Graduation Research in Humanities and Social Sciences Degree Programs: Outline of a Typical Undergraduate Research Style in Japan

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Abstract

Undergraduate research in Japan, called graduation research (GR), is comparable to that in other countries and is defined here as a final-year curricular activity that completes undergraduate study. This article aims to elucidate GR to contribute to the scholarship of undergraduate research from an international perspective. The main findings based on two nationwide surveys are (a) the percentage of degree programs with a compulsory course of GR is 87.8 percent in the humanities and 50.6 percent in the social sciences; (b) GR is more prevalent in national and public universities than private universities; and (c) undergraduates devote to GR an annual average of 430 hours in the humanities and 312 hours in the social sciences. These findings are interpreted in relation to national statistics of Japanese higher education.

Keywords: *graduation research, humanities, Japanese undergraduate education, quantitative surveys, social sciences, undergraduate research*

Japanese Undergraduate Education

As of May 2018, approximately 2.6 million undergraduates in Japan were enrolled in 782 universities (national = 86; public = 93; private = 603). Table 1 shows the proportion of students in each academic field: social sciences (32.2 percent), engineering (14.7 percent), uncategorized (14.6 percent), and humanities (14.0 percent).

Except for the six-year professional programs for doctors, dentists, pharmacists, and veterinarians, undergraduate degree programs are completed in four years and consist of a minimum of 124 credits. Most students decide which department they will enroll in before entering a university, spend one-half to two years in general education courses, start participating in recruitment activities by the end of their third year, and begin employment in April, just after their graduation.

Universities have one or more faculties, and each faculty is composed of one or more departments. In most cases, a department roughly refers to a degree program. Consequently, students usually start a degree program as soon as they enter a university. Nevertheless, the students have to complete general education courses before their major courses, despite having clear interests at the start.

TABLE 1. Percentage of Undergraduates ($n = 2,599,684$) by Disciplinary Area

Disciplinary area	Percentage of undergraduates
Agriculture	3.0%
Education	7.3%
Engineering	14.7%
Humanities	14.0%
Natural sciences	3.0%
Other	11.2%
Social sciences	32.2%
Uncategorized	14.6%
Total	100%

Note: Based on MEXT statistics (2018).

Another characteristic of Japanese undergraduate education is the wide range of admission difficulty. Generally, admission to national and public universities is more difficult than admission to private universities. Of course, some private universities are extremely selective because there are more than 600 institutions, but about 40 percent of them fall below their admission quota (Kawaijuku Educational Institution 2018). These university sectors also have orientation differences: national universities tend to be research oriented, whereas those that are public or private are likely to be more education oriented. In fact, the faculties of the former usually spend more time on research than they do teaching students (MEXT 2019).

Graduation Research Definition

As discussed in Beckman and Hensel (2009), the components and practices of undergraduate research vary widely; however, the Council on Undergraduate Research provides a broad definition: "An inquiry or investigation conducted by an undergraduate student that makes an original intellectual or creative contribution to the discipline" (CUR 2019). In this article, *graduation research* (GR) indicates a specific type of undergraduate education prevalent in Japan.

GR is defined as a final-year curricular activity that completes undergraduate study, describing two attributes. First, compared with undergraduate research, which may

have no time restrictions, GR is conducted during the last year of undergraduate study because it is deemed to be its culmination. Second, GR is generally a part of the undergraduate curriculum since students register in a GR course and earn credits for graduation after they successfully complete the requirements. Figure 1 defines the relationship of GR to undergraduate research (see, for example, Charity Hudley, Dickter, and Franz 2017; Malachowski et al. 2015; Murray 2017), capstone experiences (see, for example, Hauhart and Grahe 2015; Young et al. 2017), and curricular activities.

Although GR is operationally defined here for scholarly discussion, actual course titles vary and include special seminars and graduation theses as well as GR. In addition, GR outcomes are assessed in many ways, including by theses, presentations, and oral examinations. Despite GR's diversity in practice, the term *graduation research* is familiar to stakeholders in Japan.

