Study on the Operation Status and Improvement Plans for Graduate Schools[1]

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Abstract—The purpose of this study is to analyze the current status and actual conditions of management and operation of graduate schools within general universities in Korea. In order to analyze the current status and actual condition of graduate schools, 5 areas comprised of 26 items were organized and implemented based on the CIPP evaluation model. The analysis was conducted on the research subjects of 106 graduate schools out of 185 (57.3%). The results of the survey found that Private universities account for approximately 70% of graduate degree programs in Korea, and they are evenly distributed across the country, providing opportunities and accessibility to graduate education. In this process, most of the regulations for major graduate school academic systems are in place. In order to improve the quality of graduate schools in the future, first, it is necessary to review the upward adjustment of the credits required for graduation. Second, there needs to be efforts to manage the quality of theses, and third, there needs to be improvement of the education conditions and support system for graduate schools. Fourth, there is a need to improve the administrative expertise of graduate schools.

Keywords—**Graduate school, Educational conditions and support system, Academic operation and management, Degree conferment system, CIPP Model**

1. INTRODUCTION

In South Korea, there is rising interest in graduate school education as well as undergraduate education. Moreover, as the demand for high-quality professionals increases as we enter the era of the fourth industrial revolution, the center and focus of the education system is expected to shift to graduate school. Graduate school in South Korea has grown rapidly in terms of numbers but the quality level is yet insufficient to meet the growing demands of society. Looking at the degree of quantitative expansion of Korean graduate schools, the number of graduate schools from 64 in 1970 to 1,169 in 2020 has increased by more than 18fold, and the number of enrolled students has also increased by 42 times from 6,640 in 1970 to 276,498 in 2020. However, despite such quantitative expansion, South Korean graduate schools are evaluated and deemed to have insufficient capacity and conditions for knowledge creation compared to advanced and developed countries [4]- [6], [8], [9], [11], [14], [16]-[18].

The graduate school system in South Korea is largely classified into three types of general graduate school, vocational graduate school, and special graduate school. General graduate schools aim for 'basic theories of academic studies and advanced academic research', vocational graduate schools aim for 'application of practical theories and research & development', and special graduate schools aim for 'continued education for professionals and adults'. However, although these graduate school systems and structures exist separately, the contents and methods of education are not easy to distinguish in reality [10], [18].

Graduate schools and education have received criticism and it has been pointed out that one of its problems is that the competitiveness of high-quality creative human resources who will lead the nation's future growth engines is weak due to the poor education of graduate schools. Despite the emergence of graduate education as a key field for enhancing national competitiveness, institutional and policy efforts to improve the conditions and capabilities to raise the level of graduate school to a global level can be seen as insufficient [1]-[3], [12], [13], [15]. It has not yet been possible to comprehensively check the conditions and outcomes of education and research and link them with administrative and financial support in order to secure the quality of graduate school education [7].

This study started from the fact that there is a need to prepare and promote a plan for graduate schools to faithfully operate academic management and improve the quality of the graduate school. In order to improve the quality of graduate schools, an accurate grasp and analysis of the current state of the operation of graduate schools is required [3], [5], [7], [14], [18]. The way to check the general status of the current graduate school is through the information on the graduate school field under the university information disclosure system. However, the current publicly announced information for graduate schools provided centers on statistics on input and output such as establishment status, student status, and employment status of graduate school, and information on process-related variables such as the specific operation method and system of graduate school is not provided [7].Therefore, it is necessary to provide a balanced analysis of the current status of input, process, and output of graduate schools, and for policy proposals and suggestions to be based on this foundation. To this end, the purpose of this study is to analyze the current status and operation of general graduate schools.

2. Research Method

This study aims to grasp the current status and operation of general graduate schools. The status of graduate schools presents basic statistics, and the operation status survey approaches the operation of general graduate schools in the Context-Input-Process-Product evaluation model (CIPP). Based on this, the actual situation was analyzed. In particular, the survey was focused on how faithfully the general graduate school is being operated. Through the analysis of the actual condition of general graduate schools using the CIPP approach model, and suggests improvement plans for general graduate schools [14].

The analysis of the academic operation and management of general graduate schools was completed in two stages. The first step analyzed the statistics of students attending general graduate schools based on the data from the University Information Disclosure System. Since 2008, South Korea launched the University Information Disclosure System to guarantee the public's right to know and to manage data related to higher education. In the second step, a survey was used to examine the operation status of general universities.

2.1 Research Subjects

In 2020, a structured survey paper based on the CIPP approach model was distributed to 185 universities operating general graduate schools, and 106 (57.3%) graduate schools responded and participated in the survey. The structured survey paper was made in the form of an Excel file and was done through e-mail.

