INTERNATIONAL DEVELOPMENTS IN DOCTORAL EDUCATION (PHD):
IMPLICATIONS FOR THEOLOGICAL INSTITUTIONS
A Summary Report to the
ICETE Doctoral Initiative Steering Committee
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INTRODUCTION

The following report was developed for the International Council for Evangelical Theological Education (ICETE) Doctoral Initiative Steering Committee (DISC). It is based on a review of a wide range of recent publications, including 83 journal articles and book chapters addressing doctoral education issues (see Bibliography). In addition, the following four recent books provide helpful collections of chapters on what is happening in doctoral education internationally, in terms of country, regional, and global trends. They are excellent resources for those wanting to dig into these trends themselves.

> Blessinger, Patrick, and Denise Stockley, (Eds.). (2016). *Emerging Directions in Doctoral Education.* (Innovations in Higher Education Teaching and Learning, Vol. 6). Emerald.
> Cassuto, Leonard, and Robert Weisbuch. (2021). *The New PhD: How to Build a Better Graduate Education.* Johns Hopkins University Press.
> Nerad, Maresi, & Mimi Heggelund, (Eds.). (2008). *Toward a Global PhD? Forces and Forms in Doctoral Education Worldwide.* University of Washington Press.
> Yudkevich, Maria, Philip G. Altbach, and Hans de Wit, (Eds.). (2020). *Trends and Issues in Doctoral Education: A Global Perspective.* SAGE.

Together, these readings present a clear and fairly consistent picture of several forces impacting doctoral education internationally, and changes in doctoral education over the last twenty years and more that can be seen either generally, or within particular regions of the world. They are helpful for understanding how doctoral education is developing, and how theological education institutions may want to consider strengthening and adapting their own programs in light of changing approaches and models in the academic communities around them. The report is organized as follows:
> I. Issues Impacting Doctoral Education Globally
> II. Doctoral Education Developments in Light of these Issues: Revising the Models
> III. Implications for Doctoral Education Development in Theological Education Institutions

It is my hope that this brief review can help members of DISC and theological education institution leaders consider important issues in the design and support of quality doctoral education efforts to better serve the church in their regions. School leaders considering beginning new doctoral programs, or in the midst of evaluating current programs, may find this a particularly helpful orientation.

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I. ISSUES IMPACTING DOCTORAL EDUCATION GLOBALLY

The literature on doctoral education around the world is remarkably consistent in the identification of a number of issues and concerns that are causing nations and universities to propose changes in how doctoral programs are designed and carried out. Most of these will not be a surprise to anyone who has much experience in offering and overseeing doctoral programs. The repeated themes in the literature reviewed highlight the following eight common concerns:

1. **High student attrition rates and delayed degree completion.** Many reports show a concern over what is seen as an unacceptably low graduation rate from doctoral programs. Reports of high attrition rates are common around the world, particularly in the humanities (as compared with the hard sciences). In addition, there is concern over lengthened times needed for students to complete the requirements for their degrees, which in some cases includes requirements to publish journal articles from their dissertations/theses. This has led to national efforts to reduce "time to degree" and identify and address causes of attrition.

2. **Too narrow of a focus on disciplinary study: Graduates pursuing roles in academia not trained for well enough for teaching or other aspects of academic service.** Another common concern is that while doctoral graduates have demonstrated their research skills in their thesis/dissertation, they have not necessarily had the opportunity to learn about and practice teaching in higher education settings. With such a strong emphasis on research skills development, this critical aspect of graduate's future work has not received adequate attention in their preparation. In addition, graduates are not equipped or prepared for other aspects of their academic roles, including administrative service.

3. **Questionable relevance of the PhD outside of academia and the perceived need for more "transferable" skills.** In more developed countries, doctoral education has grown rapidly over the last few decades as part of an attempt to provide skilled workers for the "knowledge economy." In western, more economically developed countries, most PhD graduates will secure work outside of academia, and there is concern that while these graduates are well trained and acculturated to the higher education context, they typically lack the kind of skills that would make them valuable contributors in other employment settings.

4. **Poor quality of outcomes shown, and concern over faculty development to supervise student research.** As many doctoral programs have undergone scrutiny in evaluation of students' research theses/dissertations, it is not always clear that the students are exhibiting strong enough research skills or have added in any meaningful way to the knowledge of their fields. Since the research project is overseen by faculty, there has been significant concern voiced over how well faculty are trained and mentored in their roles as research supervisors. It appears that in many cases, it is assumed that if they earned a doctoral degree and successfully completed their own theses/dissertations, they can supervise students in their efforts. A need for more intentional and thorough training and mentoring has been

noted. In addition, in some cases dissertation supervision is not calculated as part of the faculty member's workload, or results in overloads due to how many dissertations are to be supervised.

5. **The need to make doctoral level education accessible to a more diverse student body.** In many settings, there is a recognition that students interested in doctoral study are changing. In the past they have been predominantly younger adults, male, single, able to study full-time. Today, those wanting to pursue doctoral study may be working and only able to study part-time, male or female, single or married, early or mid-career, and unable to live on campus. This has contributed to the lengthened time to degree completion and concerns over attrition. There is also greater ethnic diversity of doctoral students in many countries, and in many schools in the "west" there are significant numbers of international students.

6. **The status of doctoral students: employees or students?** There are different approaches to how doctoral students are identified and implications it has on their doctoral experience. In some countries, doctoral students at state universities are viewed as employees, who are paid to help with teaching and research projects even as they learn new skills and carry out their own research. In other countries, doctoral students are viewed as "customers," who pay tuition or have to secure scholarships to cover the costs of their studies. These differences have significant economic implications for those who desire to pursue doctoral studies.

7. **Concerns over the nature of the final capstone project.** The typical research monograph required of doctoral students has been critiqued, particularly in some disciplines (e.g., hard sciences, social sciences), as not the best, most relevant investment of students' research efforts. Other models, including multiple journal articles (for PhD) and professional projects (for professional doctoral programs) have been experimented with, seeking to make research more accessible and contribute to the students' development as a professional scholar or a scholarly professional.

8. **The "Brain Drain": Students who study internationally not returning to serve in their home country.** Too often, as students leave majority world contexts to go study in doctoral programs in the "west," many do not return home to teach or serve in other ways. In some cases, this is 50% or more. This has led to a desire to develop doctoral programs within MW countries as a way to combat this drain.

