

The Value of the Ph.D. in the Nested Contexts of Japanese Society: From the perspectives of doctoral students

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Abstract. As in other Confucian societies in Northeast Asia, higher education has long been respected and valued in Japan, and Ph.D. holders are regarded as critical for their economic and social contributions. However, despite tremendous efforts by the government to expand doctoral education, the enrollment rate in Japanese Ph.D. programs has steadily decreased since the early 2000s. Further, Ph.D. education in Japan has remained relatively under-researched, and few studies have focused on students' perceptions of their doctoral programs. This interview-based study thus drew on McAlpine and Norton's (2006) nested contexts framework to examine how fifteen Japanese doctoral students perceived the value of the Ph.D., and how these perceptions were related to the micro, meso, and macro contexts in which they were situated. The results suggested that most participants valued the Ph.D. as a qualification for career progression and believed the Ph.D. had little worth beyond academia, a perception bound up with the unique Japanese Ph.D. selection and employment systems, as well as limited access to financial support and structured curricula, which presents challenges particularly for part-time students who account for a large proportion of doctoral students in Japan.

Keywords: doctoral education, Ph.D., social value, curriculum, financial support, higher education system

Introduction

Japan has long expressed concern over the state of its universities and scientific output. Since the early 2000s, the nation has enacted several initiatives aimed at bolstering its academic community. For example, the Global 30 and Top Global University projects aimed to garner support for Japanese universities leading the sector in internationalization and research (Ministry of Education, Culture,

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Sports, Science and Technology [MEXT], n.d.). These efforts reflect global trends toward internationalization and the emergence of the so-called knowledge economy, in which research and knowledge production are framed as central to economic productivity (Foray, 2006). However, while Japan was once a frontrunner in research and innovation, its research output, measured primarily in journal article publication, has stagnated over the last two decades (Philips, 2017). At the same time, the position of Japanese universities has begun to fall within university league tables (Nature, 2023; Tran, 2023), which, while problematic for a number of reasons (Proulx, 2009; Usher & Medow, 2009), are widely used as indicators of success.

Doctoral education is closely tied to academic and research productivity. Ph.D. researchers are the next generation of academics and bring both funds and innovation to universities. Yet, the number of Ph.D. students enrolled in Japanese universities has steadily decreased since 2003 (MEXT, n.d.). One possible reason for this is the growing competition for academic employment and the pervasiveness of precarious contracts at Japanese universities (Huang, 2024); approximately half of the Ph.D. holders in Japan end up in precarious contracts or non-academic positions following graduation (Kawamura & Hoshino, 2022).

The phenomena of growing competition and precarity in academia, and a rising number of Ph.D. graduates working in other sectors, are not unique to Japan (Boosten et al., 2014; Etmanski, 2019; Organization for Economic Cooperation and Development [OECD], 2021), and concerns about doctoral employment and the shifting purpose(s) of the Ph.D. have been widely embedded in the wider policy discourse (OECD, 2021). Yet, unlike Japan, other countries continue to see high or even growing numbers of domestic and international Ph.D. researchers (Okahana & Zhou, 2018). To further complicate the picture, while Japanese doctoral students are increasingly interested in careers beyond academia, with a higher percentage of those in engineering and social sciences finding work in the private sector compared with other disciplines (Horta et al., 2024), evidence suggests doctoral employment rates outside of the academy are lower than for master's degree holders in Japan (MEXT, 2016). Research suggests that this is linked to the quality of doctoral training (Arimoto, 2015), and a belief in Japanese industry that it is better to hire and train undergraduates (Hoshino, 2023).

This context led to this study's aims to explore how doctoral students in Japan perceive the value of the Ph.D. and the structural factors that have influenced their perceptions and experiences. This paper begins with a brief discussion of the social value of the doctorate and the context within which the Japanese Ph.D. is embedded, followed by a review of the relevant literature in which this study is situated.

The Ph.D. in Japan

Historical underpinnings

The doctoral education system in Japan developed as a hybrid of the German and American models of higher education (Arimoto, 2018). In the late 19th century, the modern Japanese higher education system in Japan was established based on the structure of German research universities, while the American model of higher education and the Ph.D. were introduced following the Second World War. However, despite changes influenced by the U.S. system, Japan's former imperial universities, as top research national universities meant to provide doctoral education in Japan, continued to retain the traditional chair system in which three hierarchical faculty positions (1 full-Professor, 1 Associate Professor, and 1-3 Assistant Professors (assistants) each constitute a chair, and chairholders (full-Professors) have centralized power over research and teaching (Amano, 2006; Yonezawa, 2007). As a result of these influences, today there are two types of doctorates in Japan (Huang, 2020): *katei* and *ronbun* doctorates. The *katei* doctorate is based on the American Ph.D. and includes required credits/courses, the dissertation, and an oral examination (defense of doctoral dissertation). In contrast, the *ronbun* doctorate grows from the German model, in which students receive a doctoral degree by submitting a dissertation without coursework.