2.2 Survey Contents

The contents of the survey consisted of questions on the current status of each area based on the CIPP model for general graduate school operation. The CIPP model for analyzing the current status of general graduate schools can be converted where educational conditions and support systems are environmental factors, goals and plans as input factors, academic management and management, curriculum and teaching, learning and degree conferment system as a course factors, and education and research capabilities as an output factor. This is illustrated as Fig. 1.
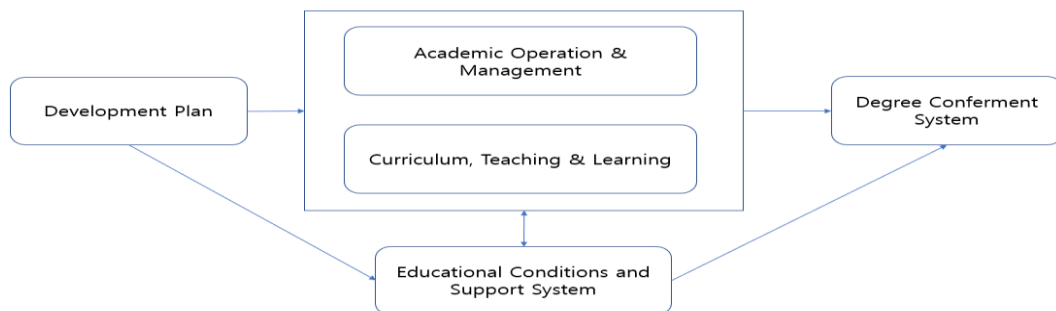

Fig. 1 Graduate School Basics and Status Analysis Model(CIPP Model)

The detailed contents of the survey on the current state of general graduate school operation are as follows.

Table 1. Analysis Contents Of Graduate School Status Survey (CIPP model)

Analysis Area	Current Status Survey Analysis (General Graduate School)	
Development Plan (Context)	▪ Graduate School Development Plan ▪ Self-Evaluation	▪ Graduate School Specialization Plan
Educational Conditions & Support System (Input)	▪ Graduate school administration office operation type ▪ Postgraduate study method program opening ▪ Student Council operation status	▪ Graduate School Administration Officer Operation Model ▪ Graduate student human rights and research ethics ▪ Current status of thesis presentation support for graduate students
Academic Operation & Management (Process)	▪ Current status of university (graduate) ▪ Duration of classes ▪ Grade evaluation method	▪ Required Credits ▪ Attendance Criteria
Curriculum, Teaching & Learning (Process)	▪ Thesis guidance credits ▪ Multiple degrees and joint degrees between universities ▪ Academic degree linkage (integration)	▪ Whether excess credits are recognized ▪ Credit exchange between universities ▪ Cooperative course operation

Degree Conferment System (Product)	▪ Graduation exam ▪ Presentation of thesis proposal ▪ Mandatory examination of thesis plagiarism	▪ Publication of journal articles ▪ Public presentation of thesis ▪ Number of dissertation review members

3. Research Results

3.1 Analysis of the Overall Status of General Graduate Students

A comparison of general graduate schools in 2008 and 2020 show a 20% increase in the number of graduate schools from 154 to 186. While the number of freshmen students increased 12.2 % (55,430 to 66,982), graduate students increased 11.6% (134,453 to 156,192), and international students increased 284% (9,491 to 27,028), the rate of student dropout continues to rise.

Table 2. Overview of General Graduate Student Numbers

School Type		2008	2011	2014	2017	2020
No. Of General Graduate Schools		154	170	177	184	186
Freshmen Status	Entrance Capacity	56,430	58,988	63,437	63,810	64,261
	No. Enrolled	55,032	62,086	65,057	62,792	66,982
	Freshmen Recruitment Rate(%)	97.5	105.3	102.6	98.4	104.2
No. Of Students		134,453	147,062	151,991	152,039	156,192
No. Of International Students		9,491	14,269	15,773	18,347	27,028
Status of Dropout Students	No. Of Dropout Students	7,790	8,378	8,983	9,291	9,523
	Dropout Rate	5.8	5.7	5.9	6.1	6.2

Note: As of April of the current year

3.2 Development Plan

3.2.1 Status Of Development Plans For Graduate School

Among 104 graduate schools, 82 graduate schools (78.8%) had a separate graduate school development plan, and 22 (21.2%) had graduate school development plans included in their university development plans.

Table 3. Status of development plan for graduate school

Category	Included in University Development Plan	Separate Graduate School Development Plan	Total
N	22	82	104
%	21.2	78.8	100.0

3.2.2 Establishment of Graduate School Specialization Plans

Among 101 graduate schools, 23 graduate schools (22.8%) had a separate graduate school specialization plan, and 62 (61.4%) graduate schools included a graduate school specialization plan. There were also 16 graduate schools (15.8%) with no plans. Overall, it was found that about 85% of the graduate schools established specialization plans.

Table 4. Establishment of Graduate School Specialization Plans

Category	No Graduate School Specialization Plans	Included in Graduate School	Separate Graduate School Specialization	Total

		Development Plans	Plan	
N	16	62	23	101
%	(15.8%)	(61.4%)	(22.8%)	(100.0%)

3.2.3 Graduate School Self-Assessment Status

Among the 104 graduate schools, 82 graduate schools (78.8%) conducted self-assessment, and 22 (21.2%), including undergraduates, conducted self-assessment.

