

Trends of Women's Colleges & Universities in the U.S. over the
Last 25 Years : A Comparison with Coed Colleges & Universities

過去四半世紀におけるアメリカ女子大学の動向： 共学大学との比較

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Content
Abstract
1. Introduction
2. The Outline of Women's Colleges & Universities in the U.S.
2-1. Current Women's Colleges & Universities
2-2. A Change in the Number of Women's Colleges by Year
2-3. Enrollments of Women's Colleges
3. The Outline of Ex-Women's Colleges in the U.S.
4. A Comparative Analysis of Women's Colleges with Coed-Colleges
4-1. Changes and the rate of applied, accepted, and enrolled students
4-2. Enrollment
4-3. Tuitions and Room & Board Fees
5. Findings
Notes
References
Appendix

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Abstract

After the period when Vassar College decided to open its doors to male students in 1968, and Title IX of the Higher Education Act Amendments were enacted in 1972, the number of women's colleges started to decrease rapidly. According to Chamberlain's study (1988), the number of women's colleges including 2-year colleges dropped from 255 in 1970 to 117 in 1980. Women's colleges declined by more than half in just 10 years. Studer-Ellis (1996) indicated the number of women's colleges which changed to coed colleges was 21 in 1969, 16 in 1970, and 16 in 1971. Even in recent years, they have continued to decrease with many becoming coed or merging with a coed college.

Under such circumstances surrounding women's colleges, not a few studies including Tidball's (Tidball, 1980, 1999 etc.) have been conducted to examine the advantages of women-only colleges. These studies reported that female students attending women's colleges showed intellectual development (such as intellectual self-confidence, critical thinking, and solving and so on), gained doctorates after graduation, became high achievers, and attained successful careers. Moreover, those showed that women's colleges provided more positive experiences for students to take leadership roles and interact with faculty than did coed colleges (Astin, 1993 ; Kim, 2001, 2002 ; Kinzie, 2007 ; Miller-Bernal, 2000, 2006 ; Riordan, 1994 ; Wolf-Wendel, 1998 etc.)¹⁾. In particular, the Hardwick-Day comparative research survey, commissioned by the Women's College Coalition, was conducted recently. The survey, geared toward alumnae from 1970 through 1997, showed women's colleges had, in the long-term, a more positive impact on graduates, than did coed liberal arts colleges or flagship public universities (the Hardwick-Day, 2008). In addition, there is NSSE's nation-wide survey, which measures college-student's engagement in educational practices (level of academic challenge, active & collaborative learning, student-faculty interaction, enriching educational experiences, and supportive campus environment) at each institution. The results have often been used as comparative data to indicate the advantages or superiorities of a particular women's college (for example, see Sweet Briar College's website).

Nevertheless, despite such research results, the number of women's colleges has been decreasing. It seems there are few studies which chronologically analyzed the trend of women's colleges in the U.S. except for Chamberlain et al (1988), Studer-Ellis (1996), and Harwarth et al. (1997, 1999), although many researches, dealing with the influences

on female students through the education in women's colleges, have been accumulated. According to Chamberlain, the number of women's colleges including 2-year colleges was 233 in 1960, and 90 in 1986, and 72 4-year women's colleges were counted in 1986. Studer-Ellis showed that 4-year women's colleges decreased from 176 in 1960 to 65 in 1990 over these 30 years. Meanwhile, Harwarth, et al comparatively analyzed women's colleges in detail between 1976 and 1993, and showed there were 61 4-year women's colleges in 1993.

However, after Harwarth's study, there is no quantitative study which shows the trend or status quo of women's colleges in the U.S.. This study fills the gap.

1. Introduction

Purpose

This report aims to concisely show the current situation of women's colleges in the U.S. and the change over the last 25 years through numerical data of women's colleges. In particular, although full-time enrollment was mainly geared toward to analyze in previous studies, part-time students and graduate students are also objectives of this study's analysis. In addition, to make clear the special features of women's colleges, some data on small coeducational colleges will also be cited.

A starting point of this study is to examine the significance of women's colleges of today from a comparative viewpoint between the U.S. and Japan. For the sake of achieving this aim, not only the quantitative but also the qualitative understanding of women's colleges is required.

Data

The following statistical data are used in this study : The main data are *Barron's Profiles of American Colleges* (Barron's Educational Series, 1988, 1999, 2009, each year version), *Women's Colleges in the United States* (Harwarth, I. ed., 1997), and *Digest of Education Statistics* (U.S. Department of Education, 2009-2012).

Definition of Women's College or University

Prior to reporting the results of the analysis, a definition of women's colleges in the U.S. is provided.

First, public women's colleges (i.e. Texas Woman's University, Mississippi University

for Women etc, which are members of the Women's College Coalition) are excluded. Since 1982 when the Supreme Court ordered Mississippi University for Women to admit male students, all of public institutions that are called "women's colleges" in actual fact admit both males and females.

Secondly, 2-year colleges are also removed. In a famous report (edited by Harwarth) published in 1997, not only 4-year women's colleges, but also 2-year ones were included. But as differences between 4-year and 2-year colleges are considerable, women's colleges in this study are confined to 4-year colleges. Thus, private 4-year women's colleges only are analyzed.

These decisions lead to a definition of women's colleges as follows. A women's college is a college that identifies itself as a women's college and formally doesn't state that it is a coeducational college. Since there are quite a few women's colleges that give male students conditional permissions to enter as full-time students, it is impossible to define women's colleges only judging from whether there are full-time male students. For example, Ursuline College in Ohio is not a member of the Women's College Coalition, and is treated as a coeducational college in some college guidebooks. Moreover, male students have been accepted there since the 1970s. According to its online home page, 9% of all full-time students are male today. But Ursuline College identifies itself as a college focusing on the learning needs of women, and thus far doesn't formally identify itself as a coeducational college. Thus this college is defined as a women's college in this study.

Composition

A composition of this report is the following :

- 1) The outline of women's colleges in the U.S. : Current women's colleges, a change of number of women's colleges, and their enrollments.
- 2) The outline of ex-women's colleges which became coeducational, merged with coeducational colleges, or were closed over these last 25 years.
- 3) A comparative analysis of women's colleges with private coeducational colleges.