II. PHD PROGRAM DEVELOPMENTS IN LIGHT OF THESE ISSUES: REVISING THE MODELS

Given the nature and range of issues noted above, some major changes have been happening in doctoral education program design and implementation. These innovations and trends can be summarized with the following eight observations. [Note: These are a range of developments, with most schools addressing one or more of them. This is descriptive, not prescriptive, and no school is doing all of them.]

1. **Rapid growth of doctoral programs: "Massification"**
   Doctoral education is increasingly viewed as an investment that nations need to make in order to make or keep their economies competitive. People with doctoral level training are viewed as critical to the "knowledge economy," which includes the business sector, not just the academic context. This focus on the "knowledge economy" has led to the growth of higher education in many countries, and the "massification" of doctoral level programs, increasing pressure on faculty in higher education institutions to ensure a steady stream of doctoral graduates.

2. **Diversification of doctoral education models**
   One of the major developments over the last few decades has been the increased diversification of types of doctoral programs and the rapid growth of new ones in professional and practical study areas. Here are a few different ways that diversification is playing out in various settings:
   a. **Different types of doctoral programs:** In the European context, nine basic types of doctoral degrees have been identified (Bao, Kehn, & Ma, 2016):
      i. *Research doctorate:* geared to the academic profession
      ii. *Professional doctorate:* applied disciplines, professional practice focus
      iii. *Taught doctorate:* fixed curriculum, graded learning outcomes, research project
      iv. PhD *by published work:* combining research articles into a dissertation
      v. Practice-based doctorate: in areas of art and design (UK)
      vi. *"New Route" doctorate:* taught components, dissertation integrated, enter with BA and may only do masters degree instead
      vii. *Joint degree doctorate:* offered by two or more universities
      viii. *Cooperative doctorate:* students in applied sciences schools, joint effort with faculty from universities that can award doctorates
      ix. *Industrial doctorate:* Engineering, applied research, supervised by senior engineer, taught elements by university faculty
   b. **Part-time vs full-time study:** Traditionally, many fields of study required students to study full-time, tending to attract younger adults preparing to enter their vocational careers. Today, more programs have provision for, or are built around the needs of part-time students, who may be mid-career and unable to uproot to move somewhere for full-time study.
   c. **Distance vs on-campus study:** Tied in with the issue of full-time vs. part-time study, instead of requiring on-campus class interaction, more programs are utilizing various approaches to distance education, including online courses and seminars, intensive courses or short seminars, and live-stream video classes and advising meetings.
   d. **Growth of cohort models:** Another major change in educational model has been an increase in the move from doctoral study as an individual experience to the formation of cohorts of students who work through their coursework and training together, and continue their interaction and support while students work on the final research project. Instead of research being an isolated experience, many programs are creating ways to keep students connected, hoping to speed progress toward degree completion and reduce student attrition.

e. **Growth of multi-disciplinary study:** While historically, research doctoral programs focused on study in one particular discipline, there has been growth in programs that are multidisciplinary, equipping graduates for cross-disciplinary work.

3. **Increased focus on both academic and "transferable skills" development**
   The Center for Innovation and Research in Graduate Education (CIRG) issued a report on "Forces and Forms of Change in Doctoral Education Worldwide" (2005) that identified three essentials or commonalities of doctoral education worldwide. These included:
   a. The doctorate (i.e., PhD) should contribute to knowledge through original research
   b. PhD graduates should have a substantial knowledge in their area of study
   c. PhD training should include development of transferable skills and competencies (sometimes called "translational skills," "professional competencies").

   The range of skills now recommended for doctoral students to acquire include the more traditional ones, like research, writing, and teaching, as well as other skills more associated with employment outside the academic sector, including skills such as teamwork, cultural awareness, project management, and self-management. This concern is more pronounced in the "west," where most graduates will not find employment in higher education settings. In many developing nations there is still a significant lack of highly qualified faculty teaching in higher education institutions, and most graduates can find employment in that setting.

4. **Increased concern for quality assurance, increased regulation, progress monitoring**
   In all regions of the world, the issue of what makes a doctoral program "doctoral" has become an important one to address to ensure that graduates are well equipped for their future work and study (see #3 above). With the diversity of types of doctoral programs described above, ensuring that each type of degree retains the essence of "doctoralness" is critical. This has resulted in regional accrediting groups giving more attention to the program learning outcomes and how this learning is demonstrated. There is more attention to the quality of outcomes, not just the design of the program. Included in this concern for quality assurance has come increased focus on:
   a. **Research supervisor training:** The capstone research project, however it is designed, is guided by one or more faculty members who supervise and mentor the student through the research and writing process. Ensuring that faculty are well equipped and trained for this responsibility has become an important issue, particularly in light of the rapid growth of some programs.
   b. **Faculty workload concerns:** In line with the concern over research supervisor training, faculty workloads have come under scrutiny. With programs growing rapidly, faculty have had to take on more research supervision, in many cases making it more challenging for them to do any of their own research and writing – which is part of what helps them serve well as supervisors of students in their research efforts.

c. **Evidence of achievement of learning outcomes:** Academic programs are designed to help students achieve particular learning objectives. The evaluation of doctoral programs involves clearly identifying what those learning outcomes are and then examining evidence as to how well those outcomes have been achieved by those who complete the programs. Assessment rubrics have become common for key assignments, especially the final research project.

d. **Student progress, drop out, and time to degree:** With doctoral student time-to-degree growing in many countries, and high attrition rates from many programs, governments and other funders of doctoral programs have raised concerns and demanded program reform to better support students toward the completion of their studies in a timely manner. There is increased financial pressure to ensure higher completion rates and shorter time to degree, or universities may risk losing their funding for these programs.

5. **Increased structuring of doctoral programs and their oversight**

Historically, there have been two major approaches to doctoral study (PhD). These are: (1) The Apprenticeship Model, favored in Europe, with doctoral students studying and carrying out research under the supervision of one qualified faculty member, working as a "junior colleague" in the educational institution ,and focusing on the completion of a research project without required coursework, and (2) The Structured Model, more typical in the United States, with up to two years of structured coursework and qualifying exams prior to moving into the dissertation research phase.