Table 5. Method of Conducting Self-assessment of Graduate School

Category	Self-Assessment Conducted (Including Undergraduate)	Self-Assessment Conducted Separately for Graduate School	Total
N	22	82	104
%	(21.2%)	(78.8%)	(100.0%)

3.3 Academic Operation and Management
3.3.1 New Student Recruitment Status

Upon observation of the history of freshmen in the graduate school's master's course, the rate of students from their own university was 43.2%, and that of other universities was 56.8%.

Table 6. Average Number Of Freshmen Recruited By University (Master's Program)

Category	Number of Universities	Own University Affiliate	Other University Affiliate	Total
Average No. of Recruited Freshmen Students by University (Master's Program)	105	117.6 (43.2%)	154.4 (56.8%)	272.0 (100.0%)
Average No. of Recruited Freshmen by University (Doctoral Program)	102	64.3 (54.3%)	54.2 (45.7%)	118.4 (100.0%)
Average No. of Recruited Freshmen by University (Integrated Master's & PhD. Program)	51	18.6 (49.1%)	19.3 (50.9%)	38.0 (100.0%)

Note: Calculated based on students enrolled in September 2017 and March 2018 (excluding research students), and the number of recruitments is the average of the number of applicants for each university that submitted the data. General admission, special screening, undergraduate/master's courses, other screenings, etc.

3.3.2 Required Credits For Completion

The required credits to complete the graduate program are about 24 to 26 credits for the master's program, about 34 to 40 credits for the doctoral program, and about 54 to 60 credits for the integrated master's and doctoral program.

Table 7. Required Credits For Completion

Category	Master's Program		Doctoral Program		Integrated Master's & Doctoral Program	
	No. of Universities	Required Credits for Completion	No. of Universities	Required Credits for Completion	No. of Universities	Required Credits for Completion
N %	100	24.8	96	37.1	60	58.3

Note: The required credits are credits required for completion of each degree program. If the required credits are different for each major, the most commonly required credits are used.

3.3.3 Class Duration

Among 103 master's programs of graduate schools, 97 graduate schools (94.2%) operated in 4 semesters and 3 graduate schools (2.9%) operated in 8 semesters. There were 2 (1.9%) that operated over 6 semesters. Overall, about 94% of the study period for the master's course in graduate school is operated in 4 semesters.

Table 8. Class Duration (Master's Program)

Category	4 Semesters	6 Semesters	8 Semesters	No Limit	Total
N	97	2	3	1	103
%	(94.2%)	(1.9%)	(2.9%)	(1.0%)	(100.0%)

Among 99 doctoral programs of graduate schools, 63 graduate schools operated in 4 semesters (63.6%), and 24 graduate schools (24.2%) operated in 6 semesters. There were 6 (6.1%) that ran for 5 semesters. Like the master's program, about 64% of graduate schools operated in four semesters, and more than approximately 24% of graduate schools operated in six semesters.

Table 9. Class Duration (Doctoral Program)

Category	4 Semesters	5 Semesters	6 Semesters	8 Semesters	10 Semesters	14 Semesters	No Limit	Total
N	63	6	24	2	1	2	1	99
%	(63.6%)	(6.1%)	(24.2%)	(2.0%)	(1.0%)	(2.0%)	(1.0%)	(100.0%)

Among 63 graduate schools offering integrated master's and doctoral programs, 54 (85.7%) of graduate schools operated in 8 semesters, and 3 (4.8%) were operated in 9 semesters. Overall, about 86% of the study period for the integrated master's and doctoral program in graduate school is operated in 8 semesters.

Table 10.Class Duration (Integration Master's & Doctoral Program)

Category	7 Semesters	8 Semesters	9 Semesters	10 Semesters	14 Semesters	16 Semesters	No Limit	Total
N	1	54	3	2	1	1	1	63
%	(1.6%)	(85.7%)	(4.8%)	(3.2%)	(1.6%)	(1.6%)	(1.6%)	(100.0%)

The length of study was set at a similar level by establishment, region, and scale without any particular difference, so it was analyzed as being standardized nationwide.

3.3.4 Minimum Attendance Criteria For Granting Credit

In terms of the minimum attendance standards that can grant credits in graduate schools, 48 graduate schools (45.7%) required a minimum attendance of two-thirds, 46 schools (45.5%) required a minimum attendance of three-fourths or higher, and 3 graduate schools (3%) required four-fifths of the total attendance to be granted credit. Overall, most graduate schools have established minimum attendance standards for granting credits, and the minimum of 2/3 and 3/4 attendance are similar. By establishment, private universities had the highest score of '2/3 or higher' with 52.7%, while national universities had the highest with '3/4 or higher' at 59.3%. By region, the application rate of '2/3 or more' of graduate schools located in the metropolitan area was the highest at 60%. By size, the application rate of '2/3 or higher' of small and medium-sized universities with the number of enrolled students '500~1,000' was the highest at 66.7%, and '3/4 or higher' of the medium and large universities' with '1,000~2,000'. The application rate of '3/4 or higher' was the highest at 72.2%. Therefore, small and medium-sized private university graduate schools located in the metropolitan area tend to be more lenient in the application of the minimum attendance standard.