2. The Outline of Women's Colleges & Universities in the U.S.

2-1. Current Women's Colleges & Universities

Table 1 shows the names of women's colleges or universities (hereinafter referred to

as WCU) classified by geographic region. As of 2010, there are 47 4-year women's colleges & universities in the U.S.. Some of their features are described in Table 2.

Geographically they are unevenly distributed as follows. There are 18 colleges in the North East, 17 in the South, 9 in the Mid West, and only 3 in the West. Many of them are gathered in the East and the South. As for full-time enrollments, colleges holding over 2,000 full-time students are 6, or 13% of the whole. About 70% of WCU are small colleges with enrollments of below 1,000 students. From a viewpoint of college-ranking (5-scale ranking from "most competitive" to "less competitive" and excluding "non-competitive" which was listed in *Barron's Profiles of American Colleges 2009*), the distribution is the same as all of the ranked colleges. About half of the women's colleges are ranked in the "competitive" category, or in the fourth group.

Table 1. Women's Colleges & Universities in the U.S. in Fall 2010

district	name of college	state	year of foundation	district	name of college	state	year of foundation
NE	Saint Joseph College	CT	1932	S	Judson College	AL	1838
NE	Bay Path College	MA	1897	S	Trinity Washington University	DC	1897
NE	Mount Holyoke College	MA	1837	S	Agnes Scott College	GA	1889
NE	Pine Manor College	MA	1911	S	Brenau University the Women's College	GA	1878
NE	Simmons College	MA	1899	S	Spelman College	GA	1881
NE	Smith College	MA	1871	S	Wesleyan College	GA	1836
NE	Wellesley College	MA	1870	S	Midway College	KY	1847
NE	College of Saint Elizabeth	NJ	1899	S	College of Notre Dame of Maryland	MD	1896
NE	Georgian Court University	NJ	1908	S	Bennett College for Women	NC	1873
NE	Barnard College/Columbia College	NY	1889	S	Meredith College	NC	1899
NE	The College of New Rochelle	NY	1904	S	Peace College	NC	1857
NE	Russell Sage College of The Sage Colleges	NY	1916	S	Salem College	NC	1772
NE	Bryn Mawr College	PA	1885	S	Columbia College	SC	1854
NE	Carlow University	PA	1929	S	Converse College	SC	1889
NE	Cedar Crest College	PA	1867	S	Hollins University	VA	1842
NE	Chatham University	PA	1869	S	Mary Baldwin College	VA	1842
NE	Moore College of Art and Design	PA	1848	S	Sweet Briar College	VA	1901
NE	Wilson College	PA	1869	W	Mills College	CA	1852
MW	Saint Mary-of-the-Woods College	IN	1840	W	Mount St. Mary's College	CA	1925
MW	Saint Mary's College	IN	1844	W	Scripps College	CA	1926
MW	College of Saint Benedict	MN	1913				
MW	St. Catherine University	MN	1905				
MW	Stephens College	MO	1833				
MW	College of Saint Mary	NE	1923				
MW	Ursuline College	OH	1871				
MW	Alverno College	WI	1887				
MW	Mount Mary College	WI	1913				

5 of "Seven Sisters"

regarded as "Women's College" in this report

Table 2. Some Features of Women's Colleges & Universities

Location	NE	S	MW	W	total	
number	18	17	9	3	47	
ratio (%)	38.3	36.2	19.1	6.4	100.0	
Enrollment * 1	below 499	500-999	1000-1499	1500-1999	over 2000	total
number * 2	6	25 (26)	4	4	6 (7)	47 #
ratio (%)	12.8	57.4	8.5	8.5	14.9	100.0
Ranking	most compe	highly compe	very compe	competitive	less compe	total
number	4	3	10	21	7	41
ratio (%)	9.8	7.3	24.4	51.2	17.1	100.0
Whole (Barron's)	82	109	277	671	199	1338
ratio (%)	6.1	8.1	20.7	50.1	14.9	100.0

* 1 Enrollment=full-time enrollment

* 2 There are no descriptions about enrollments of Wellesley College and Peace College

As for Wellesley, retrieved from *Complete Book of Colleges 2010* (Princeton Review), 2009

As for Peace, adopted an approximate number from the Internet Home Page

Including Wellesley College and Peace College

2-2. A Change in the Number of Women's Colleges & Universities by Year

Figure1 indicates the change in the number of WCU from 1985 to 2010. The number of WCU declined from 75 to 47 by 28, or about 44% over the last 26 years. In the late 1980s, the number of WCU dropped rapidly. This was supposedly related to the decline in population of late-teen children closely. Also in the 10 years from 1996 to 2005, the number of WCU gradually decreased almost every year.

In Figure 2, changes in the number of 4-year institutions, private colleges, and WCU