There are few studies on GR written in English. A recent example introduced by Imafuku, Saiki, and Suzuki (2016) was a case study of undergraduate research in medical education. Even if including materials in Japanese, previous research on GR is limited. From the perspective of GR providers, Kushimoto (2016) described national GR course offerings and how many credits they provided. Out of 2,129 four-year programs, 68.6 percent had a compulsory GR course, with an average of five credits. Most other
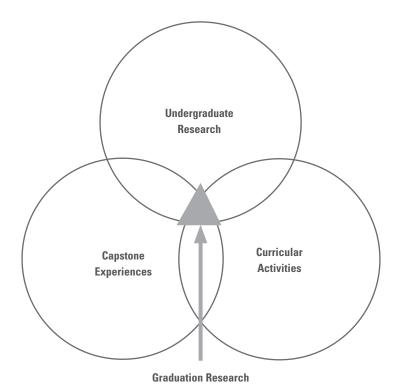
FIGURE 1. Graduation Research

provider research since 2000 has been in the form of case studies, mainly in engineering (see, for example, Kuba and Yasufuku 2007; Suetake 2012). From the student perspective, Tanimura (2013) explored the relationship between experiences of GR and self-rated outcomes of undergraduate study, based on survey data ($n = 540$) collected at the Faculty of Letters, Gakushuin University. The intent of Tanimura's study to analyze the effect of GR is valuable; however, because of its limitation as a case study, the findings should be carefully interpreted.

GR Study Aims and Methods

This study explored the following aspects of humanities and social sciences graduation research: (a) the percentage of degree programs with compulsory GR courses and the number of credits of those courses, (b) the traits of a degree program that make a GR course compulsory, and (c) the amount of work that undergraduate students devote to GR. Data for (a) and (b) were collected in 2017 through a website survey of all 780 universities at that time in Japan. Because Japanese universities are required to allow public access to their information, student handbooks and curriculum requirements for graduation are available online. The traits considered in (b) were sector (national, public, or private university), disciplinary area, and admission difficulty according to the *t*-score calculated by the Kawaijuku Educational Institution (based on entrance examinations) and referenced in Ogi (2017). The results of a 2014 survey by the National Institute for Educational Policy Research (2016; $n = 20,184$) were used for (c). The National Institute for Educational Policy Research survey explored the multifaceted dimensions of undergraduate

study in Japanese higher education and had a relatively high response rate (44.7 percent, 35.6 percent, and 55.9 percent from national, public, and private universities, respectively). Although this survey was not specifically focused on GR, the amount of time per week that fourth-year students devoted to GR was investigated.

GR Study Results

Humanities

There are four disciplinary areas under the humanities: literature, history, philosophy, and other (MEXT 2018). Table 2 shows the distribution of credits in compulsory GR courses (CGRCs). Out of 870 degree programs in the humanities, just over 20 percent have no CGRCs, with the percentage varying from 8.3 percent of history programs to 25.2 percent of literature programs. A plurality of CGRCs have five to eight credits, which corresponds to 225 to 360 hours of study, according to the Standards for Establishment of Universities in Japan (MEXT Higher Education Bureau 2009). Almost one-third of history programs tend to assign more than eight credits for CGRCs; many CGRCs in literature programs (62 percent) have fewer than five credits.

To determine how disciplinary areas influence the existence of CGRCs, a logistic regression analysis was conducted: the dependent variable was 0 or 1 (meaning there was a CGRC), and the baseline category for sector was private and for disciplinary area "other." First, the results in Table 3 suggest that sector is the most influential variable; national universities are about nine times more likely to provide CGRCs than private universities. Second, there are

TABLE 2. Credits in Compulsory Graduation Research Courses (Humanities)

Disciplinary area Number of programs	Literature 317	History 60	Philosophy 147	Other 346	Total 870
No compulsory GR courses					
Number of programs	80	5	27	81	193
Percentage of programs	25.2%	8.3%	18.4%	23.4%	22.2%
Compulsory GR courses of 1–4 credits					
Number of programs	85	7	35	107	234
Percentage of programs	36.8%	11.7%	23.8%	30.9%	26.9%
Compulsory GR courses of 5–8 credits					
Number of programs	119	29	54	105	307
Percentage of programs	37.5%	48.3%	36.7%	30.3%	35.3%
Compulsory GR courses of 9 or more credits					
Number of programs	33	19	31	53	136
Percentage of programs	10.4%	31.7%	21.1%	15.3%	15.6%

Note: GR = graduation research. Percentages are calculated by column for each disciplinary area and the total.