Today, *ronbun* doctors are more common in the humanities and social sciences (HSS) than in science, technology, engineering, math, and medicine (STEMM) fields. This is because, prior to the 1990s, there were clear requirements and expected qualifications for doctoral students and professors in natural sciences and engineering, while formal requirements were variable and less clear in the humanities and social sciences (Ushioji, 1993). Further, writing a dissertation was traditionally not a requirement for professors or researchers in HSS areas (Ushioji, 1993). Thus, some senior scholars who became professors prior to the widespread practice of requiring a Ph.D. for academic employment, still want to obtain the degree by only submitting a dissertation. Although the *ronbun* doctorate still exists, *katei* doctorates are becoming increasingly mainstream in Japan in an effort to align with the international Ph.D. environment (Huang, 2020). Today, doctoral programs are mainly located in imperial universities and other top-ranked national and private universities, while small-scale private universities tend to focus on education at the undergraduate level.

Current trends in the Ph.D.

According to MEXT's School Basic Survey (e-Stat), the number of doctoral students entering each year in Japan grew from 902 in 1955 to 18,232 in 2003, before dropping to 14,382 in 2021. Following the peak in 2003, the number of newcomers to doctoral degree programs decreased every fiscal year. At the same time, the birth rate in Japan has also decreased since the 1980s, leading to an overall decrease in higher education enrollment by domestic students (Yonezawa, 2020). The decline in doctoral students may be further influenced by the characteristic of Ph.D. programs in Japan, which focus on training academic researchers and preparing students for academic careers (Shibayama & Kobayashi, 2017). Moreover, since the student aid programs in Japan mainly focus on loan instead of scholarship

(Maruyama, 2010), one third of the doctoral graduates have debt during doctoral education and 17.4 % of them have the accumulated debt exceed more than 3 million yen (Kawamura & Hoshino, 2022).

According to MEXT (2022), the largest number of doctoral students are enrolled in medical and health sciences (29,233; 38.8%), followed by engineering (13,706; 18.2%), social sciences (5,162; 6.9%), humanities (5,026; 6.7%), and natural sciences (4,738; 6.35%), etc. That the applied disciplines are most popular reflects a trend that has persisted since the late 1980s (Ushiogi, 1993), and reflects the fact that the Japanese government and universities tend to offer more funding support to engineering and the sciences than the humanities and social science. Further, while Japanese doctoral programs traditionally focused on preparation for academia alone and tended not to engage with industry and other sectors of society (Yamamoto, 2007), recent government policy has reflected an emphasis on university-industry collaboration (Lem, 2021), and enacted several programs to encourage Ph.D. holders to pursue careers in industry or create start-ups (Nature Index, 2018)—although the percentage of Ph.D. holders in industry in Japan has remained relatively low at 14% (compared with 40.2% in the United States (Hoshino, 2023)).

Another important characteristic of doctoral students in Japanese universities is the increasing number of *shakaijin* who are working while pursuing their doctoral degrees. These students are studying part-time and have limited time to take courses during the day and meet in person. According to the Fourth Report of Japan Doctoral Human Resource Profiling in 2018 cohort by the National Institute of Science and Technology Policy (NISTEP), 58.7% of doctoral students in Japanese universities work while pursuing their doctoral studies, and 35% quit work, or stop working temporarily (Kawamura & Hoshino, 2022).

Although a limited number of studies have focused on Japanese doctoral students' experiences and perspectives, previous studies discussed the challenges of doctoral education in Japan by providing an overview of the historical development and public figures of doctoral education in Japanese universities. Arimoto (2018) and Huang (2020) pointed out that improving doctoral education quality and stagnating doctoral student enrollment expansion are challenging issues in Japanese higher education. Also, the research-oriented culture overshadows teaching and learning during the Ph.D. programs, while the narrow scope of Ph.D. research interests makes graduates less attractive to industry (Kimura, 2011). Thus, this study aimed to unpack the perspectives of doctoral students in Japan in relation to the larger contexts that shape their experiences of the doctorate.

In this study, we refer to Ph.D. researchers in Japan as 'Ph.D. students,' acknowledging that in the Japanese context, those enrolled in doctoral programs are positioned/viewed as students rather than employees (e.g., in German and other European contexts). Further, 'doctoral student' or 'graduate student in a doctoral program (博士課程の大学院生 [*hakushikatei no daigakuinsei*])' is the widely used term in Japan rather than 'doctoral researcher.'