One of the major trends noted in most parts of the world is the tendency for increasing structure in doctoral programs. This is a response to the concerns noted earlier about length of time to degree completion, student attrition, and concerns from students regarding quality of supervision from their faculty members. In most cases, this is not a full adoption of the US "Structured Model," but a hybrid between the Structured Model and the Apprenticeship Model. This increase in structure can take many different forms, including one or more of the following:

a. **Admissions:** Clearer admission standards for doctoral students and monitoring their progress and timely completion of the program of study.

b. **Coursework/seminars:** More required coursework or structured seminars to train students in research methodology, writing skills, and address various "transferable skills" related to future employment. In many cases, this required coursework is experienced by students in "cohorts," peer groups that move through the program at the same time, increasing opportunities for mutual support.

c. **Graduate schools:** The growth of graduate schools or doctoral schools to give structure and oversight to doctoral education efforts within a higher education institution. In some cases, these structures provide students with training in the "transferable skills" noted earlier. They may also oversee faculty workloads and monitor student progress.

d. **Supervisory teams:** An increase in the use of supervisory teams instead of lone supervisors for student dissertation research, replacing the one-on-one

apprenticeship experience with a more collaborative interaction with more than one faculty member.

Each of these areas of increased structure is being implemented to try to reduce student attrition and time to degree completion and ensure students receive the support they need to complete their program well.

6. **Increased diversity of capstone/dissertation/thesis models**

   Within PhD programs, the traditional dissertation monograph is still the dominant model. However, a collection of research articles that have been published, or evaluated as "publishable quality" is a model that is gaining ground. The main rationale for this newer approach is that it gives students experience in a more common research writing form, involves a blind peer review process, and speeds the dissemination of their research. In some cases, the dissertation monograph is supplemented by one or more published articles as evidence of the quality of the work and its acceptance in the research community.

7. **Different approaches to the evaluation of student capstone projects**

   There is a lot of diversity in how students' final dissertations are evaluated. The varied models owe much to the colonial and educational history of the country the university is within. In general, the evaluation process for these final research projects has received new attention, and efforts are made to ensure a fair and objective assessment is carried out. In the US structured approach to doctoral studies, it is common for the student's capstone research project to be guided by a committee of professors who also serve as the evaluators of the final product. However, in most other parts of the world there is a mix of approaches, with one or two faculty from the school overseeing and guiding the student in the research effort, but others from their school or outside their school (or a mix) who review and pass judgment on the final product. In most cases there is a written review and an oral defense, but this is not uniform. In some countries there is no oral defense, but in others there is. In a few countries, there are governmental agencies involved in the review and approval of the research project. In addition, some countries require the publication of research articles in approved academic journals before the student is approved for graduation.

8. **Internationalization and collaboration in doctoral education**

   Historically, many students from the majority world context sought to do their doctoral studies in Europe or North America. The perception was that these were the stronger programs, with more credibility, opening more opportunities upon graduation. While this is still the case in some measure, there is a growing trend of internationalization in doctoral education in other countries/regions as well. Many schools desire to have international students and are eager to form networks with other schools to promote collaborative research efforts. In other cases, schools develop cooperative efforts with another school, resulting in students receiving one degree from both schools, or dual degrees. Still other models have students beginning studies at their home school, then spending 6-12 months studying at another university (typically one with strong resources in the discipline of study) before returning to complete their degree at their home school. Some universities in

the "west" have partnered with universities in the majority world setting to provide collaboration in the supervision of students in their research to help faculty in the majority world school grow in their research supervision and assessment skills.

III. IMPLICATIONS FOR DOCTORAL EDUCATION DEVELOPMENT IN THEOLOGICAL EDUCATION INSTITUTIONS

In light of the issues universities and governments in different parts of the world are wrestling with regarding the development of strong, relevant doctoral education programs, and the various responses and new approaches to the design and delivery of doctoral education internationally, there is much that we in theological education can learn that could strengthen our own doctoral education efforts. Below is a brief review of several concerns that seem common in doctoral programs in theological education institutions, and approaches to consider that may help address each of these concerns.

1. **Are you concerned about the lack of diversity of your students? Do you want to see more students from different backgrounds?** Your programs may be successful in attracting some kinds of students, but not the wider range of people you believe need to be equipped with doctoral training to strengthen and support the church in its mission. Here are some things to consider that may be helpful in expanding the kinds of students who come to and complete your programs.
   - **Marketing and admissions:** Do your marketing efforts need to be expanded, taking into account the kinds of students you wish to attract to your programs? Are you on the lookout in the admissions review process for students who may be worth investing in who may come from groups that don't typically pursue your program?
   - **Accessibility and program design:** If you have been offering a fairly traditional doctoral program model, with a heavy reliance on full-time study and on-campus classes, might more students be able to consider doctoral study if you integrate more distance education opportunities and program design elements that allowed for more part-time study?
   - **Strengthening support structures:** When less-traditional students enter doctoral programs, do they find the kinds of support and encouragement that can help them persevere in the midst of the challenges they may face? Might the use of peer cohort groups and regular interaction with a faculty or student mentor/ coach help?

2. **Are you concerned about high student attrition rates and/or students taking a long time to complete their degrees?** If you are seeing many students exit your program without completing the degree, or students spending far too long in the research phase of the program, it may help to consider some of these issues.
   - **Adequate admissions standards:** Are you adequately screening for qualified students in the admissions process? Are your admissions standards clear, and do you adhere to them in the review of applicants? Too often school leaders may feel pressure to "fill the seats" in a program and relax their admissions standards,

hoping the newly admitted students will rise to the challenge. This can be a recipe for discouragement and withdrawal.

- **Increased program structure for critical skill development:** Many institutions are increasing the structure of their programs to ensure students acquire the key knowledge and skills needed to succeed in the research phase of the program. Whether programs include courses or seminars, schools are increasing efforts to ensure all students have gained what is needed to successfully navigate the capstone project. Assessment of the successful learning of these critical skills and knowledge is carried out across the program, not focused solely on the final research project.
- **Increased support experiences:** Finally, as students tackle their final research projects, are there enough supportive relationships in place to encourage their perseverance and progress? Cohort groups, dissertation support groups, seminars or colloquy where students present their work and give feedback to one another, can all increase the sense of support students feel in the midst of what can be a very isolated and lonely research and writing experience.