TABLE 3. Logistic Regression Analysis Results (Humanities)

	B	SE	Wald	p	Exp (B)
Sector			18.559	0.000	
National	2.215	0.627	12.494	0.000	9.158
Public	1.499	0.545	7.558	0.006	4.475
Disciplinary area			12.410	0.006	
Literature	0.087	0.197	0.197	0.657	1.091
History	1.406	0.491	8.194	0.004	4.079
Philosophy	0.632	0.280	5.096	0.024	1.880
Admission difficulty	-0.021	0.012	3.157	0.076	0.979

Note: Negelkerke R^2 = 0.072, correct prediction: 78.7%. B = partial regression coefficient; SE = standard error; Wald =Wald chi-square statistics; Exp (B) =odds ratio

TABLE 4. Hours per Week Spent on Graduation Research by Fourth-Year Humanities Students (*n* = 580)

Hours per week spent on graduation research	Percentage of fourth-year humanities students
1–5	31.2%
6–10	23.1%
11–15	15.3%
16–20	9.0%
21–25	9.1%
26–30	4%
31+	8.3%
TOTAL	100%

certain differences depending on disciplinary areas; history programs are four times more likely to provide CGRCs than programs categorized as "other." Finally, admission difficulty does not have much influence when the sector and disciplinary area of degree programs are considered.

Table 4 shows the amount of time per week that humanities students devoted to GR during their fourth year. Participants who responded "0 hours" (*n* = 144) were omitted from the total, because not all universities offered CGRCs, as seen in Table 2. The majority of respondents spent fewer than 11 hours on GR per week, with 8.3 percent devoting more than 30 hours. The average, using the median of each class, was 12.3. This means that fourth-year students in humanities programs spend an average of 430 hours on GR, as the Japanese academic year typically has 35 weeks.

Social Sciences

There are also four disciplinary areas under the social sciences: law and politics (L&P), commerce and economics (C&E), sociology, and other (MEXT 2018). Of 1,100 social science degree programs, just under 50 percent have no CGRCs, with the percentage ranging from 29.1 percent in sociology to 83.3 percent in L&P (see Table 5). Almost half of social science degree programs have no CGRCs, compared with 22 percent in the humanities. However, more than 70 percent of sociology programs have CGRCs, with nearly 10 percent requiring more than eight credits.

Again, logistic regression analysis was conducted to determine how disciplinary areas shaped the existence of CGRCs. The results in Table 6 reveal that the most influential variable is sector; public universities are about 14 times more likely to provide CGRCs than private universities. There is also difference by disciplinary area; the likelihood of CGRCs in L&P programs is about one-fifth the likelihood in "other" programs. Finally, admission difficulty matters slightly; the more difficult the admission standards, the less likely CGRCs are offered.

Table 7 shows the number of hours per week that social science students spent on GR during their fourth year. Participants who responded "0 hours" (*n* = 348) were omitted from the total because not all universities offer CGRCs (see Table 5). Almost a majority spent less than 6 hours on GR per week, with only 2.5 percent allocating more than 30 hours. The average, using a median of each class, was 8.9 hours. Because there are 35 academic weeks in a year, this results in 312 hours annually; this average time is deemed short when compared with the average time for the humanities.

Discussion and Conclusion

First, compulsory courses were included in 87.8 percent of humanities degree programs and 50.6 percent of social science degree programs. This nearly 40-percent gap might suggest that GR is more emphasized in the humanities than in the social sciences. In fact, the number of credits in compulsory GR courses also tended to be larger in the

TABLE 5. Credits in Compulsory Graduation Research Courses (Social Sciences)

Disciplinary area Number of programs	Law and politics 150	Commerce and economics 570	Sociology 265	Other 115	Total 1,100
No compulsory GR courses					
Number of programs	125	292	77	49	543
Percentage of programs	83.3%	51.2%	29.1%	42.6%	49.4%
Compulsory GR courses of 1–4 credits					
Number of programs	21	192	87	39	339
Percentage of programs	14.0%	33.7%	32.8%	33.9%	30.8%
Compulsory GR courses of 5–8 credits					
Number of programs	3	72	79	20	174
Percentage of programs	2.0%	12.6%	29.8%	17.4%	15.8%
Compulsory GR courses of 9 or more credits					
Number of programs	1	14	22	7	44
Percentage of programs	0.7%	2.5%	8.3%	6.1%	4.0%

Note: GR = graduation research. Percentages are calculated by column for each disciplinary area and the total.

