

Graduate Student Professional Development: Identifying Core Components

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Abstract

Graduate students are “professionals” in the sense that they are required to learn and transfer academic skills beyond the walls of the classroom to research and industry contexts. As such, graduate professional development (GPD) should be an integral part of every graduate program. However, many Japanese universities do not provide official services which can put graduate students at a disadvantage. There were two central aims in this study. The first was to investigate current programs and practices that encouraged GPD; and the second was to gain a first-hand account from students, professors, and industry experts regarding GPD, especially essential skills, knowledge, and experiences that they felt would be beneficial to perform effectively in research labs and the workplace. Surveys were administered and semi-structured interviews conducted to gather this information and then identify gaps in current GPD institutional practices and learner needs. Given the demand for specific skillsets in new employees, data was further analyzed to identify core skills necessary for academia and industry-related positions. The research concludes with specific recommendations of core academic and transferable ‘real-life’ skills and knowledge for GPD training programs so that students feel fully prepared for the experiences they will face during graduate studies and beyond.

Keywords: Graduate Professional Development, Learner Development, Life-Long Learning, Training Programs

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Introduction

Professional development programs are an integral part of the workplace to maintain high standards and best practices. In these programs, employees and managers document skills, knowledge, and experiences as a means of training new workers and enhancing work practices. Professional development programs are meant to facilitate ongoing improvement of an individual's competencies. Therefore, it is suitable for any situation in which an individual is required to maintain certain professional standards. In the case of this study, the researcher felt that a Graduate Professional Development (GPD) program would be integral to developing learners personal and professional identities. Although Japanese universities are known to have advanced laboratories and high-quality graduate schools, there is a lack of professional development programs and services to prepare students for situations they will encounter during and after their studies such as presenting at field-related conferences, networking with international colleagues for collaborative ventures, or participating in internships. Simply having strong research skills is not enough in today's world to perform successfully in a multitude of settings. Indeed, graduate students require professional skills such as being an effective communicator, problem-solving, and an ability to quickly adapt to various situations.

This study had three main aims. The first aim was to provide an accurate definition of GPD, specifically for second language learners in a Japanese university context; the second was to gain a first-hand account of students' readiness for GPD, especially essential skills, knowledge, and experiences that they felt would be beneficial to perform effectively in research labs and the workplace; and the final aim was to investigate current programs and practices that encouraged GPD and to determine if there were any gaps with the current curricula. It was felt that answers to these questions could further enhance current practices at the university. This paper will examine these three aims in detail and conclude by identifying core competencies that professional development programs could provide to prepare graduate students for life beyond their labs and classrooms.

Research Aim 1: Defining Graduate Professional Development

Although GPD can be widely seen as beneficial for learner development, there is no central definition as professional situations vary widely. Thirty years ago, Ducheny et al. (1997, p. 87) summarized the research literature at the time as GPD consisting mainly of three main elements:

- a) the importance of continuing training and familiarity with relevant research;
- b) the influence of a supportive peer group or mentor; and
- c) the organization of PD into stages articulated by formative events or level of training.