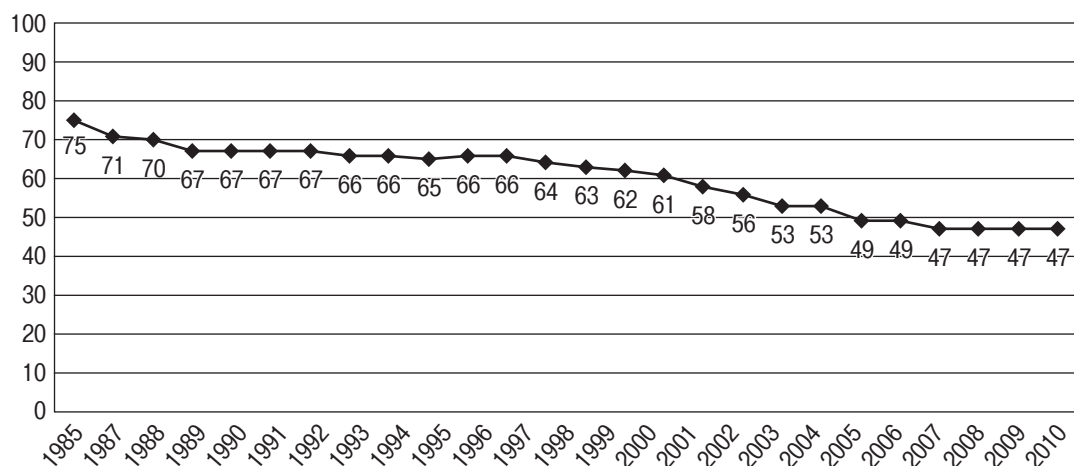


Figure 1. A Change of Women's Colleges & Universities (WCU) Number

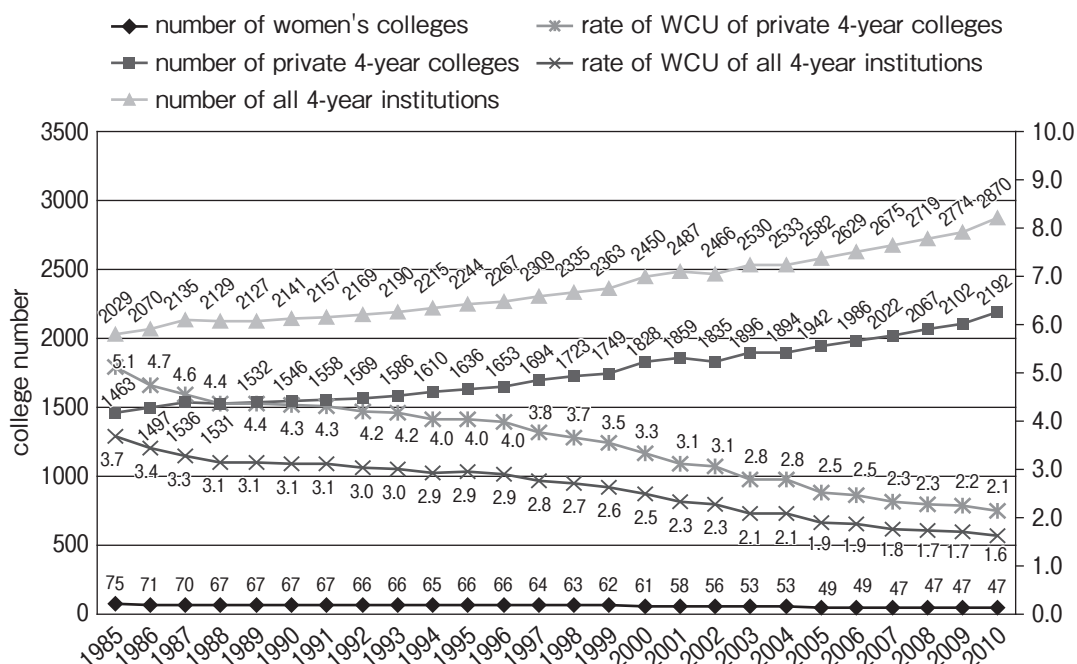


Figure 2. A Change of 4-year Colleges Number and Ratio of WCU Students in Private College Female Students

are described chronologically²⁾. Since 4-year colleges nationwide continued to increase every year, the number of 4-year institutions rose from 2,029 in 1985 to 2,870 in 2010. The increase of 841 colleges is a 41% increase since 1985. The number of private 4-year colleges also increased from 1,463 to 2,192 or by 729, a 50% increase from 1985. Meanwhile WCU continued to decrease gradually. Thus, the ratio of WCU in private colleges naturally went down from 5.1% in 1985 to 2.1% in 2010; the ratio of WCU became less than half of that in 1985.

2-3. Enrollments of Women's Colleges & Universities

Turning eyes to full-time female enrollments in colleges (Table 3), the ratio of full-time female students in all institutions constantly increased from 51.3% in 1993, and rose up to 55.4% in 2007. Incidentally the ratio in 1976 was 44.4%. Now, the female enrollment ratio is more than that of males. In contrast, the ratio of full-time female students of WCU to those of all institutions decreased from 1.88% in 1993 to 1.04% in 2007. It is down by nearly half in 14 years. Among female students of private colleges, the ratio of female to WCU female students dropped from 5.67% to 2.57% between

Table 3. Number and the Ratio of Female Students in 4 -year Colleges & Universities

		4-year (full+part)	4-year (full)	female rate (%) (full+part)	female rate (%) (full)
1993	No. of WCU Female Students (Private)	92,792	58,807	—	—
	No. of Female St. (Private Colleges & Univ.)	1,545,593	1,037,389	53.52	51.60
	Total No. of Male & Female (Private Colleges)	2,888,031	2,010,366	—	—
	No. of Female St. (Public+Private)	4,657,534	3,122,034	53.29	51.31
	Total No. of Male & Female (Public&Private)	8,739,791	6,084,421	—	—
2007	No. of WCU Female Students.(Private Colleges)	60,222	49,158	—	—
	No. of Female Students. (Private Colleges)	2,608,474	1,910,839	58.44	62.59
	Total No. of Male & Female (Private Colleges.)	4,463,537	3,052,899	—	—
	No. of Female Students.(Public+Private)	6,584,855	4,737,963	56.62	55.24
	Total No. of Male & Female (Public&Private)	11,630,198	8,577,299	—	—

		WCU Students. (Private)	
		full+part (%)	full (%)
1993	Ratio of WCU St. to All Priv. Col. Female St.(%)	6.00	5.67
	Ratio of WCU St. to All Priv. College. St.(%)	3.21	2.93
	Ratio of WCU St. to All Female St.(%)	1.99	1.88
	Ratio of WCU St. to All St. (%)	1.06	0.97
2007	Ratio of WCU St. to All Priv. Col. Female St.(%)	2.31	2.57
	Ratio of WCU St. to All Priv. College. St.(%)	1.35	1.61
	Ratio of WCU St. to All Female St.(%)	0.91	1.04
	Ratio of WCU St. to All St. (%)	0.52	0.57

St. : Students, Col. : College

1996 and 2007³⁾.

The average enrollment in the surviving WCU has increased slightly (Table 4). The average female enrollment which was 895 in 1976, increased to 905 in 1987, 966 in 1997, and reached 1028 in 2007. Compared with the average enrollment of 1976, that of 2007 increased by over 130. Table 5 also shows that WCU with over 2000 in enrollment increased from 2 in 1976 to 6 in 2007, and small-scale colleges with 499 or fewer in enrollment decreased from 11 to 6 during the same period. Meanwhile, colleges with between 500 and 999 in enrollment were consistently most frequent. As of 2007, colleges of this scale occupied 55% of the whole. Since the average enrollment of private 4-year colleges (including for-profit colleges) in 2007 was 2207.5 (enrollment 4,463,537 ; colleges 2,022. cited from *Digest of Education Statistics* 2009), the average enrollment of WCU is less than half of it.