Value of the Ph.D. as Understood Through Nested Contexts

The value of a Ph.D. has largely been discussed from either individual or societal perspectives, i.e., value to the degree holder as intellectually, personally, or professionally fulfilling (often in terms of employment or earnings), or value to society through economic contribution or wider public good or service. For instance, in recent years, the rhetoric around the usefulness of the doctorate beyond academia has focused on the apparent oversupply of Ph.D. graduates and dwindling permanent professorships, leading to a shift in how doctoral programs are structured in many parts of Europe and beyond (Kehm et al., 2018). The value of the Ph.D. is thus increasingly framed in terms of employment (Canolle & Vinot, 2021; Rudd, 1990), due to the growing numbers of Ph.D. holders leaving academia. The concern around employability for Ph.D. graduates has, in turn, spurred a preoccupation with skills training and transferability of skills (Mantai & Marrone, 2022; Walsh et al., 2010). The value of a Ph.D. has also been examined in terms of the skills acquired as part of a doctorate and the extent to which particular skills are transferrable to work in other contexts (Edge & Munro, 2015; Haapakorpi, 2017; Hayter & Parker, 2019). Yet, a growing body of research suggests that the value of the Ph.D. is still not well-understood in public and particularly in private sectors, especially in the fields of humanities and social sciences where there is a less obvious connection between research, technology, and industry (Benneworth et al., 2016; Boosten, et al., 2014; Bulaitis, 2017).

Notwithstanding the extent to which the Ph.D. is valued beyond the academy, prior research has suggested that the majority of doctoral graduates believe the doctorate was ‘worth it’ (Leonard et al., 2005), and Ph.D. holders find value in the doctorate in terms of career, skills, and personal development (Bryan & Guccione, 2018; Leonard et al., 2005), social relationships (Bryan & Guccione, 2018) and intellectual growth (Leonard et al., 2005). Assessments of the value of a Ph.D. are influenced by factors including time since graduation, supervision, social connections, employer valuation of the Ph.D. (Bryan & Guccione, 2018).

Other related work focused on Ph.D. students’ motivations for undertaking a Ph.D., similarly found that career opportunities, skills development, intellectual challenge/development, and self-actualization (personal development) were key reasons for pursuing doctoral work (Guerin et al., 2015; Skakni, 2018), as well as influence from family, friends, and university lecturers (Guerin et al., 2015). Once enrolled in the Ph.D. program, external factors such as supervisory relationships, quality of personal and social lives, department structures and extent of socialization into the department, and financial support are critical in shaping the doctoral student’s experience (Sverdlik et al., 2018).

To examine the value of the doctorate as perceived by Ph.D. students in the Japanese context, it is also important to understand what structural factors contribute to their perspectives. Thus, we use the concept of nested contexts (McAlpine & Norton, 2006) to frame the different overlapping/intersecting layers or levels of context influencing Ph.D. researchers’ perceptions. According to McAlpine and Norton (2006), considering the different factors that shape the experiences of actors within the Ph.D.

(e.g. students, supervisors, thesis examiners, department heads), allows for a more nuanced understanding of how and why decisions and changes happen, and the extent to which these things are influenced by different contexts. The nested contexts approach thus provides a means of framing and analyzing the key factors shaping experience. McAlpine and Norton identify three nested contexts in the framework: macro contexts (national and supra-national contexts, which may include funding policies, economic and political trends, etc.), meso contexts (the institution in which the individual is embedded), and micro context (the department and program, which includes both program structure, teaching approaches, and disciplinary conventions). Employing the nested contexts framework to explore Ph.D. value, we generated two research questions:

- (1) How do doctoral students in Japan perceive the value of their Ph.Ds.?
- (2) What are the nested contexts surrounding the Japanese Ph.D. students that they perceive the value of the Ph.D.?

Methods

This study used a qualitative interview-based approach. Semi-structured interviews with 15 participants were conducted online via Zoom (see Table 1). Each interview lasted approximately 60 minutes. Participants were recruited via a combination of purposeful, convenience, and snowball sampling; the researchers identified current Ph.D. students or recent Ph.D. graduates at Japanese universities through their networks, and in some cases, these participants suggested additional potential participants. All participants were Japanese nationals and could be in any discipline or year of the Ph.D. Ethical approval was received from the Committee of Research Ethics at the Research Institute for Higher Education at Hiroshima University.

Table 1. Interview Participants

Participant	Gender	Age	Year of Ph.D.	Discipline	University
A	Male	40s	Third year	Social science	National
B	Male	30s	Third year	Natural science	National
C	Male	20s	Third year	Medical science	Public
D	Male	20s	Fourth year	Social science	National
E	Male	20s	Second year	Social science	National
F	Female	30s	First year	Social Science	National
G	Female	40s	Fourth year	Social science	National
H	Female	20s	First year	Social science	National
I	Male	30s	Fifth year	Humanities	National
J	Female	20s	Second year	Engineering	National
K	Male	20s	Fifth year	Natural science	National
L	Male	30s	More than fifth year	Natural science	National
M	Female	30s	First year	Social science	National
N	Male	50s	First year	Social science	National
O	Male	20s	First year	Social Science	National

Interview questions were designed in accordance with the research questions and relevant literature and focused on seven main areas: motivation for pursuing a Ph.D., post-Ph.D. plans and aspirations, experience of and support within the Ph.D. program, perspective on the meaning/value of the Ph.D. on personal and societal levels, thoughts on declining numbers of Ph.D. students in Japan, and satisfaction with their Ph.D. programs. All participants were given the option of doing the interview in Japanese or English. If Japanese was chosen, an interpreter was present to facilitate the discussion, as neither researchers were fluent in Japanese. Interviews were recorded via Zoom and transcribed and translated into English by a professional translation company.