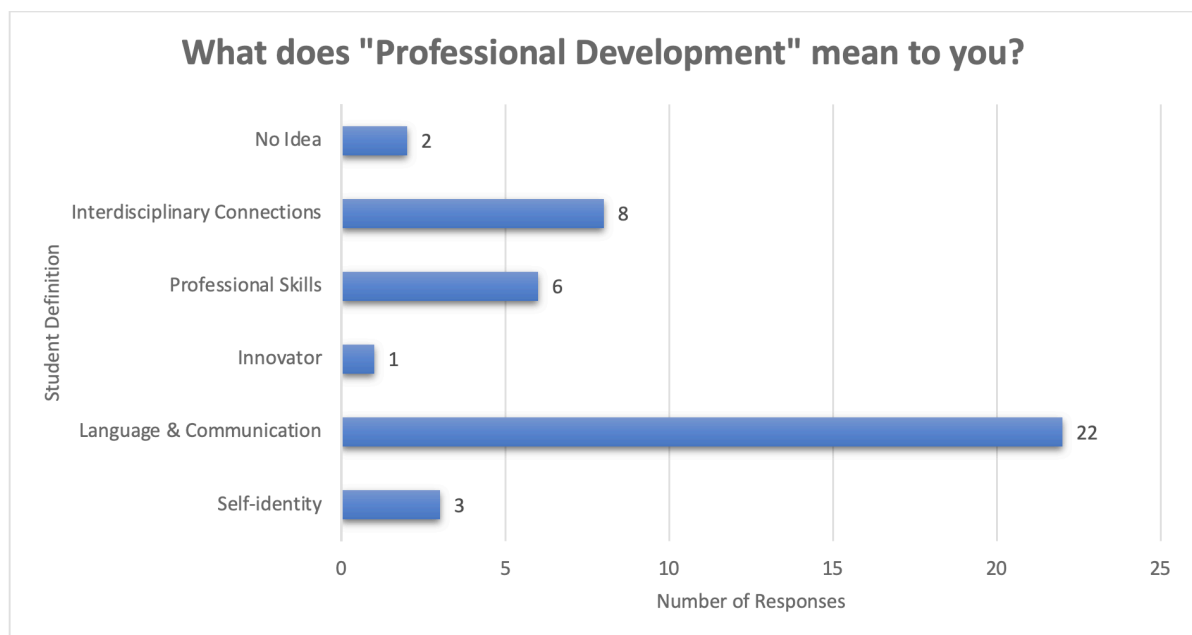
They then attempted to provide a more concrete definition: "Professional development is an ongoing process through which an individual derives a cohesive sense of professional identity by integrating the broad-based knowledge, skills, and attitudes within psychology with one's values and interests" (p.89). Over the years, the concept of GPD has been redefined and transformed to connect more closely to one's professional identity and competencies. Rose (2012) specifically refers to GPD as academic and transferable skills that can be applied to the workplace. Regarding graduate students in this study, GPD referred to learners' unique needs, current professional requirements, and future goals beyond their graduate programs. For the researcher then, defining GPD for this specific EFL context thus

became “an ongoing process of reflection on and improvement of one’s skills, competencies, and experiences for self- and professional development.”

To understand how students, professors, and industry experts perceived GPD, a survey was administered to 60 graduate and doctoral students and semi-structured interviews conducted with two professors and one industry expert. This enabled the researcher to gain a first-hand account of graduates’ real-life professional needs and requirements. The 60 students participating in this study had signed up for an intensive graduate presentation course taught during the summer holidays. 42 students completed the survey fully and data were analyzed from these student responses. Partially completed surveys were discarded. Surveys were not anonymous so that the researcher could follow up with individual students after the presentation course. Students gave consent to use their responses in this study. The professors who participated in the interview taught in science faculties and the industry expert worked in a well-known, international Japanese technology company. Results of surveys and interviews are presented below.

Students’ definition of GPD

In the survey, students were asked the open-ended question, “What does ‘professionalism’ mean to you?” Student comments were separated into six categories (Figure 1).



$n = 42$ participants

Figure 1: Response to What does “Professional Development” mean to you?

No idea: Of the 42 responses, only two students (5%) responded that they did not have a definition for GPD. These students had signed up for the presentation course to gain an understanding of academic presentation conventions to improve their conferencing skills. Attending and presenting at international conferences is typically a core part of all graduate programs in Japan, thus these students joined to learn more about how to function effectively in a conference setting.

Interdisciplinary: For eight students (19%), GPD referred to the ability to collaborate with researchers who were in different fields of study and in a variety of situations (Holaday et al.,

2007). One of the main constraints students faced at international conferences was the inability to engage with presenters and presentations that were outside of their research field (see Katz-Bassett et al., 2016).

Professional skills: Six students (14%) considered GPD as having professional skills. They defined these skills as having a mindset that would be helpful in the real world—industry and research (Dyess & Sherman, 2010), acquiring the right professional knowledge for their chosen career path, exerting leadership skills (Patterson et al., 2013), and understanding and practicing an ethical code of conduct especially in international settings.

Innovative Research: Only one student (2%) considered GPD as having the ability to create innovations for a sustainable society. As most of the students were from science-based research fields, finding innovative ways to move the field forward was a central part of research dissertation.

Language & Communication: 22 students (52%) defined GDP as the ability to convey thoughts about one's professional field (in English and their L1) both verbally and in writing. All participants were familiar with giving presentations within their laboratories as part of graduate coursework. During their graduate studies however, they would also be required to present their research to specific and general audiences at various conferences. This is also similar to graduate students in courses outside of Japan (Conn et.al., 2014). As second language learners, most students were most concerned about how to convey their message effectively in English.

Self-Identity: Three students (7%) related GPD to their professional identity (see Trede & McEwen, 2012). For these students, it meant having an enhanced sense of self-confidence in one's professional skills and a certain amount of self-discipline and responsibility to perform effectively in professional situations.