Table 11. Minimum Attendance Criteria for Granting Credit

Category	Minimum ⅔	Minimum ¾	Minimum ⅘	Other	Total
N	48	46	3	4	101
%	(47.5%)	(45.5%)	(3.0%)	(4.0%)	(100.0%)

Note: In other cases, it is possible to design different attendance standards for each course, or when attending more than 11 weeks out of 15 weeks, etc.

3.2.5 Grade Evaluation Method

Among the 95 graduate schools, 72 (75.8%) graduate schools implemented absolute evaluation, 16 (16.8%) graduate schools were mixed with absolute and relative evaluation, and 3 graduate schools graded using relative evaluation (3.2%). Overall, the grading method for graduate school was based on the absolute evaluation method. By establishment, the rate of implementing absolute evaluation for private universities was 81.2%, higher than 61.5% of national universities. By size, the rate of applying absolute evaluation was the lowest at large universities with '2,000 or more' students at 54.5%, and it was also found to be low at universities with '1,000~2,000' students at a rate of 62.5%. Therefore, it can be seen that graduate schools of large-scale, national universities apply relative evaluation for grading.

Table 12. Grade Evaluation Method

Category	Absolute Evaluation	Relative Evaluation	Absolute + Relative Evaluation	Other	Total
N	72	3	16	4	95
%	(75.8%)	(3.2%)	(16.8%)	(4.2%)	(100.0%)

Note: Absolute evaluation + relative evaluation reflects the characteristics of the subject during grade evaluation and uses both absolute and relative evaluation. In other cases, it is left to the discretion of the professor, when it is evaluated by P/NP, or when the regulations are not clear.

3.4 Curriculum, Teaching And Learning

3.4.1 Thesis Guidance Credits

On giving credit for thesis guidance for master's programs, of the 103 graduate schools, 39 graduate schools (37.9%) do not give credits for the thesis guidance for graduate school master's courses, and 22 (21.4%) graduate schools grant 3 credits, 16 (16.6%) graduate schools awarded 2 credits, and15 (14.6%) graduate schools awarded 1 credit. There were significant differences between graduate schools in granting credits for thesis guidance for master's programs.

Table 13. Thesis Guidance Credits (Master's Program)

Category	1Credit	2Credits	3 Credits	4 Credits	6 Credits	None	Total
N	15	16	22	2	9	39	103
%	(14.6%)	(15.5%)	(21.4%)	(1.9%)	(8.7%)	(37.9%)	(100.0%)

Of the 99 graduate schools, 39 (39.4%) credits are not granted for the thesis guidance of the graduate school doctoral program. There were 17 (17.2%) graduate schools that awarded 3 credits, 14 (14.1%) graduate schools that awarded 6, 12 (12.1%) graduate schools granting 2 credits, and 10 graduate schools (10.1%) granting 1 credit. There were many differences between graduate schools in granting credits for doctoral thesis guidance.

Table 14. Thesis Guidance Credits (Doctoral Program)

Category	1Credit	2Credits	3 Credits	4 Credits	6 Credits	None	Total
N	10	12	17	7	14	39	99
%	(10.1%)	(12.1%)	(17.2%)	(7.1%)	(14.1%)	(39.4%)	(100.0%)

Out of 57 graduate schools, 19 (33.3%) graduate schools did not grant any credits for thesis guidance for the integrated master's and doctoral programs, there were 11 (19.3%) graduate schools each that granted 3 and 6 credits. There were 6 graduate schools (10.5%) gave 2 credits. There were many differences between graduate schools in granting credits for thesis guidance in the integrated master's and doctoral programs.

Table 15. Thesis guidance credits (Master's PhD)

Category	1Credit	2Credits	3 Credits	4 Credits	6 Credits	9Credits	None	Total
N	4	6	11	4	11	2	19	57
%	(7.0%)	(10.5%)	(19.3%)	(7.0%)	(19.3%)	(3.5%)	(33.3%)	(100.0%)

Overall, the ratio of thesis guidance not recognized as credits was over one third, and in the case of credit recognition, the ratio of graduate schools acknowledging 2-3 credits was over one third.

3.4.2 Recognition Of Extra Credits

Among the master's programs at 45 graduate schools, 20 (44.4%) recognized the extra credits while 25 (55.6%) did not accept them. Out of the doctoral programs at 99 graduate schools, 43 (43.4%) recognized extra credits in the doctoral program, and 56 (56.6%) graduate schools did not accept them. Out of 34 graduate schools, 14 (41.2%) recognized extra credits in the integrated master's and doctoral program, and 20 (58.8%) did not accept them.