Table 6 indicates each ratio of each full-time and part-time students for each year (1987, 1997, 2007) to each full-time and part-time students in 1976. Although the average ratio of full-time students in 1988 was almost even (1.009) with that of 1976, by 2007 it had risen up to 1.300. But looking at the average of the sum total, it was

below 1.0 in 1988, and only 1.132 even in 2007. The increase was small. As for part-time students, the average of each college ratio looked high within the range from 2.5 to 3.3, however, the averages of the sum total were low within the range from 1.073 to 1.265. Very high ratios of a few colleges simply elevated the average ratio.

Table 4. A Change of Average Full-time Students in Women's Colleges & Universities

	1976			1987			1997			2007		
	female	male	total	female	male	total	female	male	total	female	male	total
average	895.8	17.8	913.6	905.0	3.8	908.8	966.6	8.8	975.4	1028.2	11.2	1039.3
max	2840	286	2860	2622	35	2622	2567	111	2568	2569	85	2569
min	243	0	243	196	0	200	250	0	251	238	0	241

Table 5. Number of Women's Colleges by Enrollment Scale in Each Year

Scale of full-time enrollment	1976		1987		1997		2007	
	no. of colleges	ratio(%)	no. of colleges	ratio(%)	no. of colleges	ratio(%)	no. of colleges	ratio(%)
above 2000	2	4.3	3	6.8	3	6.8	6	13.3
1500-1999	8	17.0	6	13.6	5	11.4	4	8.9
1000-1499	4	8.5	3	6.8	8	18.2	4	8.9
500-999	22	46.8	22	50.0	21	47.7	25	55.6
below 499	11	23.4	10	22.7	7	15.9	6	13.3
total	47	100.0	44	100.0	44	100.0	45	100.0

Table 6. Rate of Full-time, Part-time, and Total Students Compared to Each Number in 1976

	Full-time Students			Part-time Students			Total		
	87/76	97/76	07/76	87/76	97/76	07/76	87/76	97/76	07/76
average of each college rate	1.009	1.126	1.300	2.561	3.284	3.300	1.169	1.275	1.402
average of sum total *	0.956	1.022	1.132	1.170	1.265	1.073	1.001	1.074	1.120
no. of colleges: rate>1.0	21	26	33	23	25	25	27	28	31
no. of colleges: rate <1.0	23	18	12	18	18	20	17	16	14

* As for this column, only data of colleges & Universities which had data of each year were used.

Sum total of each college enrollment in 1987, 1997, 2007 was divided by sum total of each college enrollment in 1976.

3. The Outline of Ex-Women's Colleges in the U.S.

As mentioned above, 36 WCU have disappeared since 1985. Table 7 shows the names of the ex-WCU and some of their features. 27 out of the 36 colleges (or 75%) became coeducational colleges by themselves. Another five merged with coeducational colleges (Fordham Univ., George Washington Univ., Hartford Univ., Loyola Univ., and Mercer

Univ.), and the remaining four closed. As for their locations, 18 WCU out of 38 (or 53%) in the North East, 8 out of 17 (47%) in the Mid West, and 8 out of 25 (32%) in the South disappeared. However, most of them survive as coed-colleges. It is remarkable that more than half of the WCU in the NE disappeared.

Table 7. Women's Colleges & Univ. which Became Coed, Merged, or Closed since 1985

district	name of college	state	year of coed,		district	name of college	state	year of coed,	
			merged,	closed				merged,	closed
NE	Albertus Magnus College	CT	1985	coed	MW	Lake Erie College	OH	1985	coed
NE	Caldwell College	NJ	1986	coed	MW	College of Mount St. Joseph	OH	1986	coed
NE	Felician College	NJ	1986	coed	MW	De Lourdes College	IL	1987	closed
NE	Wheaton College	MA	1987	coed	MW	Univ. of Saint Mary	KS	1988	coed
NE	Centenary College	NJ	1988	coed	MW	College of St.Teresa	MN	1989	closed
NE	Colby-Sawyer College	NH	1989	coed	MW	Mundelein College → Loyola Univ	IL	1991	merged
NE	Endicott College	MA	1994	coed	MW	William Woods University	MO	1997	coed
NE	Lasell College	MA	1997	coed	MW	Notre Dame College	OH	2001	coed
NE	Mount Sacred Heart College	CT	1997	closed	S	Goucher College	MD	1986	coed
NE	Elms College	MA	1998	coed	S	Marymount University	VA	1986	coed
NE	Trinity College of Vermont	VT	2000	closed	S	Tift College → Mercer Univ.	GA	1986	merged
NE	Emmanuel College	MA	2001	coed	S	Mount Vernon → GWU	DC	1999	merged
NE	Rosemont	PA	2001	coed	S	Hood College	MD	2003	coed
NE	Seton Hill College	PA	2002	coed	S	Blue Mountain College	MS	2005	coed
NE	Marymount College → Fordham	NY	2002	merged	S	Randolph-Macon Woman's College	VA	2007	coed
NE	Hartford College for Women	CT	2003	merged					
NE	Chestnut Hill College	PA	2003	coed					
NE	Lesley University	MA	2005	coed					
NE	Wells College	NY	2005	coed					
NE	Immaculata Univ. College	PA	2005	coed					
NE	Regis College	MA	2007	coed					

closed

merged

4. A Comparative Analysis of Women's Colleges with Coed-Colleges

To make clear the features of WCU, WCU were analyzed by comparing them with coeducational 4-year colleges.

Coeducational colleges used in this study were chosen according to the following standards to enable a reasonable comparison with WCU.

- 1) Only private 4-year colleges are targeted since all current women's colleges are private.
- 2) Full-time enrollment of each college is less than about 3,000 since enrollments of all WCU are under 3,000. Relatively small-scale colleges are chosen.
- 3) Mainly liberal arts colleges are chosen, but some master's colleges and profession-

oriented colleges are included. National Universities like Harvard, or Yale are removed.