Professors' and industry expert's definition of GPD

Interviews with professors and an industry expert provided further insight and helped the researcher to concretely identify the specific knowledge, skills, and experience graduate students would require in order to become professionals in their field. Two points were regarded as most important: language competence and exposure to professionalism:

Language Competence in research settings: Professors felt that students required practical, communicative language to succeed in multicultural, multinational laboratories and conference events. One of the professors interviewed went as far as making it mandatory for students to communicate only in English while working in the labs. It was important for these students to be able to how to switch from informal to formal English at a moment's notice in order to understand which communication styles would be most effective in specific situations.

Excerpt 1: Interview with professor A

For graduate students it is important to express what is happening with data. So, they need to be able to listen to seniors actively...In our case, each group has meetings daily, sometimes three or four times to report their results, so they need to be able to communicate with collaborators. Many of our students are international so this

makes the atmosphere more natural. We always have three or four international students, so all meetings have to be conducted in English. Each week they take turns to present such as interesting journal paper related to their work or review a topic from several journal papers. Students are forced to learn. This is tremendous practice all in English, so they are ready to present at conferences.

Professionalism in the workplace: The industry expert also regarded the ability to communicate effectively in the second language as a core professional skill; however, he further emphasized the importance of “soft skills” (i.e., connected to one’s trait and interpersonal skills) especially flexibility and maintaining professionalism in a fast-paced environment.

Excerpt 2: Interview with industry expert

Employees must effectively convey meaning at a moment’s notice even if language skill is not proficient (answering an important phone call, being pulled into a sudden meeting, responding to an urgent email). Learn how to be understood. Students need to intern more and sit in on meetings for exposure. Lecture-style teaching at universities is doing students a disservice.

Responses from participants were then compared with the researcher’s initial definition of GPD to create a more accurate description of GPD for the EFL Japanese graduate student related more closely to their life beyond graduate school.

*An ongoing process of reflection on and improvement of one’s skills, competencies, and experiences for self- and professional development **to maintain relevance in today’s modern, multicultural, and multidisciplinary workplace.***

Research Aim 2: Students’ readiness for GPD

The second research aim sought to identify students’ current experiences with GPD and how prepared they felt to perform in a professional setting. Students were asked the following two questions in the survey:

- Do you feel you received sufficient training for graduate school?
- Has your graduate/doctoral program offered professional development training for your professional life?

Results for the first question (Figure 2) indicated that only 14% of the participants (6 students) felt that their undergraduate courses prepared them for graduate school. On the other hand, an overwhelming 86% (38 students) said they lacked confidence when they entered graduate school. Receiving training for graduate school is a necessary step for GPD as many of the skills required to be successful in graduate programs are similar to those needed for professional development—strong work ethics, ability to motivate oneself to complete tasks, discipline, time management, and having strong communication skills to participate effectively in meetings, seminars, and discussions with peers and supervisors.

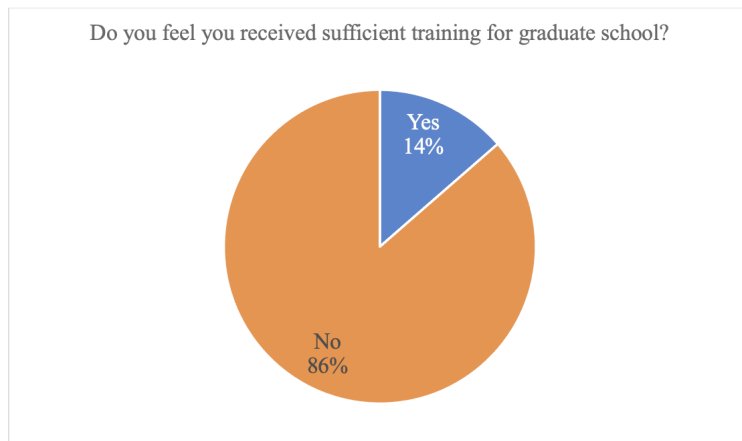


Figure 2: Training for graduate school

Excerpt 3 below illustrates a common theme among student responses.

Excerpt 3:

For the research part, I think yes. I had theoretical courses and plenty of experimental courses in a systematic way... For the language and presentation part, I would say no. I only had the English class for one year out of five years undergraduate study. I just learned English in a general way which is not enough for graduate school. And there were some classes request to do a presentation, but teachers would not tell you how to do it or what is a good presentation looks like, they only sent the requests. What I could do was observing how other people present, so for sure I was not well prepared to give presentation especially in international contexts.