Table 16. Recognition of Extra Credits (Master's Course)

Category	Credits Accepted	Credits Not Accepted	Total
Master's Program	20 (44.4%)	25 (55.6%)	45 (100.0%)
Doctoral Program	43 (43.4%)	56 (56.6%)	99 (100.0%)
Integrated Master's & Doctoral Program	14 (41.2%)	20 (58.8%)	34 (100.0%)

Note: In general, credits exceeded in the master's program are recognized by the doctoral program. Therefore, only 45 graduate schools out of 106 graduate schools responded to this item.

3.5 Degree Conferment System

3.5.1 Graduate Thesis Submission Requirements: Graduation Exam

Among 105 graduate schools for the master's program, 97 (92.4%) graduate schools require a graduation exam, and most graduate schools operate mandatory graduation exams. Among the 100 graduate schools for the doctoral program, 95 (95.0%) graduate schools require a graduation exam, and most graduate schools operate the graduation exam. Among 58 graduate schools offering the integrated master's and doctorate courses, most of them require a graduation examination at 55 (94.8%).

Table 17. Graduate Thesis Submission Requirements: Graduation Exam

Category	Mandatory	Optional	Total
Graduate Thesis Submission Requirements: Graduation Exam (Master's Program)	97 (92.4%)	8 (7.6%)	105 (100.0%)
Graduate Thesis Submission Requirements: Graduation Exam (Doctoral Program)	95 (95.0%)	5 (5.0%)	100 (100.0%)
Graduate Thesis Submission Requirements: Graduation Exam (Integrated Master's Doctoral Program)	55 (94.8%)	4 (6.9%)	58 (100.0%)

3.5.2 Requirements For Graduate Thesis Submission: Dissertation Presentation

Of the 89 graduate schools, 10 (11.2%) graduate schools require a dissertation presentation in advance to submit the thesis for the master's degree, and the majority of graduate schools ,79 (88.8%) do not require a dissertation presentation in order to submit one's graduate thesis. Among the 10 graduate schools that require prior dissertation presentation in order to submit the graduate thesis in the master's program, 5 of them require the thesis to be published in registered academic journals.

Of the 93 graduate schools, 54 (58.1%) graduate schools require the thesis presentation in order to submit the graduate thesis for the doctoral degree, and there are 39 graduate schools (41.9%) where it is not compulsory. More than half of the graduate schools require prior thesis presentation for doctoral programs. Among the 54 graduate schools that require prior dissertation presentation in order to submit the graduate thesis in the doctoral program, 37 require the thesis to be published in registered academic journals (candidate).

Of the 55 graduate schools offering integrated master's and doctoral programs, 30 (54.5%) graduate schools require a thesis presentation in advance to submit the thesis, and 25 (45.5%) graduate schools that are not compulsory; the majority of graduate schools require a thesis presentation prior to submitting one's dissertation. In the integrated master's and

doctoral course, 24 of the 30 graduate schools that require prior thesis presentations are required to publish thesis in academic journals with academic journal registration (candidate) or higher.

Table 18. Graduate Thesis Submission Requirements: Publication In Academic Journals (Master's Course)

Category	Required: Published in Academic Journals (Tentative)	Required: Published in any Academic Journals Permitted	Optional	Total
Graduate Thesis Submission Requirement: Thesis Presentation (Master's Program)	5 (5.6%)	5 (5.6%)	79 (88.8%)	89 (100.0%)
Graduate Thesis Submission Requirement: Thesis Presentation (Doctoral Program)	37 (39.8%)	17 (18.3%)	39 (41.9%)	93 (100.0%)
Graduate Thesis Submission Requirement: Thesis Presentation (Integrated Master's & Doctoral Program)	24 (43.6%)	6 (10.9%)	25 (45.5%)	55 (100.0%)

3.5.3 Thesis Assessment method (Humanities)

For master's programs, among 105 graduate schools in the humanities field, 47 (44.8%) graduate schools publish their thesis proposals publicly, and it was found that at 58 (55.2%) graduate schools, the majority do not publish thesis proposals publicly.

Themajority of doctoral humanities programs publicly publish thesis proposals. Among the 92 graduate schools with doctoral humanities programs, 50 (54.3%) graduate schools publish their thesis proposals publicly, whereas 42 (45.7%) graduate schools do not publish publicly.

For the integrated master's and doctoral programs, among 42 graduate schools in the humanities field, 26 (61.9%) graduate schools openly publish thesis and 16 (38.1%) graduate schools that do not publish publicly. The majority of integrated master's and doctoral programs at graduate schools publicly publish thesis proposals.

