The Journal of Continuing Higher Education, 58:99–107, 2010

ISSN 0737-7363
DOI: 10.1080/07377361003617368

"Breaking the Mold" in the Dissertation: Implementing a Problem-Based, Decision-Oriented Thesis Project

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Abstract. This article offers lessons from an initiative refashioning the doctoral thesis in an education leadership program. The program serves a practitioner clientele; most are teachers and administrators. The new model for the thesis emphasizes leadership, problem solving, decision making, and organizational improvement. The former model was a traditional research-focused thesis. This article describes the rationale for the change and four features of the new problem-based inquiry model contrasted with the traditional research model. A central challenge of this initiative has been fashioning a model that is authentic problem solving and not merely applied research. Both faculty and doctoral advisees have firmly held assumptions and expectations about the thesis-as-research and limited experience with a problem-solving paradigm. Thus, applying an authentic model of problem-based inquiry to the doctoral thesis confronts significant conceptual and practical challenges.

Introduction: Professional Education Students and Research Preparation Programs

With few exceptions, doctoral students finish with a research study—a dissertation. The format is well known: literature review, research questions, methods, findings, and conclusions. Virtually every doctoral thesis in dissertation abstracts reflects this format and content, irrespective of whether the candidate is headed for academia or not (Adams & White, 1994; Archbald, 2008; Cleary, 2000; Nelson & Coorough, 1994).[1]

Doctoral programs typically consist of courses in two categories: content courses (theory and professional practice) and methodology courses (methods of quantitative and qualitative inquiry). Content courses include foundational, theory, and applied courses (e.g., political theory, social psychology, organizational theory, human resources management, accounting, public relations, econometrics). Methodology courses teach research design, evaluation, statistics, and methods of quantitative and qualitative inquiry. Much of this coursework is dedicated to preparing candidates for the research they will do in their dissertation.

These traditional features of doctoral education prepare students well for scholarly work. However, almost half of the roughly 45,000 students earning doctorates each year in the United States do not end up in academia (Hoffer, Hess, Welch, & Williams, 2007). Many are middle-aged, midcareer professionals. They will work in private, nonprofit, and public sector organizations in fields such as health, education, social services, business management, and public policy. For

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most, their expertise and ambitions will lead them to roles involving planning, problem solving, technological innovation, motivating, and leading. For students not heading for academia but for positions of leadership and management, the traditional "theory and research" orientation of typical doctoral education is arguably less functional and not the most effective form of preparation.

A growing literature is critical of this mismatch between academically oriented doctoral programs and professionally oriented doctoral students (Bourner, Bowden, & Laing, 2000; Braxton, 2005; Cherwitz & Sullivan, 2002; Closson, 2008; Huba, Schub, & Shelley, 2006; Levine, 2005; Savin-Baden, 2004; Shulman, Golde, Bueschel, & Garabedian, 2006; Toma, 2002). Scholars and reformers alike call for adapting curriculum and pedagogy more effectively to the needs of the growing numbers of doctoral students neither seeking nor preparing for scholarly work. Still, one feature of doctoral education remains stubbornly resistant to change: the dissertation. Almost always, it is a research study whether or not the candidate is going to be a researcher.

Purpose

This article offers lessons from my experience as an EdD program coordinator collaborating with program faculty to refashion our doctoral thesis into an authentic problem-based learning experience. Authentic means real, not an academic exercise. Our vision has been to connect the thesis to actual organizational improvement through the candidate's role in leadership, problem solving, and decision making.

Our program's thesis was already "nontraditional" in that candidates' studies aimed at improving practice. The problem was, too often these theses had *very little connection* with leadership, decision making, and the improvement of practice. This concerned us because our students were all full-time practitioners but part-time doctoral students taking classes on nights and weekends. We wanted a more beneficial experience for the candidate and the candidate's organization. We wanted a more productive, more authentic, approach.