Interview data were analyzed using a combination of deductive and inductive analysis, following the iterative ‘spiral’ method described by Creswell (2013). First, deductive codes based on the research questions, interview questions, and our conceptual framework were identified and used to do an initial coding of the transcripts. Each researcher coded the full set of transcripts independently via NVivo12, and our coding was compared and discussed. We then generated additional inductive codes to further analyze the data (e.g. employment context), which were based on our readings of the transcripts and notes taken during the interviews. Subcodes for the initial deductive codes were also identified at this time—for instance, ‘career goals,’ ‘intrinsic value,’ and ‘interest in research’ under ‘value of the Ph.D.’ These inductive codes were discussed and examined in an iterative manner between both researchers over the course of several meetings and email exchanges. Once the codebook was developed, each researcher again independently coded the data. We then compared and discussed the analysis to ensure consistency in our coding, and agreed upon the key findings.

A note on positionality

Both authors are not Japanese nationals and have limited Japanese language ability, and therefore have limited insider knowledge of the subject matter. However, one author is an Associate Professor at a Japanese university with an understanding of the Japanese academic system from a supervisor/faculty point of view. Both authors are researchers in doctoral education and academic careers in various country contexts, and thus bring an international comparative perspective to this research.

Findings

The analysis resulted in two overarching categories. The first reflects participants’ perspectives on the value of the Ph.D. at internal (individual goal) and external (societal evaluation) levels, while the second explores the nested contexts that shape their perspectives: financial support, idiosyncratic features of Japanese Ph.D. programs, and the limited curriculum.

Framing of Ph.D. value

Individual goals: Qualification vs. personal development

The majority of participants ($n = 13$) described the value of the Ph.D. in relation to (mainly academic) careers, framing the Ph.D. as a required qualification for achieving their desired position: the Ph.D. as a “license for doing research” (Participant K). Within this category, participant perspectives fell within a spectrum: some viewed the Ph.D. as central to advancing both their careers and research interests, while others viewed the Ph.D. as solely a means of attaining an academic career. For instance, Participant H described the Ph.D. as merely “a transit point for making a living,” and did not find the Ph.D. valuable, alluding to the functional/instrumental purpose of the doctorate, which was not viewed as having particular personal or professional development value beyond the qualification. Similarly, Participant D responded that the value of the Ph.D. is that “it enables me to become a professor in the future ... There isn’t much other [value] than that,” while Participant F stated that the “majority of job openings require Ph.D. nowadays. If I want to work as a ... researcher in Japan, I need to have a Ph.D. Otherwise, I will be unemployed.” Likewise, Participant I explained, “If I apply [for a job] when I get the doctoral degree, I will advance to the interview stage. I feel like having a Ph.D. plays a big role in getting the license.” Thus, most of the doctoral students we interviewed focused on the Ph.D. as a required qualification (or license) for professorship, and the extent to which the doctorate was perceived as intellectually or personally valuable varied.

However, two participants also described the Ph.D. as central in supporting their self-development and lifelong goals beyond the academic qualification. For example, Participant G described the Ph.D. as facilitating a larger sense of fulfillment:

For me, the value of the doctoral course is huge. It is getting bigger and bigger. Bigger than I used to think before I entered the course, and now that I am in the 4th year of the course, as I advance the research and write the dissertation, I realize that the meaning of having a doctoral degree is not only to have the academic qualification of a Ph.D. It demonstrates what I want to aim [for] in my life ... It changes your life. (Participant G)

Similarly, Participant B described the Ph.D. as “standing on the starting line that I envisioned when I was a kid. I’ve become a researcher, and I’ve wanted to become a researcher since I was a kid.” For these participants, the value of the Ph.D. was linked to deeper personal satisfaction. While doing research is linked to career development, the ways in which these participants spoke about their research goals differed from others in that they situated research within their larger life purposes rather than in relation to career path alone.