- 4) Colleges are primarily selected from states where WCU are located. The ratio of WCU number in each district (NE, S, MW, W) is also considered.
- 5) Colleges are chosen considering Barron's 5-scale ranking ("Most Competitive" ; Rank 1, "Highly Competitive" ; Rank 2, "Very Competitive" ; Rank 3, "Competitive" ; Rank 4, "Less Competitive" ; Rank 5). Colleges in "Non competitive" and "Special" rankings are removed.
- 6) Colleges which have full descriptions including numbers of applied, accepted, and enrollment in each Barron's data book are selected.

Using these standards, 66 coeducational colleges were selected for the comparative study. Table 8 shows a ratio of selected coeducational colleges and WCU by locations and Barron's rankings. Samples were abstracted considering that the number in each category was more than 10. Thus the ratio in the West became higher than that of WCU. As for the ranking, colleges are sorted by the ranking of "*Barron's Profiles of American Colleges 2009*." The ratio of "Competitive" ranked colleges is fewer than that of the whole. Although the ranking of each college varied a little due to the year, thereafter the categories sorted by this ranking are used.

Table 8. Locations and Rankings of Selected Coeducational Colleges

Location	NE	S	MW	W	total	
Women's	18	17	9	3	47	upper : no. of colleges
Colleges	38.3	36.2	19.1	6.4	100.0	lower : ratio (%)
Coed	28	17	11	10	66	
Colleges	42.4	25.8	16.7	15.2	100.0	
Ranking	most competitive Rank 1	highly competitive Rank 2	very competitive Rank 3	competitive Rank 4	less competitive Rank 5	total
Women's	4	3	10	21	7	45 * 2
Colleges * 1	8.9	6.7	22.2	46.7	15.6	100.0
Coed	10	12	15	18	11	66
Colleges	15.2	18.2	22.7	27.3	16.7	100.0
Barron's Data	82	109	277	671	199	1338
	6.1	8.1	20.7	50.1	14.9	100.0

* 1 Two colleges without ranking are removed.

* 2 Although Moore College is in the category "Special", here it is classified as "Less Competitive"

Separate from the above coeducational colleges, another group was composed of former women's colleges which changed to coeducational colleges, and didn't include

merged colleges.

Finally, another group of “Top National Universities” (TNU) was formed. This group consisted of 15 private research-oriented universities including Harvard, Yale, and Stanford. All the universities are ranked in the top 50 of “Best National Universities” (published by U.S. News & World Report in 2009).

Therefore, four groups, namely WCU, ex-WCU, Coed-colleges (Coed), and Top National Universities (TNU), were prepared.

Data of 1987, 1997, and 2007 described on *Barron's Profiles of American Colleges* (ver. 1988, 1999, 2009) were analyzed. As for the WCU, data of 1976 and 1993 from *Women's Colleges in the United States* (Harwarth, 1997) were added.

4-1. Changes and the rate of applied, accepted, and enrolled students

Competitive rates of “applied/accepted” (AP/AC), “accepted/enrolled” (AC/EN), and “applied/enrolled” (AP/EN) were examined at three points in time (see Table 9-1, 2, 3).

Initially, judging from AP/EN rates, applied numbers increased gradually in all groups. The main reason why applicants increased is supposed that students increased the number of colleges to which they submitted applications. Another reason is that the population of college-age people increased between 1987 and 2007.

AP/AC rates in all groups increased between 1987 and 2007. In particular, the ratio of WCU consistently increased from 1.31 in 1988 to 1.33 in 1997, and 1.65 in 2007. In the cases of ex-WCU and total Coed-colleges, however the rates dropped a little in 1997, though the rates of 2007 exceeded those of 1987 (ex-WCU : from 1.26 to 1.50, Coed : from 1.54 to 1.99). Moreover, there is a tendency that the higher colleges were in the rank, the higher the competitive rate went. However, there were only 3 of 8 groups (including subgroups of Coed) whose AP/AC rate exceeded 2.0 in 2007, that is, “TNU” (6.66), “Rank 1” (3.77), and “Rank 2” (2.17). The fact that the rates of other groups including WCU didn't reach 2.0 means that colleges in those groups didn't have much choice from their applicant pool. In the case of WCU in 2007, about 60% of the applicant students were accepted.

As for the AC/EN rate, that of the “TNU” is a little lower than the others. Since the number of applied colleges per student increased, this rate naturally rose.

Table 9-1. Rate of Applied, Accepted, and Enrolled in 1987

		applied/ accepted	accepted/ enrolled	applied/ enrolled
Women's Colleges	average out of 42(%)	1.306 4(9%)* ¹⁾	2.103 14(33%)* ²⁾	2.809 5(12%)* ³⁾
Ex-Women's Colleges (except merger)	average out of 9(%)	1.263 0	2.064 4(44%)	2.602 0
Coed Colleges (total)	average out of 64(%)	1.547 10(16%)	2.413 14(34%)	3.797 23(36%)
Rank 1	average out of 10(%)	2.663 8(80%)	2.687 1(10%)	6.950 10(100%)
Rank 2	average out of 12(%)	1.566 2(17%)	2.813 0	4.469 7(58%)
Rank 3	average out of 15(%)	1.378 0	2.232 7(47%)	3.074 3(20%)
Rank 4	average out of 16(%)	1.248 0	2.153 3(19%)	2.725 2(13%)
Rank 5	average out of 11(%)	1.179 0	2.351 3(27%)	2.743 1(9%)
Top National Univ. (TNP)	average out of 13(%)	3.828 10(77%)	2.164 5(38%)	7.691 11(85%)