Results for the second question (Figure 3) was markedly different. Of the 42 students who responded, 38% (16 students) felt that their graduate program was helping them to become professionals. However, there were still 62% (26 students) who felt that they required more training. As GPD is a core concept in graduate courses at the university, this result was somewhat disappointing.



Figure 3: Training for professional life

The following excerpts are examples of student responses which demonstrate satisfaction with their graduate program (Excerpt 4) and those that felt their course could be improved (Excerpt 5).

Excerpt 4:

I do not believe that we are given career assistance throughout graduate school. There have not been many professional research conducting opportunities and there are not many international networking events conducted here.

Excerpt 5:

Yes, I think so. Since I started the master's course, I think I improved a lot.... I have my own project now, so I learned how to manage a research project in a professional way from my supervisor and seniors. And our lab is an international lab, most of the lab members are from abroad, it helped me a lot at giving presentations and networking during the weekly seminar. Also, I took a class called Medical English last year, I learned many useful presentation skills from this class.

What the researcher gleaned from these results was the necessity to identify which laboratories offered support and those that students felt unsatisfied with. It was felt that this could encourage knowledge sharing practices across departments and improve GPD in the wider community of practice.

Survey results thus helped the researcher to get a first-hand account of learner experiences and begin to create a taxonomy of core competencies and recommendations for GPD training programs. These will be discussed in the conclusion. The next section looks at research gaps which emerged through data analysis.

Research Aim 3: GPD knowledge gap

The final research aim sought to identify gaps between curricula (undergraduate and graduate) and current GPD practices, requirements, and expectations for academia and industry-related positions. It seemed clear to the researcher that closing the knowledge gap (Guskey, 2009) would help to create a solid starting point on which to build a framework for GPD. The two main categories that emerged from data analysis were language proficiency for research contexts and professional skills for the workplace.

Skills for Research Contexts

The language skills both professors and students ranked in order of importance were:

1. Listening
2. Speaking
3. Reading
4. Writing

Active listening was weighted the highest as students needed to learn about research procedures and various up-to-date research topics within the research field from seniors and peers during research presentations. The second was having sufficient communication skills in both formal and informal situations so that students could become natural interlocutors.

Both students and professors regarded “functional” language skills as most important during presentations to effectively articulate research findings as well as confidently switch to networking when required. Reading and writing, although essential for GDP, were considered less important as students could use a translator as a support for self-directed learning.

Having strong research skills was essential to convey meaning (e.g., content knowledge, data collection and analysis) in a comprehensible way. Without deep knowledge of their research content, it did not matter how proficient students were in their language skills. Again, both students and professors agreed on this component of GDP which reinforced the importance of listening and speaking proficiency for research contexts.

Gap between curricula and research context

The gap with the undergraduate curriculum and GDP practices in some laboratories was quite evident from the points raised above. First of all, freshman English courses focused mostly on acquiring academic vocabulary, reading, and producing essays, with little focus on speaking and listening. The lack of consistent oral communication activities made it challenging for graduates to engage in conversation with international students while working in labs or to contribute effectively to presentations, either as presenter or audience member. Thus, although students’ research skills and content knowledge were strong, they could not perform effectively at international conferences, nor did they have the confidence to persist in trying to get their message across.

Secondly, learners who are members of labs with international students experience informal communication daily during research tasks, lunch, and lab outings. For these labs, graduates are able to improve their communication skills naturally. However, since very few labs in Japan are multilingual, this creates a challenging situation for students trying to network or collaborate with international peers.

Skills for Industry Settings

The two main skills that emerged from the interviews as essential to perform effectively in the workplace were “people” skills and professionalism. People skills referred to verbal and nonverbal interaction and communication with people from different research fields and nationalities. Interaction skills which many students found challenging were for example, initiating or interrupting a conversation, reacting quickly and appropriately to utterances, making small talk about “safe” topics, predicting behaviors, or knowing simple rules of social etiquette. Making a memorable and positive first impression is one of the best ways to form a collaborative partnership and expand one’s research network, thus it is necessary to acquire certain social skills through practice.

