of those at the bachelor's level even within a given discipline division or specialty. Contractions in faculty and research positions in universities make the employment prospeet generally poor for all those expecting a doctorate to provide the basis for obtaining a position in higher education. Under such conditions it becomes impossible to determine why doctorates should increase in fields where most of the positions are in colleges and universities. In general, as the availability of positions in particular fields declines to the point where newspapers and magazines feature articles on employment prospects, we should expect declines in bachelor's degrees in those fields. Individuals already

Table 13.—First-professional degrees conferred, by discipline specialty: 1970-71 and 1974-75.

	Percentage change 1970-71 to 1974-75	
Medicine 8 986 23 5 12 550 22 3 39 74		
11,550 £2,5 (5), jy	f	
Optometry 531 1.4 792 1.4 49/2		
Osteopathic medicine 472 1.2 665 1.2 40.9		
Podiatry or podiatric medicine 240 0.6 351 0.6 46.2	-	
Veterinary medicine - 1,252 3.3 1,415 2.5 13.0		
Law, general 17,652 46.1 29,497 52.4 67.1		
Theological professions, general 5,055 13.2 5,098 9.1 0.9		
Other 311 0.8 1,082 f.9 247.9		
Total 38,276 100.0 56,259 100.0 47.0		



in the field may take advanced work to maintain their positions, thereby causing increases at the master's level.

Unless the outlook for employment in colleges and universities improves, we should expect to see declines in the number of doctorates awarded in a variety of fields. On the other hand, since the pros-

pects for future employment in most first-professional fields are favorable, we should expect increasing competition for the limited places for entering students. The possible exception is law, but since legal training is useful in a variety of other occupations, the number of J.D.'s awarded may continue to increase for several more years.