* 1 : no. of colleges : rate>2.0 * 3 : no. of colleges : rate>4.0

* 2 : no. of colleges : rate<2.0

Table 9-2. Rate of AP, AC, and EN in 1997

		applied/ accepted	accepted/ enrolled	applied/ enrolled
average		1.330	2.485	3.359
out of 36(%)		2(6%)	5(14%)	9(25%)
average		1.193	2.543	3.028
out of 15(%)		0	0	0
average		1.484	2.986	4.451
out of 65(%)		9(14%)	6(9%)	30(46%)
average		2.490	3.207	7.670
out of 10(%)		7(70%)	0	10(100%)
average		1.513	3.729	5.611
out of 12(%)		2(17%)	0	11(92%)
average		1.325	2.656	3.542
out of 15(%)		0	3(20%)	4(27%)
average		1.198	2.824	3.363
out of 18(%)		0	2(11%)	3(17%)
average		1.230	2.635	3.218
out of 11(%)		0	1(9%)	2(18%)
average		4.231	2.285	8.575
out of 14(%)		13(93%)	6(43%)	14(100%)

upper : average

lower : no. of colleges & rate (%)

Table 9-3. Rate of AP, AC, and EN in 2007

		applied/ accepted	accepted/ enrolled	applied/ enrolled
Women's Colleges	average out of 29(%)	1.646 6(21%)	3.267 1(3%)	5.447 18(62%)
Ex-Women's Colleges (except merger)	average out of 8(%)	1.502 1(13%)	3.819 2(13%)	5.666 7(88%)
Coed Colleges (total)	average out of 63(%)	1.999 20(32%)	3.270 3(5%)	6.441 42(67%)
Rank 1	average out of 10(%)	3.777 10(100%)	3.008 0	10.786 10(100%)
Rank 2	average out of 12(%)	2.171 5(42%)	3.769 0	8.057 12(100%)
Rank 3	average out of 14(%)	1.662 2(14%)	3.223 1(7%)	5.773 7(50%)
Rank 4	average out of 16(%)	1.394 1(6%)	3.376 0	4.743 9(56%)
Rank 5	average out of 11(%)	1.451 2(18%)	2.876 2(18%)	3.893 4(36%)
Tou National Univ. (TNU)	average out of 15(%)	6.666 15(100%)	1.990 9(60%)	11.86 15(100%)

cf. AP, AC, EN in Table9-2,3 title separately stand for Applied, Accepted, Enrollment

4-2. Enrollment

Table 10 indicates the ratio of full-time students to the undergraduate enrollment. It is found that the ratios of WCU and ex-WCU were lower than the other ratios, particularly lower in 1987 and 1997 when the college-age population dropped (*see Appendix Figure 1). Then the ratio of part-time students increased, and they accounted for 30% in ex-WCU.

Hitherto, full- and part-time students in undergraduate were described, however, graduate school students were not referenced. As presented in Table 11, many WCU founded graduate schools over the last 20 years. In 1987, the number of WCU which had graduate schools was 21, namely 44.7% of the 47 WCU. By 2007, graduate schools were attached in 34 out of the 47 WCU, about three-fourths of the whole.

Table 12 shows the ratio of graduate students to total enrollment. WCU increased the ratio of graduate students gradually, and the ratio to the total without part-time students rose from 0.229 in 1987 to 0.290 in 2007. Confined to the WCU which had data at every point, the ratio in 2007 jumped up to 0.350. This means some WCU expanded their graduate school student enrollment rather than their undergraduate student enrollment.

Table 10. Ratio of Full-time Students in Total (Full-time & Part-time)

		1976	1987	1997	2007
Women's	average	0.822	0.760	0.780	0.796
Colleges	no. of Colleges *	2/47	9/44	5/44	4/45
Ex-Women's	average	0.775	0.727	0.679	0.767
Colleges	no. of Colleges	2/16	1/13	4/16	2/16
Coed Colleges	average	—	0.906	0.914	0.937
(Total)	no. of Colleges	—	1/66	1/66	0/66
Rank 1	average	—	0.966	0.974	0.994
	no. of Colleges	—	0/10	0/10	0/10
Rank 2	average	—	0.982	0.959	0.969
	no. of Colleges	—	0/12	0/12	0/12
Rank 3	average	—	0.891	0.936	0.917
	no. of Colleges	—	0/15	0/15	0/15
Rank 4	average	—	0.876	0.904	0.928
	no. of Colleges	—	1/18	0/18	0/18
Rank 5	average	—	0.838	0.797	0.893
	no. of Colleges	—	0/11	1/11	0/11
Top National	average	—	0.971	0.976	0.988
Universities	no. of Colleges	—	0/14	0/15	0/15

* numerator : no. of colleges of which ratio is under 0.50
denominator: total no. of colleges in each column

Table 11. Graduate Schools in Women's Colleges

	Master	Doctoral	(%)
1987	21 (44.7)	unknown	
1997	30 (63.8)	3 (6.4)	
2007	34 (72.3)	9 (19.1)	Total: 47 colleges

Table 12. Ratio of Graduate School Students in Total Students

		1987	1997	2007 * 1)	1987	1997	2007 * 2)
		grad/full+grad	grad/full+grad	grad/full+grad	grad/all * 4)	grad/all	grad/all
Women's Colleges	average (all)	0.229	0.256	0.290	0.184	0.200	0.237
	average (confined) * 3)	0.229	0.294	0.350	0.184	0.229	0.287
Ex-Women's College (removed merged)	average (all)	0.401	0.329	0.303	0.324	0.246	0.237
	average (confined)	0.250	0.337	0.280	0.173	0.229	0.211
Coed Liberal Arts College (total)	average (all)	0.169	0.151	0.140	0.151	0.135	0.130
	average (confined)	0.161	0.181	0.170	0.147	0.160	0.157
Rank 1	average (all)	0.103	0.121	0.095	0.124	0.134	0.104
	average (confined)	0.103	0.139	0.113	0.124	0.155	0.123
Rank 2	average (all)	0.079	0.105	0.108	0.078	0.103	0.103
	average (confined)	0.079	0.097	0.105	0.078	0.096	0.100
Rank 3	average (all)	0.198	0.177	0.159	0.165	0.160	0.145
	average (confined)	0.166	0.228	0.233	0.146	0.205	0.216
Rank 4	average (all)	0.182	0.121	0.129	0.160	0.108	0.117
	average (confined)	0.182	0.150	0.166	0.160	0.133	0.150
Rank 5	average (all)	0.275	0.215	0.167	0.217	0.181	0.173
	average (confined)	0.275	0.343	0.236	0.217	0.227	0.193
Top National Universities	average (all)	0.431	0.465	0.449	0.423	0.459	0.445
	average (confined)	0.448	0.484	0.480	0.439	0.477	0.477

* 1 denominator is a sum of graduate students, full-time students

* 2 denominator is a sum of graduate students, full-time students, and part-time students

* 3 confined to colleges which had data in every year * 4 all: fulltime+ parttime+graduate

However, except for TNU which kept a high ratio, coed-colleges didn't increase the ratio of graduate students more than the WCU. Even "Rank 5" coed, of which the ratio in 1987 was higher than that of WCU, decreased the ratio from 0.275 in 1987 to 0.167 in 2007 as contrast with WCU. Of course, it must be considered that these colleges were chosen mainly from liberal arts colleges, and the numbers in the sample were not enough to allow conclusions to be made.