3. **Are you concerned about the vocational preparedness of your graduates?** As you think about the various roles many of your graduates will take on, are they receiving the kind of training and experiences within their doctoral program to prepare them for the range of responsibilities they will move into after they graduate? What is important to consider in both their academic and vocational preparation?
    - **Training in scholarship in their discipline:** Traditionally, this has been the primary focus of doctoral education, and it is important to ensure students are equipped to be part of the ongoing research and writing efforts of those in their disciplines. Are students getting enough exposure to this? Do they have a growing sense of what research is needed and how they may contribute? Are they attending academic conferences, reading strong academic journals, and learning how to write for this kind of audience?
    - **Training/experience in teaching:** Most doctoral graduates from theological institutions will end up teaching in formal educational settings. Are students gaining the kind of knowledge, skill development, and experience with teaching to equip them well for this critical part of their vocation? How might this be strengthened in the program?
    - **Training/exposure in administration:** While most doctoral graduates may not be planning to move into educational administrative leadership roles, the reality is that many of them will be called on to give leadership in some ways within their schools. Are students learning about higher education administration and how to carry out the different kinds of roles and administrative tasks in these settings (e.g., department chair, dean, committee leadership, program design and assessment)?
    - **Training/experience in speaking, writing beyond academic settings:** If our graduates are to be "doctors of the church" (as my former colleague, Klaus Issler used to say), are they gaining skills and experience to share their work both within and outside of academic settings? Are their opportunities to gain experience in speaking and writing for non-academic audiences – bringing the fruit of their scholarship to strengthen congregational ministry?

4. **Are you concerned about the appropriateness of the capstone research project (dissertation) your students complete?** In recent years there has been considerable critique of the traditional research doctorate dissertation, and many schools have been experimenting with alternative models to try to better achieve their program learning outcomes. Given the purposes and goals of your doctoral program, and the academic standards of higher education in your region/country and within the academic discipline of the program, is your "capstone research project" a good fit?

   - **Review the program purpose and Program Learning Outcomes (PLOs):** It can be very helpful to review the purpose of your program and the particular PLOs you desire students to achieve within it. How well does your current dissertation model fit in helping students achieve these PLOs? Which ones are well served by the model of dissertation you use? Which are not as well served?
   - **Consider alternate models of dissertation:** Many well-known institutions have allowed alternative dissertation models, such as a collection of research articles on a topic that are tied together with an introduction and conclusion section (e.g., three research article model). This may be appropriate for some fields of study, but not as relevant for others. Consider reviewing dissertations from several other institutions that offer a degree similar to what your school offers and see if there are models or features that may be worth incorporating in the one your program uses, or at least as an alternative to make available for some students and research topics.

5. **Are you concerned about student preparedness to successfully navigate the demands of the dissertation?** For those programs that begin with coursework and then move into independent research projects, this transition can be a challenge for many students. For those programs that are primarily research based, students come with diverse backgrounds and may not be equally prepared for some of the critical aspects of carrying out their research efforts. What helps ensure students have what they need as they prepare to launch into their final research projects?

   - **Admissions standards and orientation:** Begin by ensuring that students who come into the program have the foundational educational background necessary for successfully launching into the doctoral program. Where there are deficits, make sure that early in the program they have opportunities to address those gaps through additional training. In addition, all students need clear orientation to the demands of doctoral study and guidance on how to navigate the program successfully. How is this provided at your school?
   - **Program structure – key skills taught and evaluated:** As described in "B" above, many programs are developing more structure to what they require of students, using required seminars or courses to ensure all students learn the foundational knowledge and skills necessary for successful research and writing. These skills are intentionally taught and evaluated along the way, ensuring students are prepared for the independent work needed in their research projects.
   - **Increase structure and support during dissertation phase:** Students may be technically prepared for their dissertation work, but may struggle with confidence as they work through the hard process of finding and evaluating resources and writing clearly and persuasively. The ongoing, regular interaction

with their dissertation supervisor is critical to address this, and regular peer interaction can also be valuable. Seminars or colloquy where students share their work and give feedback to one another can make a big difference in the perseverance of students.

6. **Are you concerned about helping students access recent and relevant resources for their research?** It would be quite rare for any one educational institution to have all of the resources a doctoral student would need to complete their final research project. It is much more common that resources outside of the institution must be identified and accessed. What steps can your school take to ensure students gain access to the kinds of resources they need?
   - **Advocacy for doctoral research support:** Who is advocating for developing institutional resources needed to support doctoral student scholarship (both print and electronic access)? Given the limited resources each educational institution faces, how is support for the needs of doctoral students shown?
   - **Library staff training:** As important as access to resources is, so is having library staff members who are equipped to support doctoral students in their research efforts. This requires additional training beyond basic library maintenance. If this has not yet happened, how might it be provided?
   - **Access is more critical than on-campus holdings:** It is important that schools cultivate the kinds of partnerships with other institutions that help doctoral students gain access to a wide range of resources for their research beyond what their own school may have. With many students studying at a distance, electronic journals and books are becoming more important, as well as the scanning of documents for electronic sharing. In light of the doctoral program's areas of focus, schools must think creatively about how to help students gain access to outside resources to support their study.
   - **Diverse models of outside study:** Finally, some institutions have formalized arrangements with other schools with strong resource holdings to have their students spend a period of time studying at those institutions. Whether for a few weeks, months, or even a year, partnerships with other institutions can open opportunities for doctoral students to access resources to support their research efforts. These options are worth exploring.

7. **Are you concerned about providing quality supervision and evaluation of students' research efforts?** Since the research project is often the most important piece in the evaluation of students' work and whether or not they will receive the doctoral degree, it is important that they are provided with the guidance needed to do their best in their research efforts. In addition, as these projects are completed, there need to be clear evaluation procedures in place that ensure fair assessment of their work and feedback to guide them to the successful completion and publication of their work.
   - **Preparing faculty to supervise doctoral students:** We sometimes assume that because a faculty member has completed a dissertation, they know how to guide someone else through that same process. This is seldom the case. There are skills, strategies, and tasks that must be learned to guide another researcher well. Faculty need basic training and mentoring as research supervisors. How is

this being provided at your school? (Note: Langham has a book on this topic, and ICETE Academy has courses available on supervising student researchers.)

- **Monitoring faculty workloads:** Doctoral student research supervision takes significant time investment and cannot just be added to an already full workload. As faculty are assigned doctoral students, adjustments need to be made regarding other responsibilities they carry to ensure they can provide quality supervision to their research students. This is critical for student progress and success.
- **Dissertation supervisory teams:** Rather than having just one faculty member guide the student through the dissertation process, it can be beneficial to the student, and to the faculty, to have a team of two or three faculty who do this. Students benefit from receiving feedback from different perspectives, and faculty learn from one another as they work together to guide students in their research, developing a more common expectation of what students should achieve.
- **Evaluation models:** The final assessment of a student's research project is done in different ways in different countries. In each case, the goal is to have a fair and impartial assessment of the student's research carried out leading to both "formative assessment" (i.e., what is needed to bring this project to a successful conclusion before it is published) and "summative assessment" (i.e., has the student completed a sound research project that adds in a significant way to the discipline? Is it strong enough to award the doctoral degree once any final minor revisions are completed?) Current assessment procedures should be evaluated to ensure that the evaluation of students' work is fair and impartial and also formative, not just summative.
- **Standardizing feedback:** Increasingly, educators are striving to identify the critical elements of the evaluation of student work and to develop some more standardized, objective feedback processes. It can be worth having faculty work together to develop a "rubric" for use in providing feedback to students regarding their dissertation work along the way, ensuring all critical issues have been addressed as well as possible leading up to the final evaluation experience.