Societal evaluation: Societally undervalued doctoral degrees

While most participants framed the value of the Ph.D. as tied to academic career progress, all fifteen responded that doctoral degrees are undervalued by the rest of Japanese society. Despite the emphasis placed on the Ph.D. degree as essential for achieving career goals, many participants expressed concern about the employment and economic value of the Ph.D. beyond the academy; thirteen participants stated that while a Ph.D. is useful in academia, it is “regarded as useless, almost useless” (Participant F) in other sectors due to employment practices and little to no financial benefits. For example, “in Japanese society, as the doctoral degree is not recognized and highly evaluated, if you cannot become a professor at a university, everybody becomes hopeless” (Participant G).

Participants noted that doctoral education is not highly valued by companies who generally prefer employees with undergraduate degrees (or in some fields, master’s degrees), who can be trained. Japanese institutions, primarily in the private sector but also the public sector, were described as “want[ing] soldiers, not an officer” (Participant A) and as having employers who “don’t value specialists” (Participant F): “[M]any companies said they would teach me when I looked for a job during my master’s study ... Many companies urge you to join them as early as possible to allow them to develop you.” (Participant K).

Several participants were especially critical of Japanese employment practices and what was described as an emphasis on “generalists”:

For me, the first problem is the Japanese hiring system. The seniority system, lifetime employment, these things don’t fit at all the present times. This belongs to the Japan of the 1970s, a time of economic growth. The car industry was growing amazingly, and everybody was doing their best at the factories with the seniority system and lifetime employment. But the world has changed completely, from the 1980s and 1990s. But Japan still has the hiring system of the Showa period, and there is nothing we can do about it... With this present way of thinking, for example, to have an academic degree, knowledge, skills, critical thinking, or writing ability has no relation at all with companies. (Participant G)

The employment context was thus critical in shaping how participants viewed the value of the doctoral degree. These perspectives appear to be furthered by the fact that there are no financial incentives, as participants reported that Ph.D. holders are not paid more than master’s degree holders. Two participants also described how the reactions of family members further reflected an emphasis on work over graduate education:

When I was in my third year [of undergrad], I said I wanted to get a master’s degree, my family complained that I still wanted to play around ... ‘Can’t you just go to work without studying?’ Still, I ignored their opinions and entered higher education ... few people in Japanese society understand what a Ph.D. does. (Participant K)

This example shows how attitudes towards higher degrees by the Japanese public may further influence how Ph.D. students perceive the value or application of their degrees within the wider employment and societal contexts.

In addition, participants believed Ph.D. degrees were particularly undervalued in HSS, as Japanese policy and industry place more emphasis on science and engineering:

A social sciences or humanities PhD degree is not really important. Because I have experienced living abroad, I know it's important in a foreign country and I'm doing international work, so this will be really helpful, especially in this international context, I hope, but in Japan, it's not. Only in academia it really is regarded as important. (Participant F)

These concerns about the employment value of the Ph.D. beyond academia, particularly for HSS degrees, may have been exacerbated by the fact that most (14 out of 15) participants planned to stay in Japan following the doctorate. Four participants (Participants A, B, C, and F) were open to working abroad for short-term positions of one year or so, but wanted to ultimately be in Japan for the long term. Reasons for staying in Japan included family commitments (Participants G & I), language (Participants N & O), and Japan-focused research areas (Participants E & H).

The nested contexts surrounding doctoral students in relation to the framing the value

Restricted financial support for domestic students

All fifteen domestic interviewees identified financial issues as critical for their doctoral studies. Funding challenges were largely reported to be the result of government or institutional policies, which participants interpreted as supporting some types of students more than others, and particularly created financial difficulties for part-time students—who account for a significant proportion of doctoral students in Japan. For example, although some governmental organizations such as the Japan Society for the Promotion of Science (JSPS), Japan Science and Technology Agency (JST), and Japan Student Services Organization (JASSO) provide financial assistance, students sometimes exhibit “financial anxiety” (Participant B), and allocated scholarships must be paid back following Ph.D. studies because, despite being called a scholarship, this type of funding is considered a loan rather than a grant, as noted by Participant J:

I got a JASSO scholarship. In my case, it was a 5-year or 3-year loan, so I borrowed the money. It's a big debt, isn't it? So, I have a big debt, and I feel like it will be difficult to pay it back. (Participant J)

Moreover, in Japan, the male is typically the primary financial provider within the household. Since married male students often balance both employment and academic responsibilities, and scholarships are primarily intended for full-time students, the "household" concept introduces further complexity for married full-time female students. Under this framework, they are ineligible for scholarships because their husbands are employed, which creates a barrier for students who have partners working full-time:

Basically, for traditional students, there are many scholarships, but for people that work, there are nearly none. ... When I was attending postgraduate school, I had been working all the time, and I had my own salary, so there was no problem at all for me. Two years ago, I quit my job, and since then, I haven't got a salary or an income. But I have my husband—it is good to be with him, [chuckles] he has a salary. But, even without having a salary, I cannot receive a scholarship. And it is not about just me, it is the Japanese concept of "household." If the income of the household is sufficient, you cannot have a scholarship. (Participant G)

According to the participants, since the scholarships focus on full-time Ph.D. students, part-time students who are working or have partners with salaries perceive that they have relatively limited opportunities for financial support from public funding such as governments or universities. Rather, Ph.D. programs are perceived as focused on supporting more traditional full-time students despite the large number of part-time doctoral students. Thus, participants reported the lack of financial support as both presenting practical challenges during the doctorate, and also exacerbating previously-mentioned concerns about post-doctoral employment.

