# The Improvement Science Dissertation in Practice
# Book Review

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**Jill Alexa Perry, Debby Zambo and Robert Crow: The Improvement Science Dissertation in Practice: A Guide for Faculty, Committee Members, and their Students. Maine: Myers Education Press, 2020. 180 pp. Paperback: $29.95 ISBN 9781975503208**

The authors begin by contextualizing the continual refinement of Education Doctorate (EdD) programs, in *Designing a Professional Practice Doctorate* (Chapter 1). Specifically, the focus is on those programs that have been connected to the Council of Graduate Schools (CGS) and, more recently, the Carnegie Project on the Education Doctorate (CPED). The authors' historical discussion makes it clear that there has been institutional disagreement about what to call the "dissertation," how to structure it, and how to differentiate it from a PhD experience. Over time, general consensus was reached on central tenets. The final product should: address a problem of practice (POP); be applied in nature; and, be developed throughout the doctoral program, rather than after completion of coursework.

During the past decade, these tenets have generated a diverse collection of final products from EdD programs that reflects the needs of students in their roles as scholar-practitioners. As a result, these products also have led to program redesigns to better support students' varied goals. The CPED tenets, as well as CPED members' guiding principles for program design, co-occurred with development of the Carnegie Foundation's Six Core Principles of Improvement. The authors' cross-lacing of CPED and Improvement Science (IS) principles provides the foundation for the balance of this book that focuses on the Improvement Science Dissertation in Practice (ISDiP).

The book describes an evolutionary sequence of the research experience for students conducting an ISDiP. Thus, the book is helpful to faculty who are new to guiding the ISDiP experience for a graduate student. It is also a pragmatic text for faculty in EdD programs that are undergoing redesign. Finally, it is a resource for students who are beginning their ISDiP experience and learning about applied research.

The next chapter leads us into this process. It is aptly called *New Mindsets and a New Dissertation Frame* (Chapter 2). Unlike a PhD dissertation, the focus of an ISDiP will not directly mirror the work of a major professor. Rather, the focus is on the challenges that doctoral students face in their daily work. This distinction should be discussed in the first semester of the doctoral program and form the backdrop of visualizing an applied research experience.

As students progress during subsequent semesters, they continue to identify and hone their own *Actionable Problems of Practice* (Chapter 3) and are encouraged to focus on a specific user-centered aspect. They evaluate the feasibility of their studies with faculty. Students also develop the skills necessary to become more strategic change agents. Faculty are focused on practice and the creation of change agent graduates from their programs.

Consequently, the *Reviewing the Literature: A Critical Skill* (Chapter 4) involves both scholarly *and* practitioner-based educational resources that inform and frame the problem. This supports the development of a theory of improvement. Students begin to connect components that will effect change and guide their analyses in their ISDiPs. They also begin to distinguish themselves as having a unique point of view on a problem of practice.

*Driver Diagrams and a Theory of Improvement* (Chapter 5) explains how faculty can help students to organize components, prioritize actions, and make their thinking processes explicit. In combination with Chapter 6, we foresee these chapters as frequently consulted texts because of the procedures and tools offered.

*Developing Improvement Measures* (Chapter 6) engages scholars in determining the types of measures that are applicable to their research questions. Outcome, driver, process, and balance-measures each perform a function within implementation studies. Determining when to engage which measure under what circumstances is key to the successful completion of an ISDiP. Additionally, this chapter supports faculty to develop alternative course content. Specifically, alternative options in relation to traditional research methods are discussed, while attending to the importance of maintaining the rigor and discipline of the profession.

Then, in *Testing the Theory/Change and Final Write-up* (Chapter 7) students and faculty are guided in mapping out the phases of the PoP research to produce the various facets (e.g., chapters) for their ISDiP. This experience prepares students to

adhere to a process. It also enables them to be more successful change agents after graduation.

The book ends with *Implications: Challenges and Lessons Learned* (Chapter 8) in which recognition of the speed of change (or lack thereof) in higher education is highlighted and the work of faculty who are redesigning programs in CPED-influenced institutions is discussed. Many of those redesigns begin with the end goals in mind. This has the effect of prioritizing admission. Specifically, programs are backwards mapping from the dissertations to the admissions process—from admitting students who already identify with a problem of practice and helping engage them in improvement science techniques throughout the program. Redesign also helps faculty to better align coursework with ISDiPs, which in turn supports students to generating components of the ISDiP throughout coursework and practical experiences.

For whom is this book most helpful? The authors provide it as a guide for faculty, committee members, and students. As a faculty member who leads a CPED-influenced EdD program, I can wholeheartedly attest to the book's value to all those individuals. As our programs, coursework, and research expectations focus more on Improvement Science and user-centered problems of practice, we are often tasked with adjusting our thinking as faculty members—from a self-determined research agenda to an outward-facing response to the needs of practicing educators. This adjustment has occurred relatively quickly, given the reputation of universities being slow to change; it is helpful to have a text that provides both the rationale for the adjustments and a blueprint from which programmatic change can be generated.