8. **Are you wondering whether to offer the Ph.D. degree, or some other "professional" doctoral degree?** Over the last 15-20 years, there has been rapid growth internationally in offering professional doctoral programs, not just the Ph.D. In the fields of education (Ed.D.) psychology (Psy.D.), health (D.P.N., D.P.T.), business (D.B.A.), and ministry (D.Min.), to name a few, and more generally with the D.Prof. in the UK, professional degree programs have grown and become part of the credentialling of professionals in different fields of practice. As you consider the needs of the church within your region, and the kinds of doctoral programs available, what is the current need, and what kind of program would best equip people to address those needs? The Ph.D. program is excellent for certain kinds of tasks and needs, but is not necessarily the best the model to use in addressing the wide range of possible needs. We have to be able to assess the need for professional leadership, not just academic expertise, and be open to the value of professional degree options. This varies by region of the world, but it is a trend worth monitoring and

considering as we seek to strengthen the church in its impact for God's Kingdom purposes.

Final Word

It is my hope that this summary review of trends and developments in doctoral education internationally will inform our efforts to foster the development of strong doctoral programs in ICETE affiliated institutions. I invite feedback on how to strengthen this paper, and what any "next steps" might be to help schools think through and respond to these issues in their own context. Feel free to contact me at: kevin.lawson@biola.edu

Appendix: Comparison of British, German, and American PhD Program Approaches

Kevin E. Lawson, 10/30/2021

Program Aspect	German Doctoral Programs	UK Doctoral Programs	USA Doctoral Programs
Administration Responsibility	Faculty board(s), not the Graduate School	Centralised Graduate School	Faculty board(s)
Minimum prior Qualification	Masters degree in field of study, with prior research training	Masters in most disciplines	Masters degree
Application and Review	By research student and prospective supervisor. Register the research project with the the faculty board	Students apply to the specific research degree programme	Students apply to the specific research degree program
Time of Admission	No formal registration dates for PhD research	Admission follows the academic year	Admission follows the academic year
Tuition Fees	No tuition fees for PhD study	Tuition fees charged for both coursework and dissertation	Tuition fees charged for both coursework and dissertation
Program Duration	No strict formal limit	Formally three years, extensions and write up period regulated	Most have an upper limit (7 yrs?)
Coursework	PhD coursework not mandatory, highly individualized (some programs now have structured coursework)	PhD teaching programme is structured and formalized as a specific PhD study course (structured amount varies)	PhD coursework may have core and elective components
Supervision/ Supervisors	Only by Full Professors, who can supervise any number. (Not part of their teaching load, but helps with their research)	By any research-active faculty qualified to PhD level. Mandatory training and mentoring for new supervisors. Limit of eight	By any research-active faculty qualified to PhD level. Training and mentoring vary. Limits may vary
Progress Monitoring	Independently designed between PhD candidate and professor, Custom made progress reports	PhD supervision formalized with documentation of supervision and PhD progress	Varies, depending on approach of the faculty oversight group
Intermediary Exams	None	Begin as MPhil. End of first year, evaluation for formal progression to PhD status	Generally, a comprehensive exam or portfolio assessment after coursework is completed

Program Aspect	German Doctoral Programs	UK Doctoral Programs	USA Doctoral Programs
Student Status	Most are employed by the school as research/teaching staff. They conduct their research part-time	Registered as full- or part-time students in a programme. Must secure permission to take on outside work	Registered as full- or part-time student. Able to work if desired without needing permission
Ethical Approval of Empirical Research	Only needed for experimental research involving humans or animals	Needed for any research with humans (qualitative/quantitative)	Needed for any research with humans (qualitative/quantitative)
Dissertation Review	By supervisor and another reviewer not involved in the research effort	Strictly by two external reviewers (outside the school, no ties)	Often by supervisor and other dissertation committee members. May include outside reviewer
Examination/Viva	Public disputation, exam board of more than two profs, sometimes others, including the supervisor	Viva by two external reviewers, supervisor can be present if student desires, but does not play an active role in the exam	Defense, tends to be public, with dissertation committee members. Sometimes may include external reviewer
Dissertation Grading	Grade of dissertation and the examination: non sufficit, rite, cum laude, magna cum laude, Summa cum laude	Pass/fail system, viva can lead to required revisions before final pass	Pass/fail system, defense can lead to required revisions before final pass
Public Access to the Dissertation	Dissertation and reviews are made accessible to faculty members before the disputation. Dissertation must be published in some form.	No mandatory publication	No mandatory publication

Sources: Leitlinien zur Promotionnskultur, Humboldt-Universität (2012); KCL (2014b, 2014c).

Note: This comparison of common approaches to doctoral education is adapted from one published by Wolfgang Deicke, Johannes Moes, and Johannes Siemens (2016). Collision and coalescence – German and British cultures in doctoral education. In P. Blessinger and D. Stockley (Eds.), *Emerging directions in doctoral education* (*Innovations in Higher Education Teaching and Learning*, Vol. 6, pp. 149-169). Emerald Group Publishing Ltd. In their article they compared the two doctoral education cultures of a university in Germany and a university in England who were engaged in a joint PdD agreement. I have adapted their presentation and added a third column to address a typical doctoral education culture for PhD programs in the U.S.A.