Idiosyncratic traditions of doctoral programs in Japanese universities

Several participants described additional unique and idiosyncratic features of the Japanese Ph.D. system that influenced their overall experience and perception of the doctorate. For example, although interview participants viewed the value of the Ph.D. as a certification to enter academia rather than a means of developing personal competencies or abilities, highly-ranked and research-oriented Japanese universities tend to prefer continuity and persistence within the chair system. (Amano, 2006) Thus students who have graduated from the master's program can progress to the Ph.D. in the same chair at the same university. Although growing criticism has meant this trend has changed, the traditional pathway remains common in national research universities that evolved from imperial universities (Terasaki, 2007). Participant A referred to this hidden custom, which makes it difficult for graduate students to enter Ph.D. programs in a different chair (and different university), thereby limiting mobility:

The Ph.D. program only accepts students who have completed the master's program offered at [this] university. Actually, there are no official documents writing this, but there are many traditional Japanese national universities that [follow] such customs. (Participant A)

Additionally, Japanese universities provide fixed-term, contract-based faculty positions for graduates with master's degrees. Several interviewees (e.g., Participants A & N) mentioned that they were employed at universities during their doctoral programs. Although they could attain faculty positions without a Ph.D., they chose to become *Shakaijin Gakusei* (part-time students) in Ph.D. programs, as a Ph.D. is still needed for stable positions and traditional professorships.

After I got my master's degree, I became a professor. ... I'm hired for a project now. I'm a faculty member hired for a project, so I'm not an ordinary faculty member, but in the future, I would like to become a faculty member and teach social education and experiential learning. (Participant N)

This may also be exceptional, but actually, I experienced the Associate Professor position already until last year. Well, it's not a tenured position, it's a fixed-term position. Two years fixed-term so it finished last year, but I experienced (a tenured) faculty position already. Currently, I'm a part-time lecturer at a private university in a city. (Participant A)

Thus, as highlighted by several participants, these particular features of the Ph.D. in Japan firstly limit students' access to different doctoral programs (via the chair system), and may then perpetuate the framing of the Ph.D. as a qualification for permanent academic careers rather than as a vehicle for personal or research development, as unstable university 'faculty' positions available to master's degree holders—focused largely on administrative work—proliferate.

Program structure: Apprenticeship or limited curriculum without coursework

In Japan, doctoral programs have little coursework, focusing primarily on independent research with a supervisor, as most of the coursework takes place during master's study. Thirteen interviewees thus described their curriculum as limited, as few credits are required (almost none) during the Ph.D. As a result, "No one is really guiding that process" (Participant F). Ph.D. students tend to have more autonomy but also may face difficulties in navigating their programs. For example, there was a lack of "solid and active support" (Participant H) and a need for "self-reliance" (Participant A), and "There are probably many people who do nothing in the doctoral course in that sense because they do the training course by themselves" (Participant I).

Further, courses at the graduate level tend to be less well-organized, "conducted by professors who talked about what they liked about their own research" (Participant L), presenting a challenge for

doctoral students who did master's programs in different areas of study or who came from other chairs or universities. As Participant D points out, Ph.D. programs with a limited curriculum may not meet students' expectations:

The curriculum is not very systematic. I've received financial support, money, and an environment for research. ... (In master's and doctoral programs) there are many classes on research content and research objectives. There were few lessons I expected to have, such as research methods, and each professor chose what they liked as the topic of the lesson (Participant D)

Although the Ph.D. program is meant to facilitate independent academic development, Ph.D. students in Japanese universities have trouble navigating their careers, particularly during this transitional period in which doctoral education represents the transformation from an academic to professional orientation (Huang, 2024). In particular, it is difficult for Ph.D. students to recognize what they have learned and which competencies they have developed, complicated by the fact that the nature of their education is dependent on their supervisors. Thus, for some students, the lack of structure was a challenge, which influenced their overall view of the Ph.D. in terms of what they hoped to learn and their general expectations for support.

Yet, despite generally negative perceptions of the value of their Ph.D. degrees in Japanese society and the unstructured curriculum, most (10 of 15) participants stated that they were very satisfied with their Ph.D. programs. This satisfaction was largely due to various research achievements (e.g. publications), perceived adequate preparation for academic careers, "good colleagues" (Participant G), infrastructure to support research activities, healthy supervisor relationships, and in some cases, opportunities to collaborate with others. As one Participant I put it, "I can say that I am 100% satisfied with my doctoral program. ... After all, I got some time to research."