Table 19. Presentation Of Thesis Proposal

Category	Public Announcement	No Public Announcement	Total
Thesis Proposal Announcement (Master's Program)	47 (44.8%)	58 (55.2%)	105 (100.0%)
Thesis Proposal Announcement (Doctoral Program)	50 (54.3%)	42 (45.7%)	92 (100.0%)
Thesis Proposal Announcement (Integrated Master's & Doctoral Program)	26 (61.9%)	16 (38.1%)	42 (100.0%)

Three thesis committee members are required for all master's programs in all graduate schools. For 13 (12.6%) of the 103 graduate schools, an external committee member is required for thesis review for master's courses, but external committee members are not required at 90 (87.4%) graduate schools. Most graduate schools consist of internal judges for the master's program. All 13 graduate schools which require external committee members for the master's thesis review appoint one person.

All graduate schools require 5 doctoral dissertation committee members, and 53 (58.2%) out of 91 graduate schools require external members, and 38 (41.8%) schools do not require an external committee member. For the 53 graduate schools where external review members are required for doctoral dissertation screening, most of schools appoint two members (36), followed by one (16). The total number of thesis committee members for the integrated master's and doctoral program at all graduate schools is five. Out of 42 graduate schools, 23 (52.4%) require external committee members for thesis screening in the integrated master's and doctoral course, and 20 (47.6%) schools where an external committee member is not required. Of the 23 graduate schools where external review members are required for thesis evaluation in the integrated master's and doctoral program, there are 13 schools that appoint 2 external members, and 8 schools where one external member is appointed.

Table 20. Number of External Thesis Committee Members

Category	1Member	2 Members	3 Members	Not Mandatory	Total
No. of External Thesis Committee Members (Master's Program)	13 (12.6%)	-	-	90 (87.4%)	103 (100.0%)

No. of External Thesis Committee Members (Doctorate Program)	16 (17.6%)	36 (39.6%)	1 (1.1%)	38 (41.8%)	91 (100.0%)
No. of External Thesis Committee Members (Integrated Master's & Doctorate)	8 (19.0%)	13 (31.0%)	1 (2.4%)	20 (47.6%)	42 (100.0%)

3.5.4 Public Presentation Of Thesis

The master's thesis is publicly presented in 78 (75.0%) graduate schools out of a total of 104, and 26 (25.0%) schools do not publicy present them. Among the 91 graduate schools, 80 (87.9%) schools present the doctoral dissertations publicly, showing that most graduate schools publicly present doctoral dissertations. Among the 42 graduate schools, most of the graduate schools present theses publicly; 37 (88.1%) of thesis for the integrated master's and doctoral program are publicly presented.

Table 21. Public Presentation Of Thesis (Master's Course)

Category	Public Presentation	No Public Presentation	Total
Public Presentation of Thesis (Master's Program)	78 (75.0%)	26 (25.0%)	104 (100.0%)
Public Presentation of Thesis (Doctorate Program)	80 (87.9%)	11 (12.1%)	91 (100.0%)
Public Presentation of Thesis (Integrated Master's & Doctorate Program)	37 (88.1%)	5 (11.9%)	42 (100.0%)

3.5.5 Thesis Plagiarism Evaluation

For master's degree thesis, 68 (65.4%) out of 104 graduate schools are required to check for plagiarism, and it is not mandatory for 36 (34.6%) graduate schools. Overall, two-thirds of the graduate schools require evaluations for plagiarism of master's thesis. In the case of doctoral programs, plagiarism checks for 60 out of 91 graduate schools (65.9%) are mandated, and it is not mandatory for 31 (34.1%) schools. Overall, two-thirds of graduate schools require to check for plagiarism of doctoral dissertations. In the case of integrated master's and doctoral programs, 29 out of 42 graduate schools (69.0%) are obligated to check for plagiarism in theses, and for the remaining 13 (31.0%) schools, it is not mandatory. Overall, two-thirds of graduate schools makes it mandatory to check for plagiarism of the graduation thesis in the integrated master's and doctoral programs. The proportion of graduate schools requiring plagiarism evaluations on their graduation thesis is about two-thirds across master's, doctoral, and integrated master's and doctoral programs.

Table 22. Thesis Plagiarism Evaluation

Category	Mandatory	Not Mandatory	Total
Thesis Plagiarism Evaluation (Master's Program)	68 (65.4%)	36 (34.6%)	104 (100.0%)
Thesis Plagiarism Evaluation (Doctoral Program)	60 (65.9%)	31 (34.1%)	91 (100.0%)
Thesis Plagiarism Evaluation (Integrated Master's & Doctoral Thesis)	29 (69.0%)	13 (31.0%)	42 (100.0%)

3.6 Graduate School Conditions and Support System

3.6.1 Graduate School Administration Office Operation Type

Of the 105 graduate schools, 35 (33.3%) of the general graduate school administration offices exist separately, 59 (56.2%) have integrated administration offices, and without a separate administration office, and 10 cases (9.5%) the general administration includes the administration of the graduate school. The ratio of operating integrated administration offices in large universities and private universities was relatively high.