TABLE 6. Logistic Regression Analysis Results (Social Sciences)

	B	SE	Wald	*p*	Exp (B)
Sector			88.424	0.000	
National	2.442	0.308	62.726	0.000	11.493
Public	2.649	0.412	41.342	0.000	14.144
Disciplinary area			44.118	0.000	
Law and politics	-1.596	0.366	18.996	0.000	0.203
Commerce and economics	-0.196	0.280	0.490	0.484	0.822
Sociology	0.464	0.310	2.243	0.134	1.590
Admission difficulty	-0.067	0.011	35.964	0.000	0.935

Note: Negelkerke R^2 = 0.268, correct prediction: 67.8%. B = partial regression coefficient; SE = standard error; Wald =Wald chi-square statistics; Exp (B) = odds ratio

former than in the latter (see Tables 2 and 5). Even if some student GR experiences in elective courses are considered, humanities students are still more likely to take part in GR than social science students.

One possible reason for this finding is that outcomes of undergraduate study in social sciences may be judged by the acquisition of professional qualification, passing a law school entrance examination, or civil service employment. Generally speaking, degree programs in the humanities have less connection to a specific job than one finds in the social sciences. Another possibility concerns the student-teacher ratio. Although the number of social sciences students is more than double that of humanities students

(see Table 1), the number of faculty in each field does not differ much, with 22,981 in the humanities and 23,852 in the social sciences (MEXT 2016). Since the instruction of GR requires individualized time-consuming faculty care, it is hard for degree programs with a high student-teacher ratio to offer a compulsory GR course.

Next, when considering the determinants of offering compulsory GR courses, the most influential trait of a degree program was the institutional sector. According to the logistic regression analysis results, both in the humanities and the social sciences, sector is more related to the probability of having CGRCs than disciplinary area or admission difficulty (see Tables 3 and 6).

TABLE 7. Hours per Week Spent on Graduation Research by Fourth-Year Social Science Students ($n = 600$)

Hours per week spent on graduation research	Percentage of fourth-year social science students
1–5	45.5%
6–10	22.5%
11–15	14.7%
16–20	10.0%
21–25	2.5%
26–30	2.3%
31+	2.5%
TOTAL	100%

The influence of the institutional sector may be explained by the different percentages of students who attend graduate school. The percentage of students who go on to graduate school is 33.4 percent in national universities, 13.4 percent in public universities, and only 5.6 percent in private universities (MEXT 2018). This is reasonable, as GR can function as preparation for graduate school.

Finally, the average amount of time undergraduate students devote to GR annually is 430 hours in the humanities and 312 hours in social sciences (see Tables 4 and 7). Article 21 of the Japanese Standards for Establishment of Universities mandates that "a course for one credit shall normally have contents that require 45 hours of study" (MEXT Higher Education Bureau 2009). The average amount of work by humanities students is worth approximately 10 credits and about 7 credits for social science students. Meanwhile, the average credits of a compulsory GR course are 6.9 in the humanities and 5.4 in the social sciences. Therefore, GR work is generally undervalued in terms of academic credits.

This discordance between workload and credits is one of the pressing issues concerning undergraduate curriculum in Japan. The Ministry of Education, Culture, Sports, Science and Technology (MEXT) Central Council for Education (2012) has cited inadequate workloads, especially in lecture-style courses for first-year students—in other words, the overvaluation of academic credits, contrary to undervaluation in the case of GR. These facts suggest insufficient understanding of the credit system and course and curriculum design under that system. This problem must be solved to set reasonable GR course objectives and to assess accurate learning outcomes.

Future Implications

The above findings present two implications for international discussion of undergraduate research. One is the importance of understanding undergraduate research in the context of each country's undergraduate education system. As described, undergraduate research in Japan is normally part of the curriculum, and students register in the relevant courses during their final year. However, in some countries, students may study undergraduate research regardless of their year in school. This feature leads to differences in undergraduate research workload and outcomes.

Another implication is that a multifaceted perspective is vital to evaluating undergraduate research. This study succeeded in revealing the undervaluation of GR in terms of academic credits, because it examined the offering of courses and student survey results. Similarly, when analyzing systems and practices of undergraduate research, it is important to describe details through case studies, as well as to provide a broad picture through quantitative research like this study.

Acknowledgments

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