Discussion

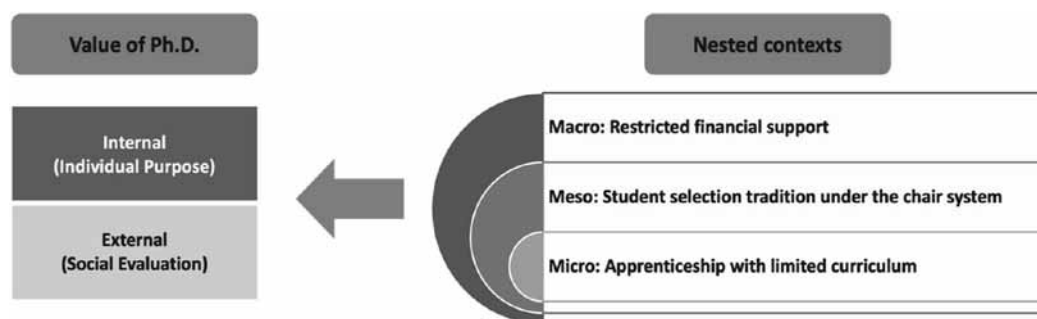
When asked to reflect upon the value of their Ph.D. degrees, most participants viewed the Ph.D. as a necessary qualification for securing academic careers, but which lacked value and was not well-understood within the larger Japanese society, a finding that is consistent with prior research in other national contexts (McAlpine et al., 2013). However, unlike much of the existing literature, the value of personal development and self-actualization through the Ph.D. did not appear as strongly in our results (cf. Guerin et al., 2015; Skakni, 2018). This may be explained in part by the Japanese Ph.D. context: while the Ph.D. has become critical for academic employability, the findings suggest participants continue to focus on academic careers despite government efforts to shift the focus to industry and innovation in other spheres (Lem, 2021; Nature Index, 2018), in line with the increasing emphasis on societal impact of research and transferrable skills (Mantai & Marrone, 2022; Walsh et al., 2010)

occurring in other countries. As a result, it may not be surprising that Ph.D. students in Japan to focus the value of the Ph.D. for academic career development.

The findings also align with work on Ph.D. value in other national contexts (Bryan & Guccione, 2018), which highlight employment as a central factor in how Ph.D. holders understand the value of the degree. Likewise, concerns about the value of humanities and low enrollment in humanities programs are consistent with trends in other countries (American Academy of Arts and Sciences, 2021; Boosten, 2014), furthered by policy discourses that favor research with clear economic impact (Benneworth et al., 2016; Bulaitis, 2017). Framing the value of the Ph.D. in economic/employment terms also reflects larger supranational trends in which the commodification of higher education and knowledge production may influence Ph.D. students' perceptions of the worth and purpose of the degree.

Despite similarities between the findings and literature from other national contexts, factors influencing participants' perceptions of Ph.D. value were tied to the specificities of the macro, meso, and micro contexts (McAlpine & Norton, 2006) surrounding Japanese employment, higher education, and Ph.D. systems. Specifically, macro-level factors were the most influential in shaping students' perspectives of Ph.D. value, while meso and micro contexts primarily shaped day-to-day experiences of the Ph.D.—and therefore, students' overall satisfaction with the program and the extent to which they found personal value in doing a Ph.D. The conceptualization of value of Ph.D. within the nested contexts in Japan is displayed in Figure 1 below.

Figure 1. Value of Ph.D. within the nested contexts in Japan



This pattern refers to larger society-wide trends that impact doctoral education and perceptions of Ph.D. value. Factors such as employment practices and few available permanent academic positions (see also Huisman et al., 2022) appeared to be most the significant contributors to the participants' largely negative view of the societal value of the Ph.D. The employment practices described by participants in which undergraduate degree holders are preferred by non-academic employers was a key factor shaping perceptions of Ph.D. value (particularly in the humanities and social sciences; Kobayashi, 2011), and may explain a focus on academic career goals over industry despite government efforts (Hoshino, 2023).

Notably, regardless of these widespread concerns about the societal value of the Ph.D., all participants identified career goals as a primary, or only, value of the doctorate, similar to findings in the study on the Taiwanese Ph.D. by Horta et al. (2024). Such macro-level factors appear embedded in both social and cultural practices (such as employment practices), but may also be influenced by national policies including budget reductions for national universities, which has led to even fewer permanent academic positions and an increase in part-time and contract-based faculty positions (Yudkevich et al., 2015) that both increase precarity and emphasize the necessity of a Ph.D. for those who wish to pursue academia long-term.

