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< Report >

## Criteria for Doctoral Degree Qualification: A preliminary report

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### 博士課程の認定基準：予備的報告

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**Japanese Abstract :** 大学院教育イニシアティブセンターでは、優秀な学生の育成のために、方法論、研究の教育、教育の評価基準を改善していくことを目標としている。我々は客観的、透明性が高く、質保証された博士の学位授与の基準の開発に向けて科学的なアプローチを採っている。我々は質問紙調査、ウェブ調査、そしてインタビューを通して国内外の大学院から情報を収集している。その後、これらのデータに基づき分析をし、その結果基準を作成する。本稿において、これまでに得られた我々の知見を紹介する。

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[Key Words: Quality assurance, Doctoral degree, Qualification criteria, Scientific-based approach]

#### Abstract

At the Centre for Graduate Education Initiative (CGEI) our goals include improvement of methodologies, research instructions, and assessment criteria for graduate education in order to cultivate students of high caliber. Towards the later, we are conducting a scientific-based approach to develop a criterion for doctoral qualification that is objective, transparent and quality-assured. We are gathering relevant information from both domestic and overseas graduate institutions through questionnaire surveys, web-based research, and personal communication. After, we will carryout analyses based on having collected sufficient information, and develop the criterion accordingly. Here in, we present our preliminary findings.

#### 1 Introduction

Rigorous pursuit of quality assurance in graduate education for both master's and doctorate degree programs is crucial in fostering competitive human resources. Since its establishment, JAIST has made major contributions toward the advancement of leading-edge graduate education.

At the Center for Graduate Education Initiative, we are working for continual development and implementation of graduate education based on the experience of JAIST. Towards this end, among many activities, we are establishing methodologies and research instructions for graduate education that aid in cultivating students of high caliber. Of additional importance to our work, is the assessment criteria used for qualifying the students. We aim to develop an objective and transparent quality-assured assessment system.

Recognition of the importance of obtaining such information is reflected in the amount of effort being invested in Europe and other countries. For example, the EAU and the Coimbra Group's Task Force for Doctoral Studies and Research are conducting a mapping of doctoral education in Europe. Thirty-seven long-established, multidisciplinary European universities constitute the Coimbra Group. With globalization of education where national and cultural borders are becoming less relevant, and student as well as faculty mobility has increased greatly, there is a need to embrace this inevitable change [1]. There is increased realization that education and creativity are more important than natural resources, and corporations/employers have themselves become globalised [2]. Employers expect faculty/graduates to have the ability to work in a flattened world [3]. One of the ways to further promote cross national and cultural border movement is by creating a unified criteria for assessing students. This would allow easy transferability of credit/qualification, and also employment. Educators will need to (i) be 'educated' to current credit/qualification systems around the globe, (ii) be creative in their research in order to engage in research issues that are global in global nature, and (iii) to collaborate actively at an international scale. The Bologna process in Europe is making mobility and cross-cultural experience possible, at a European-wide scale [4].

In order to develop a quality-assured criteria for doctoral degree qualification in JAIST, we are taking a scientific-based approach. We are gathering relevant information from both domestic and overseas graduate institutions through questionnaire surveys, web-based research, and personal communication. After, we will carryout analyses based on having collected sufficient information, and develop the criterion accordingly. Here in, we present our preliminary findings.

## **2 Methodology**

Our initial efforts utilized questionnaire surveys, as well as personal communication and interviews. So far, we have collected questionnaire surveys from 63 overseas institutions in 18 countries. We designed the survey to provide the most basic of information and fit on one A4 size page, in order not to discourage people from responding. Because of the means by which we collected the questionnaire data, we have had some duplication. The duplicate data will be interesting to examine closely in its own right. In some of the duplications, the respondents provided different responses. This may be due to differences in the qualification criteria used in different fields. We have since adapted our questionnaire surveys to allow inclusion of 'field or discipline' so that respondents can be more specific. In addition, we will start web-based research. The web-based research will go deeper and analyze issues that the questionnaire survey (A4) could not capture.

### 3 Results

Figure 1 shows the number of institutions in a given country, where we have collected data. Since most of the data was from personal communication, and questionnaires distributed at academic and education conferences, the countries may reflect where most of our current contacts are. We need to obtain information from African, Arabic, and South America institutions. There is also need to obtain more from Southern Europe, and Asian institutions.

