The Research Doctoral Curriculum: What are the Best Approaches?

A Session designed to Generate Discussion, not Provide Definitive Answers!!

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Education is not the filling of a pot, but the lighting of a fire. — William Butler Yeats

A famous quotation—I even found it referred to in a US Airways article on the plane on the way in on Wednesday—but it is woefully inadequate as a culinary analogy to the proper education of a PhD student as it ignores so many things, such as:

Culinary Analogy to the Education of a PhD Student

• What is the size and/or shape of the pot, and what is its composition?
• What are you putting into the pot (not only in terms of the choice of the ingredients, but their quality and freshness)?
• What is your preparation of the ingredients (e.g., size and shape of your cuts) and in what order to you add them to the pot?
• What is your spicing (and is it the same for every dish)?
• What type of heat do you use for your “fire” (and what temperature is best) and how long do you “cook it”?

Differences in PhD vs. MA or AuD Curricula

• In this year’s Council Meeting (as in many other meetings), much of our talk involves our professional programs (the MA-SLP and the AuD) in terms of student preparation, education, coursework training and appropriate (clinical) experiences; and one might use a similar culinary analogy for those programs.
• However, there are clear differences in approaches to the curriculum in graduate professional programs (MA-SLP and AuD programs and even the SLP Clinical Doctorate) and research doctoral programs. Those differences are manifested in terms of the number and type of course and content requirements, expected knowledge base, research vs. clinical experiences, types of mentorship encountered and training approaches. Part of the difference involves determination of the nature of the educational process.

Lack of External Accreditation for the PhD

• Both professional graduate programs and research doctoral programs have internal requirements that are set by the University-College (e.g., by the Graduate School), in part, in keeping with national (and international) expectations.
• However, professional programs also have a large set of external requirements that come as a function of accreditation (for the Department) and certification and/or licensure (for the students). Accreditation and Certification will determine much of the nature of course offerings (either directly or indirectly), the nature of advising, practicum experiences, etc.
• There is no active “accreditation” process, per se, for doctoral programs in our field or other fields. Should there be? Given widespread “academic freedom” advocacy, I expect a negative reply.
Requirements for Doctoral Programs

• Internal expectations for doctoral programs in our field are almost completely determined by the Department and the University (and its regional board for University accreditation)—many times this is done by the school’s Graduate School (where applicable as it is at Ohio State)

• However, a Department’s academic location in terms of primary college (e.g., College of Arts and Sciences, Social and Behavioral Science, Allied Health or Education) may also have a significant effect on the nature of the program. For instance, some doctoral programs in the College of Education may offer an Ed.D. degree rather than a PhD degree (Columbia University, Teacher’s College, offers both). Even if the degree awarded is the same, the requirements/expectations for students may be different.

Differences between Doctoral Programs

PhD programs may differ among different colleges and universities in terms of at least the following aspects (this is by no means exhaustive):

• Size of program, location of program and composition of faculty.
• Structured curriculum (and amount/type of required coursework)
• Importance and nature of individualized mentoring of PhD students
• Variation in research experiences (nature and number)
• Types of “research tools” needed and expected (and how they are developed within the student, e.g., via courses or experience or both)
• Approaches to a doctoral “Qualifying Exam”
• Approach to and the format of the dissertation

Each of these will be considered, in turn.

Size and Location of Program and Composition of Faculty

• Size of “program” can involve the size of the faculty as well as the size and extent of the program’s research-related facilities (both within and outside the department).

• Location involves not only which college the program might belong to, but which university and, in turn, the number and strength of related departments the school might have (what faculty are there), and the extent to which the program utilizes these opportunities.

• Composition of the faculty (in terms of areas of expertise) will determine the types of doctoral topics can be addressed by students; programs will often only offer admission to students whose areas of interest match those of the department’s faculty.

Structured Curriculum and Required Courses

• Doctoral programs can differ significantly in terms of the number of specific required courses must be taken and/or the distribution of course hours within specific or more general content areas (and whether such courses are in the department or related disciplines).

• Some Departments do provide lists of required courses (at least on their website and/or graduate handbook, of the information provided there the majority indicate specific coursework requirements). One program indicates that “the specific requirements for coursework for all CSD program doctoral students, regardless of background degrees, are specified below” and follows with a list of specific courses.

• This approach has the advantage of establishing a relatively uniform background/knowledge based for all doctoral students. This is not an uncommon approach in some humanities fields.