This initiative occurred over several years. Our work is still in progress. A central challenge has been overcoming traditional assumptions (among both faculty and students) about the expected features of the thesis-as-research-study. To provide context, let me begin with a brief description of the previous thesis model. I describe it in the present tense because the transition from old to new is occurring at this time.

Precursors to Change

Our education leadership doctoral program has long required (just over 20 years) a thesis intended to be decision-oriented. The candidate should use literature and action research to support recommendations for addressing a problem of practice, a problem of significance in the candidates' workplace or field. This was the model, and it was a sensible idea. The thesis was given a distinctive name to reflect these intentions: "Executive Position Papers." Dean Frank Murray was the impetus for this change—the intent being to distinguish the paper from a traditional thesis. However, despite the intentions and the distinctive name, candidates' theses generally morphed into the standard form of a typical dissertation, though with a concluding chapter presenting recommendations for improvement (Hampel & Kleine-Kracht, 1995).

This model achieved at least one aim: it integrated theory and practice to a greater degree than a "pure" research study. Most candidates do studies related to a need or issue within their organization or workplace. Typically, candidates' theses begin with a review of literature and conclude with findings and recommendations. For instance, a candidate who was a professional in student services examined literature and conducted a series of interviews on peer socialization among adolescent subcultures and the role of peer influences contributing to binge drinking. His thesis culminated with conclusions about socialization pressures and recommendations for freshmen orientation programs, training of counselors, and better options for social engagement.

This thesis was typical. For most candidates, of the total time they spend on their thesis, in my estimate about 70% to 90% of the time is spent doing and writing up the empirical portion of the paper, consumed in methodological details, data collection, and reporting results. Often, however, the research process comes at the expense of thoughtful and detailed analysis of *actual* organizational improvement needs, decision options, and implementation feasibility issues. Typical theses show inadequate attention to problem analysis and lack well-substantiated claims about needs. The result? The thesis reports an empirical study with insufficient practical justification and modest practical value. Still, all of theses end up with a recommendations chapter.

Theses recommendations are typically a chapter of prescriptions for improvement. Because the thesis is viewed largely within the conceptual framework of a research study, typical recommendations resemble those at the end of a consultant's report or journal article with a practical orientation. The recommendations are not targeted for a particular actor, board, or audience in the organization;

rather, because of traditional expectations of what a thesis is, the recommendations are for a generalized readership of academics or professionals in roles like those in the candidate's organization. Because the candidate is writing a thesis for the approval of doctoral committee members who are proxies for a general academic readership, the recommendations adopt the tone and style of scholarly prose.

This is not a criticism of candidates' or faculty advisors' efforts or of the quality of the theses as an academic product. Most theses can fairly be described as the candidate's personal magnum opus on the topic he or she has chosen to investigate. At the same time, most theses are not more than this: they are merely a lengthy, challenging academic exercise. The thesis, conceived fundamentally as a research project, will inevitably shape itself into what academics know best: a scholarly treatise. Again, the issue is not the academic quality of the thesis; rather, it is the very tenuous connection with candidate leadership development and organizational improvement.

Motivated by these concerns, a small group of faculty deliberated over, collaborated on, and fashioned a vision for a more authentic thesis requirement. We agreed (a) that the thesis should not be merely an exercise in inquiry (and is not intended to be a research study), (b) that the thesis should develop the candidate's capacity and expertise for intellectual leadership and organizational problem solving, and (c) that the thesis process and its form should be tailored to maximize its potential to improve practice—not indirectly through a vague "contribution to the literature" but by influencing specific decisions and actions in the candidate's workplace. As described in the following sections, this vision requires rethinking certain traditional assumptions about doctoral coursework and education.

Four Major Changes

This vision is radically different from the thesis-as-research-study model and is not a simple adjustment for faculty and students. We all hold deeply rooted assumptions about the traditional form and purpose of a thesis and, at the same time, have almost no experience with or templates for anything different. It is no simple matter to design a thesis requirement that is both intellectually rigorous and practical and that genuinely connects graduate work to workplace leadership, problem solving, and decision making. We want the thesis experience to benefit both the candidate and the organization. Following, I describe four of the more significant changes from the previous (predominantly a research study) model to the new problem-based decision making model.