Table 23. Graduate School Administration Office Operation Type

Category	Separate Graduate School Administration Office	Integrated General Graduate School + Other Graduate School Administration Office	No Separate Graduate School Administration Office (Included in General Administration)	Total
N	35	59	10	105
%	(33.3%)	(56.2%)	(9.5%)	(100.0%)

Among the staff in charge of administrative affairs of general graduate schools, 61 (58.7%) of the 104 graduate schools have administrative staff assigned only for general graduate schoolwork, and 28 (26.9%) schools have administrators affiliated with graduate schools and have other job descriptions, 15 (14.4%) of graduate schools have administrators who belong to other departments and hold a position as a graduate administration team leader. The percentage of private universities in charge of only graduate work was 63.6%, which was higher than that of 44.4% of national universities.

Table 24. Graduate School Administrator's Operation Status

Category	Affiliated with graduate school and no concurrent employment	Affiliated with graduate school and have concurrent jobs	Belongs to other departments and serves as the graduate school team leader	Total
N	61	28	15	104
%	(58.7%)	(26.9%)	(14.4%)	(100.0%)

3.6.2 Current Status Of Human Rights And Research Ethics For Graduate Students

Among 106 graduate schools, 98 (92.5%) graduate schools enact regulations related to the human rights of graduate students. There were 49 (46.2%) graduate schools that established human rights for their students in the form of a charter, followed by 39 (36.8%) graduate schools which enacted it in the form of regulations (in the case of graduate schools established in the form of regulations, five graduate schools also enact charters). Regulations on research ethics for graduate students are enacted by 97 (91.5%) graduate schools out of 106 graduate schools, and enacted in the form of regulations for 80 graduate schools (75.5%) National universities and large universities have the highest rate of regulation.

Table 25. Status Of Enactment, Including Regulations Related To Graduate Students

Category	Regulations	Charter	Bylaws	Guidelines	None	Total
Status of enactment, including regulations related to human rights for graduate students	39 (36.8%)	49 (46.2%)	10 (9.4%)	-	8 (7.5%)	106 (100.0%)
Status of Establishment of Research Ethics Regulations for Graduate Students	80 (75.5%)	3 (2.8%)	8 (7.5%)	6 (5.7%)	9 (8.5%)	106 (100.0%)

Note: Types are in the form of regulations, charters, bylaws, and guidelines. If the same graduate school enacts multiple types at the same time, it is counted as one of the highest priority types according to the priority of the regulations, charter, bylaws, and guidelines.

4. Conclusions and Suggestions

By observing the student statistics of South Korean graduate schools, it is apparent the rate of undergraduate students entering graduate school has decreased. For the students that enter graduate school, there is the issue of a large number of students dropping out of the program (the dropout rate increased from 5.8% in 2008 to 6.2% in 2020). There is a need for new efforts and strategies to assist and support dropout graduate students to complete their degrees. The process of obtaining a degree should be carefully analyzed in order to create an environment for students to successfully complete a degree program.

The number of international students is increasing rapidly in Korean graduate schools. In order to attract top students from abroad, it is necessary to develop and invest in programs for international students nationwide. Additionally, in order to innovate and elevate graduate education to a global standard, the admissions requirements and conditions need to be strengthened.

Private universities account for approximately 70% of graduate degree programs in Korea, and they are evenly distributed across the country, providing opportunities and accessibility to graduate education. In this process, most of the regulations for major graduate school academic systems are in place. The conclusions for improving the quality of graduate schools in the future are as follows.

First, it is necessary to consider increasing the credits required for graduation in general graduate schools. Currently, the requirements are 24 master's credits and 36 doctorate credits, which are currently designated by general graduate schools in Korea and are significantly insufficient compared to countries that operate course-oriented degree programs such as the United States. First of all, it is necessary to reinforce graduation requirements by raising the level to 30 credits for the master's program, and by raising the credits for the doctoral program and by granting additional conditions (writing thesis papers, etc.).

Second, efforts are needed to manage the quality of the thesis. About 40% of universities do not require participation by external judges for doctoral dissertations, and 50% of integrated master's and doctoral programs. There were about 25% for master's degree, 12% for doctorate degree, and 12% for combined master's and doctoral degree in universities that did not publish their thesis publicly. In addition, the proportion (35%) of universities that did not require plagiarism testing for

master's and doctoral thesis was high. About 40% of universities did not require the thesis to be published in the doctoral program.

Third, it is necessary to improve the educational conditions and support systems for graduate schools. There are cases in which the regulations (charter) related to graduate school human rights are not in place (8%), or only by internal regulations (10%). There are cases in which research ethics regulations are not established (9%). 50% of universities do not have graduate student associations, and 50% of universities do not support thesis presentation for graduate students.

Fourth, compared to the importance of graduate school, there is insufficient administrative expertise and much improvement is needed. The proportion of general graduate schools that do not have separate administrative offices is 10%, and 56% of universities operate integrated administrative offices with other graduate schools. The proportion of universities with administrators that belong to graduate school without a concurrent job with the head of the administration office of the graduate school (administration team leader) is only 60% [19].