Professionalism was a second common theme that surfaced throughout the interviews and in the presentation course. Although there were some mature students in the graduate program (over 30 years of age), most of the students were in their early 20s and thus had very little life experience. Three issues arose as challenges for students. First, as stated above, most young researchers were largely unfamiliar with interacting with others outside their labs and had thus not developed the necessary mannerisms suited for attending or presenting at an international research conference. There was a bit of social anxiety which made it difficult for students to recover from a social faux pas. The second issue was time management. There

were some students who had to be reminded frequently to find the time to prepare for presentations before standing in front of an audience. Students were not allowed to read from a script during the presentation course, so they needed a certain amount of practice in order to look natural and feel confident about giving a presentation in their L2. A third issue was the inability to have a critical mind to problem solve and make sound decisions on their own. This was particularly evident during the presentation course when the instructor did not give explicit instructions. In the surveys, students themselves admitted that they had rarely experienced professional environments and felt that it was important to know how to be quick to learn new things in the workplace to establish a routine quickly and have a critical mind so they could work independently. Two international students mentioned the necessity of understanding teamwork and collaboration in Japanese laboratories which points to the importance of also understanding professionalism in specific cultural contexts.

Gap between laboratory work and industry settings

Long-term internships are uncommon for graduate students as they are usually busy in their laboratories conducting experiments, and internships are also typically done in the learners' L1. Thus, they rarely encounter English in real-life workplace situations. To experience professional skills in a real-life environment, it would be beneficial for graduate programs to collaborate with potential partners in specific industries on a systematic program, so that students can get an idea of the type of work they will experience after graduation. This would further help students to develop a professional mindset as they would need to show an appropriate level of social decorum and have flexibility to tackle various jobs. With regard to socializing, it would be prudent for laboratories to make it mandatory for presentations and discussions about research to be done in the L2 so that students will learn how to react spontaneously to informal and formal interaction.

Conclusion: Further research and recommendations

This research has thus far highlighted the need for GPD in Japanese universities in order to prepare students for life beyond their labs. The researcher provided a concrete definition for this particular context and presented first-hand accounts from students, professors, and an industry expert describing professional development components that are essential to student success. The researcher finally examined gaps between current curricula and GPD practices. The research now concludes with the next step in the research and specific recommendations of core academic and transferable 'real-life' skills and knowledge GPD training programs can implement so that students feel fully prepared for the experiences they will face during graduate studies and beyond.

Regarding the three aims in this study, further research is required to provide a more accurate picture of GPD in the Japanese university context. Although creating a working definition of GPD is important, the researcher will need to continue building a list of core guiding principles and a taxonomy of essential components related to language proficiency and professional skills. A second step will be to gather empirical evidence from a wider population of graduate students, professors, and industry experts regarding what constitutes GPD. One of the reasons for the research gaps is that there is a paucity of research on GPD in the Japanese EFL context. This results in a lack of knowledge sharing, inconsistent guiding principles, and few opportunities for learners to participate in GPD meetings, workshops, and long-term internships. To narrow this gap, more students and professors from other faculties will have to be interviewed to cross check if skills and knowledge for professional

development are the same or different. In addition, the researcher would also have to interview more industry experts to understand commonalities within various industries. Using the evidence collected, it would be possible to present a detailed report to heads of graduate departments to develop and streamline a GPD process.

Based on first-hand accounts of what students, professors and the industry expert felt were required for successful GPD, the following recommended list of content has been developed. The researcher feels that it would be beneficial as guideline when discussing content to be used in workshops or credit-bearing courses:

1. Defining “Professionalism”
2. The importance of building strong communities of practice and networking
3. Roles and responsibilities in academia and industry settings
4. Research ethics and code of conduct
5. Awareness and self-evaluation of “soft skills” vs. technical skills
6. Giving effective presentations (oral presentations and posters, face-to-face and online)
7. Finding external funding and writing up research proposals
8. Finding conferences and sending in a conference proposal
9. Designing CVs and practicing interviewing skills
10. Improving discussion skills: The impact of, current trends in, and future of the research field
11. Converting a dissertation or presentation into a scientific article
12. Understanding the aims and scopes of journals and writing critically for the specific journal
13. Giving advice to young researchers about how to “survive” graduate school and prepare for professionalism.
14. The role of reflection (in decision-making and critical thinking)
15. Practical activities for GPD (e.g., networking events, internship, mock conferences)

This study is in its first year of a 3-year longitudinal research project. As such there are many unanswered questions and further research will have to be conducted with a wider population to make more accurate claims. One point that administrators and department heads in Japanese universities can agree upon however, is that there is a lack of systematic GPD opportunities which is doing a disservice to its students. If a GPD program can be designed with strong guiding principles and clear components, and shared across faculties, then it would enable students to develop the necessary skills to succeed academically and later on in their careers.

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