Moreover, on the macro level, concern about Ph.D. employment was further exacerbated by the scarcity of financial support due to employment status and the family registry system in Japan, leading students to question the economic return of their degrees (Arimoto, 2018). Pursuing a Ph.D. was therefore perceived as financially risky and a significant source of stress (see also Sverdlik et al., 2018). These policies funding for doctoral research may lead to reverse discrimination against domestic students, deterring some from Ph.D. study. Therefore, a well-balanced support system should be constructed to prevent alienating students.

In general, participants reported fewer meso- and micro-level factors as shaping their perspectives on Ph.D. value, consistent with the tendency to frame value in economic and employment terms. However, on the meso (institutional) level, institutional support (e.g. libraries and research facilities), was positively perceived by the participants, though the chair system, which is still maintained by the top national universities (i.e., previous imperial universities), may perpetuate a rigid and hierarchical culture and environment within institutions (and chairs), as alluded to by several participants and consistent with other literature (Altbach, 1989; Yamamoto, 2021). This institutional chair system may in turn, further deter prospective students from pursuing a doctorate in the first place, despite the top national universities being desirable in terms of resources and degree power in the academic labor market. In addition, due to the existence of *ronbun* doctorates, graduation in the Japanese doctoral education system does not necessarily mean that students have earned degrees because they can apply for Ph.D. degrees when they complete their dissertations even after graduation (Shibayama & Kobayashi, 2017). However, the partial expansion of faculty not doing teaching and research makes it possible to make undervalued Ph.D. in Japanese universities. Previously, it was possible to become a Professor without a Ph.D., but today a Ph.D. is required for permanent roles. Fixed-term Lecturer, Assistant and Associate professorships are available on a contract basis. The expansion of contract or project-based faculty positions that do not require a doctorate may also contribute to the devaluation of the Ph.D. within Japanese universities.

Finally, on the micro-level (or individual program-level), limited curriculum without coursework for doctoral education in Japanese universities was confirmed by participants. After the separation of master's and doctoral programs, Japanese doctoral education remained the traditional form of apprenticeship with an emphasis on supervision (Shibayama & Kobayashi, 2017; Yamamoto, 2007).

Therefore, experiences of Ph.D. education are highly dependent on the supervisor (as is consistent with previous literature, e.g., Sverdlik et al., 2018) and on students' ability to navigate the doctorate themselves. However, as discussed in the findings, most participants reported general satisfaction with the Ph.D. due to supervisor support and/or the research itself, implying that micro (and meso) contexts may be important in facilitating a sense of personal or intellectual value in the Ph.D.—even if satisfaction with the Ph.D. experience was not explicitly recognized as 'value' by participants themselves.

Conclusion

This study used the nested contexts framework (McAlpine & Norton, 2006) to explore Ph.D. students' perceptions of the value of the Ph.D. in Japan, and the potential macro, meso, and micro-level factors influencing their perceptions. Although two participants described the value of the Ph.D. as linked to learning for self-development and life-long goals, nearly all interview participants framed the value of the Ph.D. as career advancement, most often in instrumental terms as a qualification for academia, believing that the doctorate was not valued by wider society, in particular related to the specific structural features of the Japanese employment system which favors undergraduates and engineering and science disciplines. Their perceptions were influenced also by (a) the limited availability of financial support which is most accessible to traditional Japanese doctoral (full-time) students, (b) the traditional chair system, and (c) limited curriculum without coursework. These factors, along with other macro-level trends such as the declining birth rate, may shed light on the challenges in doctoral enrollment, and suggest the need for a shift towards changes in how the Ph.D. (and expertise) is viewed beyond academia, alongside consideration of the effects of limited financial support and Ph.D. program structure. In contrast, meso (institutional) and micro (program-level) support in terms of availability of resources, curricula, and supervision, appeared to influence the participants' overall satisfaction with the Ph.D., and may be important in supporting a sense of intrinsic or intellectual value in the doctorate.

Limitations of this study include the small number of participants, which meant we could not make distinctions between students' perceptions along disciplinary or institutional lines. Further, our lack of fluency in Japanese means that certain nuances could have been lost in translation. Future research with a larger sample purposively selected for a balance of disciplines and university types could shed light on additional structural factors that may shape student perspectives on Ph.D. value and Ph.D. experiences. A larger study could also provide a more nuanced analysis that examines variations in participant experiences and perspectives in relation to nationality, discipline, age, and university type, etc., which may lead to further insight into the macro, meso, and micro factors influencing experiences of doctoral education in Japan and the positioning of the doctorate. More systemic investigations to explore the mechanism among factors in nested contexts are needed in the next stage, and research examining the perceptions of industry (private sector) employers and/or the public would also be useful in exploring the employment and perceived societal value of a Ph.D. Finally, research on international

Ph.D. student experience could facilitate understanding of their motivations for pursuing a doctorate in Japan and whether their perceptions and experiences differ from domestic students.

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