In September 2020, the South Korean Ministry of Education announced changes in academic management following the outbreak of COVID-19. From 2021, South Korean universities no longer require students to be physically present on campus for a set period of time and will allow students to acquire bachelor's and master's degrees through distance learning in joint degree programs with overseas universities. Therefore, based on the discussions on academic operation and management of graduate schools reviewed in this study, a follow-up study should be conducted by domestic graduate schools to expand joint degree programs after COVID-19 with graduate schools abroad.

REFERENCES

[1] Bo Ki Pyon. "On the relationship between stress and mental health of college students and mediating effects of social support."Asia-pacific Journal of Convergent Research Interchange3.4 (2017): 43-56.

[2] Jeong-mi Lee, Deok-ho Jang, Kyung-hee Han, Gil-jae Lee, So-hyun Lim. "The reality and development direction of education for the next generation of academics." Challenges and innovations in graduate education. Korean Educational Administration Association, 2018 Korean Educational Administration Association Fall Conference 2018.

[3] Jin-Young Lee, Kang-Hyun Park, and Bi-a Kim. "The Structural Relationship between Environmental and Educational Factors of Graduate School and Satisfaction with Graduate School." Journal of Educational Innovation Research 29.4 (2019): 265-282.

[4] Jung-mi Lee, and Gil-jae Lee. "A Study on the Factors Associated with Students' Satisfaction with Graduate Education." The Journal of Educational Administration36.2 (2018): 229-251.

[5] Kwang-TaeSong, Chung-Hyun Chung, Hee-chang Park. "Study on the Satisfaction Survey in Graduate School."Journal of the Korean Data Analysis Society13.5 (2011): 2343-2352.

[6] Ho-Jun Lee, Min-Seok Yang, Hyun-Kook Lee, Ji-Hye Jeong, Ji-Eun Yoo, Dong-Wook Jeong. "An Analysis of Return to Education of Graduate School among nations." Korean Journal of Comparative Education23.4 (2014): 161-183.

[7] Hyun-Seok Shin. "An Analysis on Graduate School Information Disclosure System and Its Alternatives for Development."The Korea educational review21.1 (2015): 139-170.

[8] Hyun-Seok Shin."Exploring a Vision and Policy Measures for Future Graduate School System.", The Korea educational review 17.1 (2011): 156-192.

[9] Hyun-Seok Shin, Eun-Ku Lee, Gyum-Hoon Kim, and Myeong-Soon Roh. "Factors That Influence Satisfaction with the Quality of Graduate Education." Journal of research in education 0.31 (2008): 49-77.

[10] Hyun-Seok Shin, Sang-Jin Ban, Seok-Yul Lee. "An Analysis of Graduate Educational System in Major Foreign Countries: Some Implications for Educational Policy."Korean Journal of Comparative Education15.2 (2005): 53-86.

[11] Kyung-Chan Min."The vision and direction of innovation for graduate school development. Challenges and innovations in graduate education."2018 Korean Educational Administration Association Fall Conference, 2018.

[12] Mi-Ran Lee, "A Study on Effects of Mentoring Education Program by Advisor onto Adaptation and Relationship of University Freshmen." Asia-pacific Journal of Convergent Research Interchange4.4 (2018): 41-52.

[13] Lixia Zhai, Seo-young Shin. "Comparison Analysis of Chinese University MOOC(Massive Open Online Course) and K-MOOC(Korea Massive Open Online Course) from the Standpoint of Learners."Asia-pacific Journal of Convergent Research Interchange5.3(2019): 101-109.

[14] Sang-Jin Ban, Hyun-Seok Shin, Seok-Yeul Lee, Eun-Ku Lee, Gyum-Hoon Kim, Byung-Jae Min. "Enhancing Quality in Graduate School." The Journal of Educational Administration22.2 (2004): 255-277.

[15] Sang-soo Kim. "A Comparative Study on the Motivation for Self-Determination of Foreign Students Studying at Korean Universities." Asia-pacific Journal of Convergent Research Interchange4.4 (2018): 21-30.

[16] Seung-Jung Kim. "Characteristics of Research and Education in Doctoral Education by Academic Discipline." The Journal of Educational Administration35.2 (2017): 227-251.

[17] Suk-yeol Lee, Young-hak Lee, Jin-cheol Jung. Analysis of the current situation and basic research for establishing an innovation plan for graduate school. Sejong: Ministry of Education, 2019.

[18] Suk-Yeol Lee, Ho-Seub Lee. "Study on the Operation Status for Academic Operation and Management for Graduate Schools in South Korea." Journal of Advanced Researches and Reports1.1 (2021): .

[19] Wang Xiaoying. "The Construction of Employment and Entrepreneurship Service System for University Students Based on Big Data". Asia-pacific Journal of Convergent Research Interchange6. 10 (2020): 203-213.