German (European) Paradigm: Paid researcher apprentice, junior colleague learning the business
UK & USA Paradigm: Paying advanced student, gaining entry to the profession

APPENDIX B: Comparison of Research Doctorates (PhD), Professional Doctorates, And Doctor of Ministry Programs

Kevin E. Lawson, 10/30/2021

Comparison	PhD – Research Doctorate	DProf – Professional Doctorates	DMin – Doctor of Ministry
Program Focus:	Discipline development *"Apprentice Researchers"*	Student development *"Experienced Practitioners"*	Student & ministry practice development *"Experienced Ministry-Practitioners"*
Career focus:	Career researchers, teachers Entry into academia *"Professional Researchers"*	Career needs of practicing professionals, integrating work with study, advancement *"Researching Professionals"*	Advanced development of ministers integrating study with ministry *"Reflective Professionals"*
Goal of Research:	Contribution to knowledge of field Contribution to theory Wide dissemination of research	Contribution to knowledge of professional practice, to enhance practice	Contributing to knowledge of ministerial practice, to nurture reflective practice and enhance both personal and ministry development
Research Type:	Original investigation to gain new knowledge and understanding	Original investigation to gain new knowledge with practical aims	Varies: Action/Field research to gain new knowledge for ministry practice
Research Focus:	Address gap in the research literature in a subject discipline (narrow focus)	Address a topic that relates to the student's field of professional practice (problem oriented)	Address a topic/issue relevant to the student's field of ministry practice (problem/need oriented)
Research Starting Point:	Start with literature review to identify gap (what is known)	Start with a problem in professional practice (what is not known)	Start with a problem/need in professional practice (what isn't known)
Intended Learning Outcomes:	Develop capacity to make significant original contribution to knowledge	Develop capacity to make a significant original contribution to knowledge of professional practice, personal development	Develop capacity for effective ministry leadership, contribute to knowledge of ministry practice, personal development
Admission Requirement:	Masters degree with high grades (may have integrated MA & PhD)	Masters degree AND significant professional experience	Masters degree AND significant ministry leadership experience
Program Format:	Individual pursuit of study, semester-length courses, open-ended duration	Cohorts of students, structured course plan, fixed duration	Cohorts of students, structured course plan, fixed duration, minimal residential

(Table continued)

Comparison	PhD – Research Doctorate	DProf – Professional Doctorates	DMin – Doctor of Ministry
Relation to Experience:	Pre-service training for future researchers/academics (Need employment?)	In-service training for established professionals (profess. develop.) (Already employed)	In-service training for established ministry leaders (professional development) (Already employed)
Mode of Study:	Full-time (historically, less so now)	Part-time	Part-time
Final Project:	Written dissertation and defense (3-Research Article model growing)	Varies considerably: shorter papers, portfolio of projects, smaller scale research project, published papers	Varies considerably: action research, evaluation research, theological reflection, small scale research project, published papers/book
Assessment:	Public defense of dissertation (Rubric assessments of PLOs?)	Continuous assessment through coursework, plus final project	Continuous assessment through coursework, plus final project
Disciplines of Study:	Tends to focus in one discipline area, one field of study	May draw on multiple disciplines and focus on their integration and application to work issues	May draw on multiple disciplines and focus on their integration and application to ministry issues

This comparison chart was first compiled with a focus on PhD and Professional Doctorate programs in 2017 from the following publications:

Bourner, T., Bowden, R., and Laing, S. (2001). Professional doctorates in England. *Studies in Higher Education, 26*(1), 65-83.

Gill, T. G., and Hoppe, U. (2009). The business professional doctorate as an informing channel: A survey and analysis. *International Journal of Doctoral Studies, 4,* 27-57.

Schildkraut, J., and Stafford, M. C. (2015). Researching professionals or professional researchers? A comparison of Professional Doctorate and PhD programs in criminology & criminal justice. *American Journal of Criminal Justice, 40*, 183-198.

Taylor, A. (2007). Learning to become researching professionals: The case of the Doctorate of Education. *International Journal of Teaching and Learning in Higher Education, 19*(2), 154-166.

The third column, on the Doctor of Ministry degree program, was added in October, 2021.

Bibliography: Recent Resources on Doctoral Education Development Internationally

(Note: All of the items below were reviewed in the development of this paper. This is a working document, and it is not in precise APA format.)

Acosta, O., & Jorge, C. (2014). The emergence of doctoral programmes in the Colombian higher education system: Trends and challenges. *Prospects, 44*(3), 463-481.

Altbach, P. G. (2007). Doctoral education: Present realities and future trends. In *International handbook of higher education* (pp. 65-81). Springer, Dordrecht.

Altbach, P. G. (2009). One-third of the globe: The future of higher education in China and India. *Prospects, 39*(1), 11.

Archibald, D. (2011). The emergence of the nontraditional doctorate: A historical overview. *New Directions for Adult and Continuing Education, 2011*(129), 7-19.

Asongu, S. A., & Nwachukwu, J. C. (2018). PhD by publication as an argument for innovation and technology transfer: With emphasis on Africa. *Higher Education Quarterly, 72*(1), 15-28.

Ayiro, L. P., & Sang, J. K. (2011). The award of the PhD degree in Kenyan universities: a quality assurance perspective. *Quality in Higher Education, 17*(2), 163-178.

Bao, Y., Kehm, B. M., & Ma, Y. (2018). From product to process. The reform of doctoral education in Europe and China. *Studies in Higher Education, 43*(3), 524-541.

Bednyi, B. I., Rybakov, N. V., & Sapunov, M. B. (2017). Doctoral education in Russia in the educational field: an interdisciplinary discourse. *Sociological Studies, 9*(9), 125-134. [Available in Russian]

Biltzer, E. M. (2012). Best practices for the research doctorate? A case for quality and success in knowledge production. *South African Journal of Higher Education, 26*(6), 1182-1199.

Backhouse, J. P. (2009). Doctoral education in South Africa: Models, pedagogies and student experiences. *Unpublished PhD thesis, University of the Witwatersrand, Johannesburg.*

Blackman, T. (2016). The professional doctorate and the 21st century university. Work Based Learning E-journal 6(1), 1-7. https://wblearning-ejournal.com/currentIssue/1_Tim_Blackman_Professional_Doctorates.pdf

Bogle, D. (2013). *Good practice elements in doctoral training*. Advice Paper. League of European Researchers. http://www.ub.edu/escola_doctorat/sites/default/files/internacionalitzacio/LERU_good_practice_doctoral_training_final.pdf

Bogle, D. (2017). 100 years of the PhD in the UK. https://www.vitae.ac.uk/news/vitae-blog/100-years-of-the-phd-by-prof-david-bogle

Carnegie Project on the Education Doctorate. (2019). *Education doctorate definition and working principles*. https://www.cpedinitiative.org/the-framework

Chatterjea, A., & Moulik, S. P. (2006). *Doctoral education and academic research in India.* CHERI Working Paper #87. Cornell University, ILR School site. http://digitalcommons.ilr.cornell.edu/workingpapers/65/

Chien, C. L., & Chapman, D. W. (2014). Graduate education in Malaysia and Thailand. *International Higher Education, 76*, 20-22.