4-3. Tuitions and Room & Board Fees

Not only tuitions but also room & board fees (R&B) vary according to college rankings. The higher colleges are in rank, the higher the tuition or R&B goes. For example, an average tuition of "Rank 5" in 2007 is about half of that of "Rank 1" or

TNU. Regarding to WCU, although the average tuition (\$7,567) of WCU in 1987 was located between “Rank 2” (\$9,720) and “Rank 3” (\$6,923), in 2007 it (\$23,496) was between “Rank 3” (\$25,106) and “Rank 4” (\$22,181). The ratio of WCU’s tuition to that of “Rank 2” was 0.81 in 1987 and 0.63 in 2007. While the R&B in WCU was relatively high even now, the tuition of WCU seemed to decline as a whole. The total fee for WCU, which was 76% of “Rank 1” and 85% of “Rank 2” in 1987, is 69% of “Rank 1” and 80% of “Rank 2” in 2007.

Table 13-1. Comparison of Average Tuition

	unit : \$		
	1987	1997	2007
Women's Colleges	7,567	14,159	23,496
Ex-women's Colleges	7,204	14,172	23,278
Coed (total)	7,710	15,366	25,915
Rank 1	10,989	21,204	36,097
Rank 2	9,720	18,993	31,869
Rank 3	6,923	14,703	25,107
Rank 4	6,567	13,510	22,182
Rank 5	5,604	10,044	17,375
Top National U.	12,187	22,033	35,660

Table 13-2. Comparison of Average R & B

	unit : \$		
	1987	1997	2007
Women's Colleges	3,583	5,732	8,570
Ex-women's Colleges	3,581	6,124	9,205
Coed (total)	3,090	5,083	7,863
Rank 1	3,676	5,670	9,118
Rank 2	3,420	5,446	8,343
Rank 3	3,000	4,987	7,748
Rank 4	2,750	4,784	7,335
Rank 5	2,819	4,739	7,220
Top National U.	4,425	6,926	10,278

5. Findings

As mentioned first, this study is in the development stage. With this understanding, some findings are discussed below.

#1 The number of WCU decreased from 85 to 47 by 38, that is, by 45% over the last 26 years. In particular, more than half of the WCU in the North East lost their WCU status.

#2 The average of full-time enrollment of WCU increased little by little. Some WCU steadily increased their enrollment.

#3 Some WCU largely increased part-time students. Compared with the part-time student ratio of all undergraduate students in 1976, the ratio of part-time students increased in 1987 and 1997, however, the ratio tended to decrease in 2007. The ratio of part-time students is higher than those of other groups.

#4 The number of students who applied to WCU increased. It is considered that students increased the number of colleges to apply. As a result, the AP/AC rate rose a little, however, the AC/EN rate increased more than the AP/AC. The average rate of WCU was only 1.64, below 2.0 even in 2007. Below 2.0 in competitive rate, it is hard

for a college to screen or choose students. Meanwhile, the AC/EN rate was 3.26, about double of the AP/AC rate.

#5 Many WCU founded graduate schools in the past 25 years, and now 34 of 47 WCU (three-fourths) have attached graduate schools. In addition, the ratio of graduate students to total students increased gradually. Among groups presented in this study, the ratio of graduate students to the total students in WCU was the second highest behind TNU.

#6 Overall, tuition fees rose threefold over the last 20 years. Average tuition of WCU jumped up from \$7,567 in 1987 to \$23,496 in 2007. Compared with those of coed college groups, the average tuition of WCU was placed between Coed “Rank 2” and “Rank 3” in 1987. However, in 2007 that of WCU is placed between “Rank 3” and “Rank 4”. The ratio of WCU’s tuition to that of Coed “Rank 2” dropped from 0.811 in 1987 to 0.628 in 2007. In comparison with coed colleges, the tuition of WCU relatively fell down over the last 20 years.

Notes

- 1) As showed in Purcell et al (2005, pp.280-285), there are many dissertations written about women’s colleges. Although the foci of those are diverse, qualitative and historical studies predominate. Even in these last several years, several dissertations dealing with women’s colleges have been submitted. For example, Domes (2009) compared two catholic colleges located in the South, which changed from women’s colleges to coed colleges, using internal data. The interest in women’s colleges in the U.S. is not so small. Among many women’s-college-related dissertations, Studer-Ellis’s dissertation written in 1996, “The social transformation of four-year U.S. women’s colleges, 1960-1990”, is one of a few quantitative studies on women’s colleges. According to Studer-Ellis, the number of 4-year women’s colleges decreased from 176 to 65 between 1960 and 1990..
- 2) According to Studer-Ellis (1996), the number of 4-year WCU was 81, 79, 74, 71, 69, 66, 65 every year from 1984 through 1990. Meanwhile, this study shows the number of WCU during the same period is 84, 82, 75, 71, 69, 67, 68 in chronological order. Since the names of WCU weren’t listed in his study, it is impossible to compare WCU in Studer’-Ellis’s study with those in this study. But the difference in numbers of both studies is small. Incidentally, Studer-Ellis’s study counted one public college as WCU.
- 3) In this report, differences between women’s colleges in the U.S. and in Japan are not

discussed closely. However, below Table 14 is put on as a simple indicator to understand the current situation of women's colleges in the U.S.. Table 14 shows the number and rate of Japanese women's colleges and their enrollments in all universities & colleges, and their students. The number of WCU in Japan peaked at 98 in 1998, and today (in 2009) the number has declined to 79 (private 74, national 2, public 3). The rate of WCU in all universities & colleges is 10.2%, the rate in the private sector is 12.4%. As for the rate of enrollment, female students are 40.8% in all students. The rate of WCU students to all female students is 15.7%, and restricted to the private sector, the rate rises up to 19.9%, or one-fifth of all female students in the private sector. Compared with the U.S. rate (1.04%) of WCU full-time students to all female students, and the U.S. rate (2.57%) in private sector (see Table 3), the rates in Japan are significantly high.