Less Structured Curricular Approaches

• According to my review of the doctoral programs in CSD (based on material available on their websites), a large number (perhaps a majority) of programs in our discipline take the approach of indicating that a certain number of hours must be taken within the CSD program, with the remainder of the hours divided into research tools, courses in related departments (including psychology, linguistics, gerontology, neuroscience, electrical engineering, otorhinolaryngology), professional development (teaching, grant writing, academic administration, clinical supervision), and research (many of them dissertation hours); but they do not list a large number of specific course requirements for all students in the PhD program. The freedom that is often allowed can be seen in the following excerpts from sample programs:

CompDoc University #1

• The Ph.D. program is designed to provide students with a strong foundation in research both across the field of Speech-Language-Hearing Sciences, Speech-Language Pathology, and Audiology and to prepare students to become independent scholars in the area of their choice. The curriculum of the doctoral program allows students maximum flexibility to select coursework within the discipline and across other disciplines, such as psychology, child development, special education, early childhood, cognitive sciences, and a wide range of other areas.
CompDoc University #2 (an example of the “strong” mentor model)
- The doctoral program in Speech and Hearing Science is intended to be tailored to the interests and background of the individual student. This apparent lack of structure may be daunting to some prospective doctoral students, but the faculty is committed to requirements that permit the student and her or his advisor(s) to design coursework and laboratory experiences that will be best suited to the student’s specific area of interest.

Do such Individualized Programs meet the needs of the Discipline and the Student?
- Of course, the absence of very specific coursework requirements (or, often, specific and department-wide (or even area-specific) reading lists and/or content raises at least the following questions:
  - What sets of knowledge and skill do we all expect graduates of our PhD programs to have? Are these expectations commonly held among your faculty?
  - How do we guarantee that all of our students share these expected/required skills/knowledge bases?
  - How do we compare one doctoral program to another (or evaluate quality)? Content? Course Requirements? Faculty involvement? Student productivity in terms of research? Faculty research productivity? Success in obtaining academic/research positions?

Importance of Mentoring
- In a review of the descriptions of 55 PhD programs CSD programs that I reviewed on the internet, a full 96% of the programs can be seen as describing themselves, in any sense, as “mentor based.” More than 16% of these PhD programs require that students identify a prospective faculty mentor or faculty sponsor in the application/admission process and 25% require some type of faculty “sponsor.”
- This is an essential concept in doctoral training/education in our discipline. Even at an early stage of a student’s doctoral education, she/he is associated with a specific advisor/mentor in a relatively well-defined area.

Importance of Mentoring (cont.)
- Most programs that provide so-called “individualized” models of doctoral education to a large extent depend upon the “strong mentor” approach to doctoral education.
- The mentor helps the student decide on choices of courses to be taken, research experiences, the content of qualifying exams and the topic of his/her dissertation.
- The mentor often takes on the responsibility of “directly guiding” the graduate level education of his or her student (often affecting or determining the student’s viewpoint on theory and research/clinical approaches)
- This approach to the PhD education is thus very closely tied to the skills and experiences of the doctoral mentor, leading to the question:

Training and Preparation of Mentors
- Given the importance of mentors and mentoring in our doctoral programs, what preparation/training do programs provide to faculty members (especially, junior faculty members) in terms of developing and/or honing mentoring skills?
  - Does your program set a given “time landmark” for when the faculty member can become a PhD advisor (e.g., after promotion and tenure? After year 3? Immediately upon hiring?),
  - Does the Chair of the Department/Program Head monitor the performance of young mentors (or mid-level or even senior mentors)?
  - If a faculty member has become (or remains) relatively inactive or a long period of time in terms of an independent program of research, is he/she allowed or encouraged to be a mentor to PhD students? When is the decision made to forbid an unproductive (however defined) faculty member from being a mentor to PhD students?

Mentoring Junior Faculty
- Since the development of doctoral students might be in the hands of junior faculty (in their 3rd or 4th year or even earlier), what procedure(s) does your program have in place to mentor junior faculty?
  - How do you involve more seasoned faculty in the process (e.g., as a co-advisor)?
  - Is there a college-wide process/procedure/set of expectations in place?
  - How do you evaluate success (or failure) in this process?
  - What does your program do about junior faculty members who are seemingly immune/resistant to mentoring?
  - As a chair, how can you reward successful mentoring? This is an especially interesting question in the face of budget cuts in higher education in so many states.
Variation in Research Experience

- Programs also vary in the extent of involvement of the doctoral student in different research labs (or in clinical research experiences).
  - To what extent is the student primarily involved with the basic or clinical research of her/his mentor?
  - To what extent does the student have meaningful (insightful, rewarding, extensive, etc.) experiences with basic or clinical researchers other than her/his mentor? And to what extent is this experience valued by the mentor, the student and/or the program?
  - The question is how these different approaches to research experience contributes to the student’s development as a scholar/researcher. Which is preferred? in-depth concentrated experiences or more variegated experiences that promote breadth of viewpoint. Are these mutually exclusive or not?