Christensen, K. K. (2005). *Doctoral programs for the European knowledge society (the Salzburg principles)*. Report from Bologna seminar. Salzburg: European University Association Council for Doctoral Education. http://www.eua.be/eua/jsp/en/upload/Salzburg_Report_final.1129817011146.pdf

Costley, C., & Lester, S. (2012). Work-based doctorates: Professional extension at the highest levels. *Studies in Higher Education, 37*(3), 257-269.

Craswell, G. (2007). Deconstructing the skills training debate in doctoral education. *Higher Education Research & Development, 26*(4), 377-391.

Cross, M., & Backhouse, J. (2014). Evaluating doctoral programmes in Africa: Context and practices. *Higher Education Policy, 27*(2), 155-174.

Cyr, T. & Muth, R. (2006). Portfolios in doctoral education. In P. Maki & N. Borkowski (Eds.), *The assessment of doctoral education: Emerging criteria and new models for improving outcomes* (pp. 215-237). Stylus Publishing, LLC.

De Rosa, A. S. (2008). New forms of international cooperation in doctoral training: internationalisation and the international doctorate–one goal, two distinct models. *Higher Education in Europe, 33*(1), 3-25.

Delany, D. (2009). *A review of the literature on effective PhD supervision*. Center for Academic Practice and Student Learning. Trinity College Dublin. https://www.tcd.ie/CAPSL/assets/pdf/Academic%20Practice%20Resources/Effective_Supervision_Literature_Review.pdf

Denicolo, P. M., & Park, C. (2013). Doctorateness–an elusive concept? In K. Michael & P. M. Denicolo (Eds.), *Critical issues in higher education* (pp. 191-197). Sense.

Devos, A., & Somerville, M. (2012). What Constitutes Doctoral Knowledge? Exploring Issues of Power and Subjectivity in Doctoral Examination. *Australian Universities' Review, 54*(1), 47-54.

Dobson, I. R. (2012). PhDs in Australia, from the beginning. *Australian Universities' Review, 54*(1), 94.

Enders, J. R. (2004). Research training and careers in transition: a European perspective on the many faces of the Ph. D. *Studies in continuing education, 26*(3), 419-429.

Fallenius, A. M. (1996). Research capacity building in developing countries: Some comments based on SAREC's experience. In J. Gaillard (Ed.), *International Scientific Cooperation* (pp. 101-106). L'institut de Recherche Scientifique Pour le Développement.

Garwe, E. C. (2015). The status quo of doctoral education in universities in Zimbabwe. *Journal of studies in education, 5*(3), 23-37.

Golde, C. M., & Dore, T. M. (2001). *At cross purposes: What the experiences of today's doctoral students reveal about doctoral education*. Pew Charitable Trusts.

Green, P., & Usher, R. (2003). Fast supervision: Changing supervisory practice in changing times. *Studies in Continuing Education, 25*(1), 37-50.

The Group of Eight. (2013). *The changing PhD*. Discussion Paper, The group of eight house. Turner ACT. https://go8.edu.au/oldcontent/sites/default/files/docs/the-changing-phd_final.pdf

Guthrie, J. W. (2009). The case for a modern Doctor of Education degree (Ed. D.): Multipurpose education doctorates no longer appropriate. *Peabody Journal of Education, 84*(1), 3-8.

Hardre, P. L., & Hackett, S. (2015). Defining the graduate college experience: What it "should" versus "does" include. *International Journal of Doctoral Studies, 10*, 57-77.

Hayward, F. (2012). Graduate education in sub-Saharan Africa: Prospects and challenges. *International Higher Education, 66*, 21-22.

Herman, C. (2017). Looking back at doctoral education in South Africa. Studies in Higher Education, 42(8), 1437–1454. https://doi.org/10.1080/03075079.2015.1101756

International Association of Universities. (2011). *Changing nature of doctoral studies in sub-Saharan Africa: Challenges and policy development opportunities at six universities in sub-Saharan Africa*. https://www.idea-phd.net/images/doc-pdf/IAUFinalReportDoctoralProgrammes.pdf

International Association of Universities & Associació Catalana D'Universitats Públiques. (2012). *IAU-ACUP International seminar on innovative approaches to doctoral education and research training in sub-Saharan Africa.* http://www.acup.cat/sites/default/files/final-report-iau-acup-seminar-innovative-approaches-doctoral-education_1.pdf

Johnson, E. M. (2014). Doctorates in the dark: Threshold concepts and the improvement of doctoral supervision. *Waikato Journal of Education, 19*(2), 69–81. https://doi-org.ezproxy.biola.edu/10.15663/wje.v19i2.99

Jones, M. (2013). Issues in Doctoral Studies-Forty Years of Journal Discussion: Where have we been and where are we going? *International Journal of Doctoral Studies, 8*, 83-104.

Jørgensen, T. E. (2012). *CODOC—Cooperation on doctoral education between Africa, Asia, Latin America and Europe*. European University Association.

June, A. W. (2010, December 10). Rutgers program helps Ph. D. students learn the ropes of academic leadership. *The Chronicle of Higher Education.* https://www.chronicle.com/article/rutgers-program-helps-ph-d-students-learn-the-ropes-of-academic-leadership/

Kehm, B. M., Shin, J. C., & Jones, G. A. (2018). Conclusion: Doctoral education and training—A global convergence? In J. C. Shin, B. M. Kehm, & G. A. Jones (Eds.), *Doctoral education for the knowledge society. Convergence or divergence in national approaches.* (pp. 237-255). Springer.

Khodabocus, F. (2016). Challenges to doctoral education in Africa. *International Higher Education*, *85*, 25-27.

King's College London. (2016). *Core code of practice for postgraduate research degrees.* The Postgraduate & Graduate School Support Team. Academic session 2016-2017. https://www.kcl.ac.uk/governancezone/Assets/Research/Postgraduate%20Research,%20Core%20Code%20of%20Practice%202016-17.pdf

Kot, F. C., & Hendel, D. D. (2012). Emergence and growth of professional doctorates in the United States, United Kingdom, Canada and Australia: a comparative analysis. *Studies in Higher Education, 37*(3), 345-364.

Lee, A. (2007). Developing effective supervisors: Concepts of research supervision. *South African Journal of Higher Education, 21*(4), 680-693.

Lee, A. (2008). How are doctoral students supervised? Concepts of doctoral research supervision. *Studies in Higher Education, 33*(3), 267-281.