Moreover, we often supplement doctoral committees with both faculty members who are accustomed to the PhD process and outside members who are in practice. This is beneficial to the student and often necessary in EdD programs with few full-time faculty. These outside members would benefit from this book that puts EdD research into perspective and explains the urgency to address problems of practice. For some this is a different approach to research. With this book we can proactively reduce misunderstandings about the approach, relevance, and rigor of the ISDiP. By extension, we can better engage non EdD faculty in practitioner-based research, cross-disciplinary approaches, and grant-funded projects that are Improvement Science-based.

From a student perspective, the book is a map for their EdD experience and a future resource after graduation. Specifically, this is not only a volume that students will use in response to problems of practice during their program, it is a volume that they will likely use to respond to problems of practice throughout their career. While in our program, students have commented on the utility of the text and where it might be consulted in their studies. The chapter components, examples, and tools are relevant for their daily work.

We also see an additional audience—that of administrators and deans, superintendents and principals, and directors of educational non-profits and organizations. As with our doctoral students, they will find the concepts and tools useful in managing change projects, especially as the IS approach probably was not taught when they were in college.

When should the book be introduced to students? We recommend reading the book at the beginning of the program or the semester before entry to help them develop an overview of the process, which is described in a conversational manner with appropriate context. This helps them to understand why we practice certain activities in a specific order to become better improvement science practitioners. Students will still struggle, such as when defining their PoP. However, this book places that struggle in the context of a process and with an awareness of various program components. Also, once students understand the process, they can connect their course assignments more fully. This may play a role in moderating the learning process and de-emphasize a rush towards the end.

Concerning the book's resources, process steps, examples, and tools are valuable features that exemplify the components of an ISDiP. They are evident in every chapter, forming a predictable and reassuring narrative. Faculty and students will consult them often. Process steps help the reader to work toward the goal of completing a project—not only the ISDiP but any professional endeavor. The graphic organizer examples help the reader to *see* their new knowledge within a visual structure. Graphic organizers are supported with the text-based examples that can increase understanding. Template tools help the reader to hone their skills in organizing their problem of practice. The chapter summaries and guided questions help the reader to gauge their knowledge and generate discussion in class. Our students have appreciated how the book explicitly connects assignments based on improvement science to their final product, the ISDiP.

Concerning challenges, the authors discuss the essential tension between the dual roles of being a practitioner invested in the success of an intervention and that of the impartial researcher. The authors clarify research positionality for students in EdD programs. Likewise, power and privilege in improvement work are addressed. We recommend that faculty raise awareness of these challenges early, especially when reading Chapter 2, which sets up discussion about the mindset of EdD research.

Another challenge for faculty and students concerns the Plan-Do-Study-Act (PDSA) cycle that is a central principle in IS research. Students in EdD programs are diverse in backgrounds, job positions, positionality in a workplace hierarchy, and job longevity. Sometimes these aspects change during their time in the program. It is our experience that few candidates can conduct a full PDSA cycle for their ISDiP, for reasons that are beyond their control and ours. The ideally situated student, as presented in the comparison of suitability for a PhD program versus an EdD program, does not occur commonly. Many EdD students need the degree to obtain the type of influence that would enable them to complete PDSA cycle research. So what does this mean for development of a research project? The dilemma can be mitigated by devising projects that situate the student in a part of the PDSA cycle and/or embark on qualitative or quantitative research that serves an inquiry that is based in IS (e.g., content analysis, project design, or program evaluation). As a result, students will develop essential habits and professional competencies of an improvement science practitioner and leader.

In fact, we can learn a great deal from students' experiences about how they adapt research projects during the program to fit their professional goals and the requirements of the degree. Often these stories are shared informally or at CPED conferences by recent graduates. We suggest that this book be used to extend that conversation and engage faculty about the variety of doctoral work that can be accomplished and situated within PDSA cycles and an IS framework. Perhaps a subsequent book is needed that connects vignettes of student and faculty experiences in authentic IDSiP situations to each chapter. Did the process go as anticipated and

what adjustments were made, for example? Additional stories from our graduates and faculty would benefit us all.

In summary, the *Improvement Science Dissertation in Practice: A Guide for Faculty, Committee Members, and their Students*, provides a unique addition to the information available for those engaged in ISDiPs. The format is easily accessible; the breadth of the process steps, examples, and tools support both faculty, committee members, and students to deliver improved research products. Consequently, this work has the potential to improve outcomes in practice.

The book can be used as an introductory text for the first class in a program, a reference text for other courses, and a tool to support the design and development of the ISDiP. Additionally, it is a valuable resource for faculty new to the ISDiP process, especially in established EdD programs. It has been recommended to the faculty in our program, and we are incorporating the text into our reading list for students. It is clear already that the guide has helped them to become more organized, think more deeply about their current and future work, and engage better in collaborative action. The simplicity of the use of the six-step process as a frame for the ISDiP, and the practical examples, provide all stakeholders with a sense of hope that these projects can be done and done well.