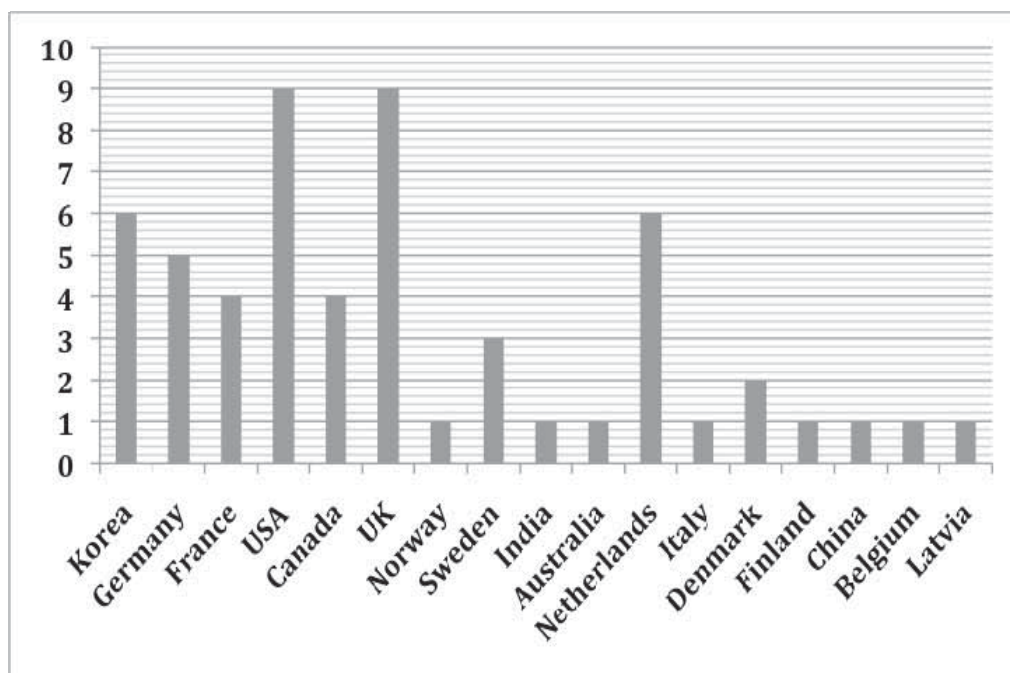


Figure 1. Countries, and number of institutions surveyed per given country.

One of the fundamental issues we wanted to understand was what type of doctoral education programme(s) is pursued. In JAIST, we have research activities, but also place importance on teaching of students. According to our classification in the questionnaire survey, JAIST's programme is research and taught based (both). This is different from the tradition graduate education system in Japan, which mainly concentrate on research. According to our classification, the traditional Japanese graduate education system is mainly research-based. Figure 2 shows the type of doctoral education programme conducted in overseas institutions. Interestingly, a surprisingly large number of institutions follow a similar system to JAIST. This may indeed be the case. It may also be that the questionnaire did not allow a 'clear' distinction between mainly research-based, and both research-based and taught. For example, what are the number of courses or credits a student is supposed to successfully complete (in addition to a research-based thesis) before she/he is allowed to graduate? Some of the institutions have one subject, while others have four subjects. Do both fall under the same doctoral programme classification or not? These issues may become clearer once we have collected more data.

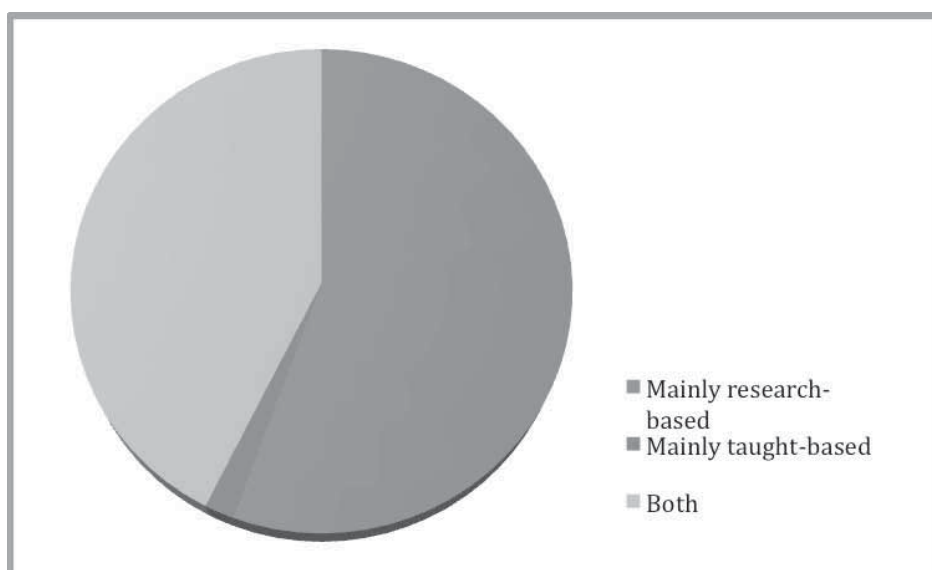


Figure 2. Type of graduate (doctoral) education programme conducted in 62 institutions located in 17 different countries.

We also surveyed final examination(s) that doctoral students take before qualification. In an overwhelming number of institutions (75%), students have to take oral exams. In ~ 5% of the institutions, students have to take both oral and written exams (Fig. 3). Those that take oral exams do so as an open or closed session. There is a slightly higher percentage of open doctoral defences than closed ones (Fig. 3 inset).