Table 14 No. and Rate of Undergraduate Female Students by Institution Types in Japan
As of May 2009

Types of Univ. & Coll.	No. of Univ. Colleges	Total of Students	Total of Female	Total of WCU Female	Rate of Female in Total	Rate of WCU Female in Total	Rate of WCU Female in All Female
National	86(2)	621,800	211,706	4,357	34.05	0.70	2.06
Public	92(3)	136,913	69,190	2,683	50.54	1.96	3.88
Private	595(74)	2,078,195	877,494	175,103	42.22	8.43	19.95
Total	773(79)	2,836,908	1,158,390	182,143	40.83	6.42	15.72
() : No. of W.C.U.					%	%	%

Data : Ministry of Education, Culture, Sports, Science and Technology, *Statistical Abstract 2009*
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#Statistical Data :

- Ministry of Education, Culture, Sports, Science and Technology, *Statistical Abstract 2010*, (http://www.mext.go.jp/b_menu/toukei/main_b8.htm/)
- National Survey of Students Engagement (N. S. S. E.), *The College Student Report*, (<http://www.nsse.iub.edu/>)
- U. S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics 2009-2012*, (<http://nces.ed.gov/quicktables/>)

#Website Materials :

- The Women's College Coalition Website (<http://www.womenscolleges.org/>)

The Websites of Each Women's College and Ex-Women's College. (For example, Sweet Briar College's "NSSE 2010 Benchmark Comparisons" is listed on following address ; http://www.sbc.edu/sites/default/files/Presidents_Office/NSSE.pdf.)

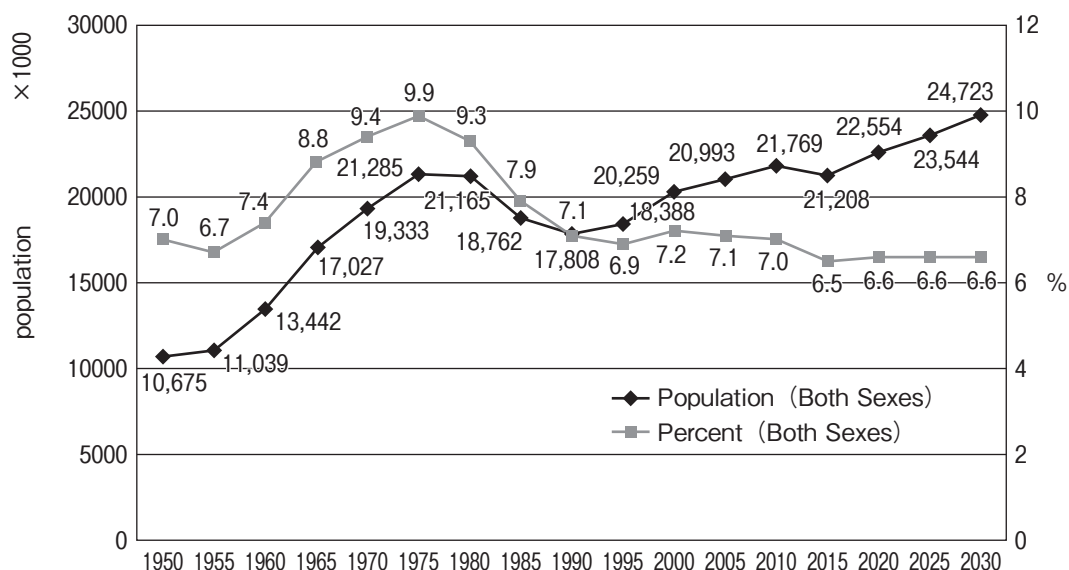
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Appendix :

Appendix Figure 1. Changes of 15-18 age population and it's rate in total population of thd U.S.



Appendix Table 1. Predicted Population of 15-19-year from 1950 to 2030

Year	Population (Both Sexes)	Percent (Both Sexes)	Male Population	Female Population	Percent Male	Percent Female	Age
1950	10,675,000	7.0	5,381,000	5,294,000	7.1	6.9	15-19
1955	11,039,000	6.7	5,558,000	5,482,000	6.7	6.6	15-19
1960	13,442,000	7.4	6,803,000	6,640,000	7.6	7.3	15-19
1965	17,027,000	8.8	8,640,000	8,386,000	9.0	8.5	15-19
1970	19,333,000	9.4	9,816,000	9,517,000	9.8	9.1	15-19
1975	21,285,000	9.9	10,817,000	10,468,000	10.3	9.5	15-19
1980	21,165,372	9.3	10,779,171	10,386,201	9.7	8.9	15-19
1985	18,762,678	7.9	9,585,293	9,177,385	8.2	7.5	15-19
1990	17,808,884	7.1	9,148,333	8,660,551	7.5	6.8	15-19
1995	18,388,275	6.9	9,454,662	8,933,613	7.2	6.6	15-19
2000	20,259,270	7.2	10,417,633	9,841,637	7.5	6.8	15-19
2005	20,993,786	7.1	10,764,907	10,228,879	7.4	6.8	15-19
2010	21,769,824	7.0	11,159,229	10,610,595	7.3	6.7	15-19
2015	21,208,512	6.5	10,843,880	10,364,632	6.8	6.3	15-19
2020	22,554,418	6.6	11,512,926	11,041,492	6.8	6.4	15-19
2025	23,544,857	6.6	12,015,656	11,529,201	6.8	6.4	15-19
2030	24,723,265	6.6	12,611,672	12,111,593	6.9	6.4	15-19

<http://www.census.gov/ipc/www/idb/groups.php> (retrieved Nov./20/2010)