Research Tools for the PhD Student

- What research tools does your program systematically require or expect your doctoral students to acquire? These often include courses or experiences in statistical analyses, computer modeling (sometimes requiring more advanced mathematical skills), acoustic analysis, brain imaging, eye-tracking, computer programming, ABR, etc.
- How does your program provide instruction/experience in these areas? Specific courses (within or outside your department)? Work with the mentor or other PhD committee members? Work with academic centers (e.g., Center for Cognitive and Behavior Brain Mapping)?
- How is the development of knowledge and skills by the student actively encouraged, or do you “lead the horse to water” and hope that he/she drinks (and is quenched)?
- How does your program monitor progress or evaluate success?

Approaches to Qualifying Exams

- Doctoral “Qualifying Exams” or “Candidacy Exams” (referring to those written and oral exams that the student needs to pass in order to be a candidate for the PhD degree, and to be “ABD” – all but dissertation) often vary significantly from program to program (and, sometimes, from mentor to mentor within a specific program).
  - These Candidacy Exams can differ in several important ways including:
    - Does the exam assess explicitly and overtly the student’s “background knowledge” in his/her discipline (relatively broadly defined) or is it focused on the area to be addressed in the dissertation?
    - Does the exam include a defense of the student’s dissertation prospectus?
    - What is the basic format of the exam?

Defense of the Dissertation Prospectus

- Many if not most programs require a formal approval of the student’s dissertation prospectus prior to her/his starting on the dissertation research. However, in many cases this approval is relatively informal (involving only a meeting with the student and members of his/her PhD Committee reviewing the written proposal).
  - However, some programs require a more formal “defense” of the prospectus prior to commencing the dissertation study.
  - One might ask whether or not these various “hoops” through which the student must jump will delay his/her research, reduce potential publications, or represent a reasonable approach which ensures that the research is potentially important and that the project actually “doable.”

Sample Formats of PhD Qualifying Exams

- Formats for the written portions of the PhD Qualifying exams differ between programs (although almost all include an oral defense); for example,
  - Ohio State requires either exams in 4 areas each of which take 3 days, or exams in 3 areas each of which take 4 days (12 days in total).
  - Vanderbilt University’s written examination consists of either 3 or 4 questions. The Program Committee develops the specific questions. After approval of content and form, the DGS will present the questions to the student one month prior to the due date. Faculty will review the answers to written examination questions after the four-week preparation period.
Sample Formats of PhD Qualifying Exams

• Indiana University’s exam is somewhat more flexible “Guidelines suggest that the student must complete successfully a series of written exams ranging from a conventional timed examination to a research paper composed over a period of several weeks.”

• University of Illinois requires an 8-hour comprehensive examination is written for each of three members of the Graduate College who will collectively evaluate the written performance of the student (24 hours total). At least two of the faculty must be members of the Department of Speech and Hearing Science. Usually the student's advising committee will serve as the examining committee. Examining committee members’ scholarly work should be consistent with the student's interest and course work. The student has the option of substituting a research project for one of the three written comprehensive examinations.

Sample Formats of PhD Qualifying Exams

• Arizona State (on their website) has two options:
  – Students write responses to questions posed by committee members in four three-hour blocks of time (each block dedicated to the questions of one committee member). Typically, students complete the written examination in two working days (writing mornings and afternoons on two consecutive days).
  – Students complete a written paper for each member of the committee during the third year of enrollment.

• Should there be a preferred approach to the qualifying exam? If yes, then why? If no, then, why not? Institutional, departmental and even individual faculty member histories and attitudes determine the answer to this question.

Approaches to and Format of the Dissertation

• There is variation among different departments (and colleges) at Ohio State and, I’m sure, at other institutions, in terms of acceptable formats of the dissertation. As a graduate faculty, we have recently been discussing the possibility of allowing greater flexibility in this regard.