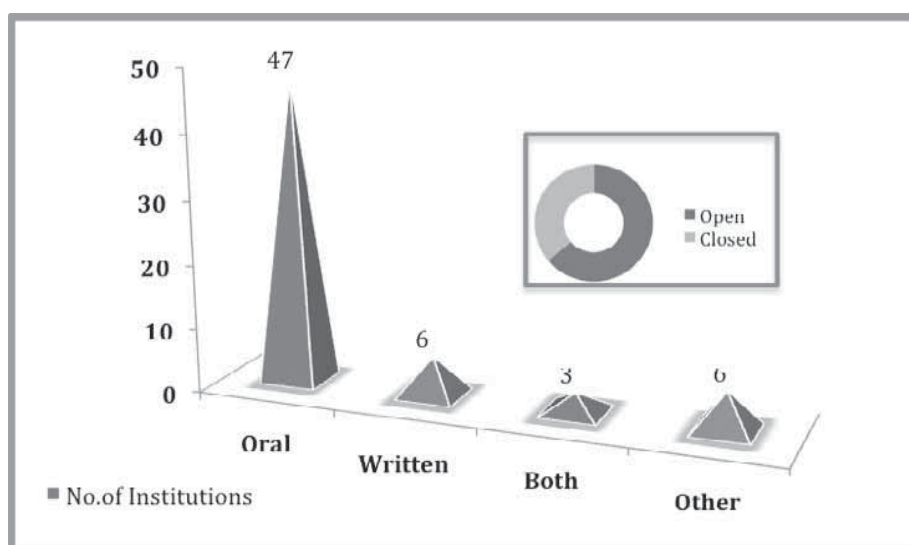


Figure 3. Method for examining the final doctoral degree. The data was collected from 62 institutions located in 17 different countries. The oral examination is carried out either as an open or a closed session (inset).

#### **4 Concluding Remarks**

Our initial efforts show a diversity in the doctoral education programs carried out in institutions around the world. The results also show that most institutions conduct the final doctoral examination orally. We have noted a variety of other requirements that students must attain before qualifying for a doctorate. These include English qualifications, and a variety of interim exams. Our continual effort will now include web-based research. We hope that some of the issues that could not be obtained using questionnaire surveys, for example, \_the difference in qualification criteria depending on discipline\_ will be better understood using web-based research, personal communication, and perhaps a fine-tuned follow-up questionnaire survey. After the research and subsequent analyses, we will propose an evidence-based criteria for doctoral degree qualification for JAIST. Our proposal will also reflect, in addition, on-going efforts around the world. These activities include the mapping of doctoral degree programmes in Europe and USA, and the credit transfer systems in Europe and other regions. Our aim is to lead the way forward in advancing graduate education, globally.

The activities that we undertake at CGEI, specific to establishing a quality-assured criteria for doctoral degree qualification at JAIST, also hold the potential to contribute at a global level. We hope to have the findings reported in an international journal or at an international conference.

#### **5 Acknowledgements**

I gratefully acknowledge CGEI Research Assistant Professor Tomohiro Nabeta for his valuable comments during formulation of the questionnaire survey, and Unit Leaders and research staff at CGEI for distributing and collecting the questionnaires during their business trips.

#### **6 References**

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- [3] T.L. Freidman (2005) “The World Is Flat: A Brief History of the Twenty-first Century”. Farrar, Straus and Giroux, NY.
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# Criteria for Doctoral Degree Qualification

*This questionnaire will be used for research only, at the Center for Graduate Education Initiative. Our aim is to obtain information on the criteria used for doctoral degree qualification, worldwide. You DO NOT have to write your name. The information we are asking pertains to the Institution to which you currently belong, NOT where you obtained your Doctoral degree.*

*We are very grateful for your cooperation.*

## 1. Name of Institution, and country where you currently work

.....

## 2. Which of the following best describes your current position

- Professor/Lecturer
- Postdoctoral Researcher
- Researcher
- Ph D Student
- Other. Please specify (.....)

## 3. Which of the following best describes the doctoral program at your current institution

- principally taught-based
- principally research-based
- both taught and research-based

## 4. Which of the following are needed (- as a part of -) in order to obtain a doctorate

- Credits obtained in taught courses.
  - How many taught courses? Please circle (1, 2, 3, 4, 5, > 5?)
- Small to medium-sized project(s).
  - How many projects? Please circle (1, 2, 3, > 3)
- Dissertation / Thesis.
- Final examination.
  - How is it conducted? Please circle ( Oral, Written ).
  - If Oral, is it open or closed to the public? Please circle ( Open, Closed )
  - How many members make up the Examination Board? ( 1, 2, 3, 4, > 4 )
  - What is the Examining Board composed of ( internal, external, internal & external ).
- Number of publications in International journals (1, 2, 3, 4, 5, > 5?)
- Are there other examinations that one has to pass.. e.g.
  - Foreign language(s). Please specify (.....)
  - Other. Please specify (.....)

## 5. Any other information

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.....

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