Lofthouse, R. (2017, November 28). 100 years of the DPhil. *University of Oxford*. https://www.alumni.ox.ac.uk/quad/article/100-years-dphil

MacGregor, K. (2013, December 15). Emerging ideas for building PhD training capacity. *University World News.* http://www.universityworldnews.com/article.php?story=20131215083542491

MacGregor, K. (2013, November 2). Where to from here for the African PhD? *University World News.* https://www.universityworldnews.com/post.php?story=20131102155412705

Maloshonok, N., & Terentev, E. (2019). National barriers to the completion of doctoral programs at Russian universities. *Higher Education, 77*(2), 195-211.

Maxwell, T. (2003). From first to second generation professional doctorate. *Studies in Higher Education, 28*(3), 279. https://doi-org.ezproxy.biola.edu/10.1080/03075070309292

McAlpine, L. (2017). Building on success? Future challenges for doctoral education globally. *Studies in Graduate and Postdoctoral Education, 8*(2), 66-77. https://doi.org/10.1108/sgpe-d-17-00035.

McCook, A. (2011). Rethinking PhDs. *Nature, 472*, 280-282.

Michael, S. O., & Balraj, L. (2003). Higher education institutional collaborations: An analysis of models of joint degree programs. *Journal of Higher Education policy and management, 25*(2), 131-145.

Mohan, V. V. (2010). Mentoring doctoral students in a developing society. *Issues in Informing Science and Information Technology, 7*, 249-264.

Molla, T., & Cuthbert, D. (2016). In pursuit of the African PhD: A critical survey of emergent policy issues in select sub-Saharan African nations, Ethiopia, Ghana and South Africa. *Policy Futures in Education, 14*(6), 635-654.

Mowbray, S., & Halse, C. (2010). The purpose of the PhD: Theorising the skills acquired by students. *Higher Education Research & Development, 29*(6), 653-664.

Muriisa, R. K. (2015). The state of doctoral education in social sciences in Uganda: Experiences and challenges of doctoral training at Mbarara University of Science and Technology 2003-2010. *Journal of Education and Practice, 6*(10), 204-213.

Mutula, S. M. (2009, September, 9-10). *Challenges of postgraduate research: Global context, African perspectives.* The 10th DLIS Annual Conference, University of Zululand, Richards Bay. http://www.lis.uzulu.ac.za/2009/Mutula-UZ2009DLISPaper.pdf

Nasiri, F., & Mafakheri, F. (2015). Postgraduate research supervision at a distance: A review of challenges and strategies. *Studies in Higher Education, 40*(10), 1962-1969.

Nerad, M. (2004). The PhD in the US: Criticisms, facts, and remedies. *Higher Education Policy, 17*(2), 183-199.

Nerad, M. (2008). United States of America. In M. Nerad & M. Heggelund (Eds.), *Toward a global Phd?: Forces and forms in doctoral education worldwide* (pp. 278-297). University of Washington Press.

Nerad, M. (2010). Globalization and the internationalization of graduate education: A macro and micro view. *Canadian Journal of Higher Education, 40*(1), 1-12.

Nerad, M. (2012). Conceptual approaches to doctoral education: A community of practice. *Alternation, 19*(2), 57-72.

Nerad, M. (2015). Professional Development for Doctoral Students: What is it? Why Now? Who does it?. *Nagoya Journal of Higher Education, 15*, 285-318.

Nyquist, J. D. & Woodford, B. J. (2000). *Re-envisioning the Ph.D: Funded by the Pew Charitable Trusts.* Center for Instructional Development and Research, University of Washington. https://depts.washington.edu/envision/resources/ConcernsBrief.pdf

Obamba, M. O. (2017). *Constructing "innovative" doctorates: Scoping evidence on doctoral structure and practices from six African countries.* Partnership for African Social and Governance Research. https://www.pasgr.org/wp-content/uploads/2017/10/Constructing-innovative-doctorates_Scoping-evidence-on-doctoral-structure-and-practices-from-six-African-countries.pdf

Park, C. (2005). New variant PhD: The changing nature of the doctorate in the UK. *Journal of higher education policy and management, 27*(2), 189-207.

Park, C. (2007) *Redefining the doctorate.* Discussion Paper. Higher Education Academy, York, UK.

Quintana, I. & Calvet, A. (2012, September). *Current situation and future challenges of PhD studies in sub-Saharan Africa.* Catalan Association of Public Universities (ACUP). http://www.acup.cat/sites/default/files/currentsituationandfuturechallengesofphdstudiesinssaen.pdf

Ryan, J. (2012). Internationalisation of Doctoral Education: Possibilities for New Knowledge and Understandings. *Australian Universities' Review, 54*(1), 55-63.

Shin, J. C., Postiglione, G. A., & Ho, K. C. (2018). Challenges for doctoral education in East Asia: a global and comparative perspective. *Asia Pacific Education Review, 19*(2), 141-155.

Storey, V. A., & Maughan, B. D. (2014). *Beyond a definition: Designing and specifying Dissertation in Practice (DiP) models.* The Carnegie Project on the Education Doctorate.

Tampayeva, G. Y. (2015). Importing education: Europeanisation and the Bologna Process in Europe's backyard—The case of Kazakhstan. *European Educational Research Journal, 14(*1), 74-85.

Taylor, S. E. (2012). Changes in doctoral education. *International Journal for Researcher Development, 3*(2), 118-138. https://doi.org/10.1108/17597511311316973.

Wasley, P. (2008). Portfolios are replacing qualifying exams as a step on the road to dissertations. *Chronicle of Higher Education, 54*(44), A8-A8.

Weisbuch, R. & Cassuto, L. (2016). *Reforming Doctoral Education, 1990 to 2015: Recent Initiatives and Future Prospects.* https://mellon.org/media/filer_public/35/32/3532f16c-20c4-4213-805d-356f85251a98/report-on-doctoral-education-reform_june-2016.pdf

Wildy, H., Peden, S., & Chan, K. (2015). The rise of professional doctorates: case studies of the Doctorate in Education in China, Iceland and Australia. *Studies in Higher Education, 40*(5), 761-774.

Wisker, G., & Kiley, M. (2014). Professional learning: lessons for supervision from doctoral examining. *International Journal for Academic Development, 19*(2), 125-138.

Yang, R. (2012). Up and coming? Doctoral education in China. *Australian Universities' Review, 54*(1), 64-71.

Zusman, A. (2013). Degrees of change: How new kinds of professional doctorates are changing higher education institutions. *Research & Occasional Paper Series: CSHE.*8.13. Center for Studies in Higher Education.