• There are currently two primary formats for the dissertation:
  – Traditional format
  – Multiple Articles format

Traditional Dissertation Format

• The tradition format for the dissertation (and one followed by many departments in the Humanities as well as the Social Sciences) often consists of five chapters organized, most commonly, in the following sequence:
  – Chapter 1 – Introduction
  – Chapter 2 – Literature Review
  – Chapter 3 – Methods
  – Chapter 4 – Results
  – Chapter 5 – Conclusions/Discussion
  – References & Appendices

• The Literature Review is often very long, not concise but excursive providing verification that the student knows all the relevant literature.

Advantages of the Traditional Format

• The advantages of the traditional dissertation format include the fact that:
  – It provides a standard template and shared experience for all doctoral students (lots of history with this format, very recognizable as an acceptable academic document verifying the ability to complete research).
  – It makes the process more consistent and understandable for the entire cohort of students.
  – It also provides training in delivering an in-depth piece of original research and this training is a singular opportunity in most academics’ careers that allows them to acquire the experience and evidence of mastering a topic and methods

Problems with the Traditional Dissertation Format

• The greatest problem with the traditional format, particularly with regard to a dissertation with a number of different experiments, is that it is a challenge for students to convert it into research articles (assuming we are a non-book discipline).
  – The nature of the literature review is very different in the traditional dissertation format than in a research article.
  – Writing up the dissertation as a single large document often restricts a student from submitting and publishing research articles (with or without their mentor) during the dissertation year(s), or at least that is something that many of us have observed.
  – Except for rare occasions, an individual only writes one dissertation (so mastering this “genre” of writing is of minimal value).
  – Many dissertations will not result in any publications.
Alternative Dissertation Format: Multiple Journal Article Format

- The Multiple Journal Article format now accepted by many programs (also called the Paper-Based format, the Scandinavian format and the Sandwich format) allows the presentation of dissertation research in the format of:
  - Journal manuscripts published during a candidate’s doctoral training
  - Journal manuscripts submitted for publication during a candidate’s doctoral training
  - Journal manuscripts to be submitted for publication immediately following dissertation defense proceedings
  - The doctoral candidate decides with his/her dissertation committee on the number of articles suitable for a particular dissertation report. When collating already-published manuscripts for a dissertation report, it is common to have a minimum of three articles form the body of the text.

Multiple Journal Article Format (cont.)

- The Journal Article Format dissertation usually contains the following sections:
  - Chapter 1 – Introduction
  - Chapter 2 – Manuscript # 1
  - Chapter 3 – Manuscript # 2
  - Chapter 4 – Manuscript # 3
  - …
  - Chapter X – Conclusion
  - References & Appendices

- Might this alternative approach benefit your student?

Advantages of the Multiple Journal Article Format

- The advantages of the Multiple Journal Article Format include the fact that:
  - It provides the opportunity for more “real-life” practice in writing academic papers.
  - It can increase the student’s CV (useful when applying for academic positions and/or grants).
  - It allows for comments from scholars other than those on the student’s committee (journal reviewers).
  - It mitigates against poor results or arriving at a project failure too late in one’s dissertation process by focusing on smaller projects and getting progressive feedback through the publication process (Duke & Beck, 1999).

Disadvantages of the Multiple Journal Article Format

- Disadvantages of the Multiple Journal Article dissertation format:
  - The process is slower due to publication timeframes, and if full publication is required this can amount to a substantial delay.
  - Students get the experience with several smaller projects but not the benefit of working on one big, in-depth project.
  - Peer review may be tougher and less open to discussion than with the student’s dissertation committee.
  - There may be a lack of experience at one’s university with this format that may provoke resistance or result in insufficient support.

Overcoming these disadvantages

- To get around the time delays that academic publishing often entails, Duke and Beck (1999) suggest that a multipaper dissertation be allowed to include papers that are ready for consideration or in the process of consideration or publication.
- Another way to combat publishing and feedback delays is to publish portions (chapters) of the dissertation in conference proceedings.

Evaluation Criteria for Dissertations

- Most academicians are familiar with expected quality and quantity standards in evaluation a dissertation in the traditional format.
- The nonstandard dissertation format introduces the problem of finding an evaluation criteria that members of the committee and the Department (and the Graduate School) can agree on. Traditional quality metrics may not apply to such a format with profound differences in structure and goals.
PhD as Process not Product

• If dissertations are a journey then some see the destination as less important than how one got there.
• Badley (2009) notes that shares the journey analogy as it “should help candidates shift attention away from the traditional PhD emphasis on the research product - the thesis itself - towards the development of the autonomous scholar who is capable of undertaking further research journeys” (p. 340).

References