Change #1

Research studies begin with theory, curiosity, and questions. The thesis candidate reviews literature and considers what data sources he or she can access. At some point, a topic is chosen and a study is proposed. This characterizes our previous model, though candidates' questions *do* (in most cases) stem from an issue the candidate perceives in his or her professional practice. The new thesis is not built around a research "topic" or "question." The candidate defines and substantiates a real organizational problem, a documentable improvement need.

Defining an organizational improvement problem is wholly different than formulating a research question. Organizational improvement problems are complex, with multiple and uncertain causes and, often, multiple interpretations.[2] Theorists use the term "ill-structured problems" (Jonassen & Hung, 2008; Rittel & Webber, 1973; Savery, 2006; Simon, 1973). They are problems like ineffective personnel evaluation or declining parental involvement or curriculum-assessment misalignments or obstacles to instructional technology utilization or student-on-student physical harassment and intimidation. Schon (1983), for instance, writes:

> In real-world practice, problems do not present themselves to the practitioner as givens. They must be constructed from the materials of problematic situations which are puzzling, troubling, and uncertain. In order to convert a problematic situation to a problem, a practitioner must … make sense of an uncertain situation that initially makes no sense. (p. 40)

The candidate must construct a problem definition, defining a gap between an existing state in an organization and a preferred goal state. This is not an abstract exercise and cannot be done alone. Problem definition requires evidence, logic, and values. As Cuban (2001) notes,

> Defining a problem depends on the perceptions of the person or group that interprets facts showing a discrepancy between what *is* and *what ought to be*. What shapes our perceptions are the previous personal and work experiences that we have had, our beliefs and values, and the position that we have in an organization (and the roles that we are expected to play in the positions) (p. 4)

Coursework early in the EdD program helps students understand the logic and exposition of formulating problem statements.[3] It is important to prepare students early to understand the significance of management guru Charles Kettering's famous adage, "A problem well defined is half solved." We stress that problem definitions take time, sustained inquiry, data, and deliberation to share perceptions, information, and perspectives. Unlike a research proposal, an organizational problem definition is not an abstract formulation.

Change #2

The literature review in a traditional thesis is presented in a chapter. In our new model, literature is used throughout, wherever it is relevant. The process, products, and logic of problem solving are incongruous with the notion of a single "literature review" chapter. As illustrated in Figure 1, problem solving requires organizational learning about current conditions and levels of performance, about casual factors and processes accounting for current states, about decision options and tradeoffs, and about the likely consequences of decisions.

Literature is used in several ways: to furnish analytical concepts, to deepen understanding of causes and consequences, to provide evidence to substantiate claims about causes and consequences, to establish the significance of a problem, to provide models and standards of best practice, to justify the use of specific analytical strategies or decision-making tools, and to provide cases showing what others have done in similar situations in other organizations.

The priority is getting credible information to understand the problem, its causes, possible solutions, and trade-offs connected with different decisions and actions. All of these questions need answers and can be informed by literature. Literature deepens the candidate's knowledge and provides guidance on decisions, but equally essential is local empirical information (from people, databases, documents, etc.).

Change #3

In a research thesis, the epistemology and methods of science govern the collecting, reporting, and interpretation of evidence (Campbell & Stanley, 1963; Popper, 1963; Shavelson & Towne, 2002). Candidates doing research might pose a question like this: Do boys and girls in same-sex coeducational classes differ in perceptions of teachers' encouragement of competitiveness? And they may answer this question in a "results" chapter. Ill-structured problems, in contrast, are not reducible to a single question (in part, illustrated in Figure 1).

Our new thesis reflects an epistemology of decision making. Decision makers always face uncertain and incomplete information (Connolly, Arkes, & Hammond, 2000; March, 1994). This is a defining characteristic of ill-structured problems.

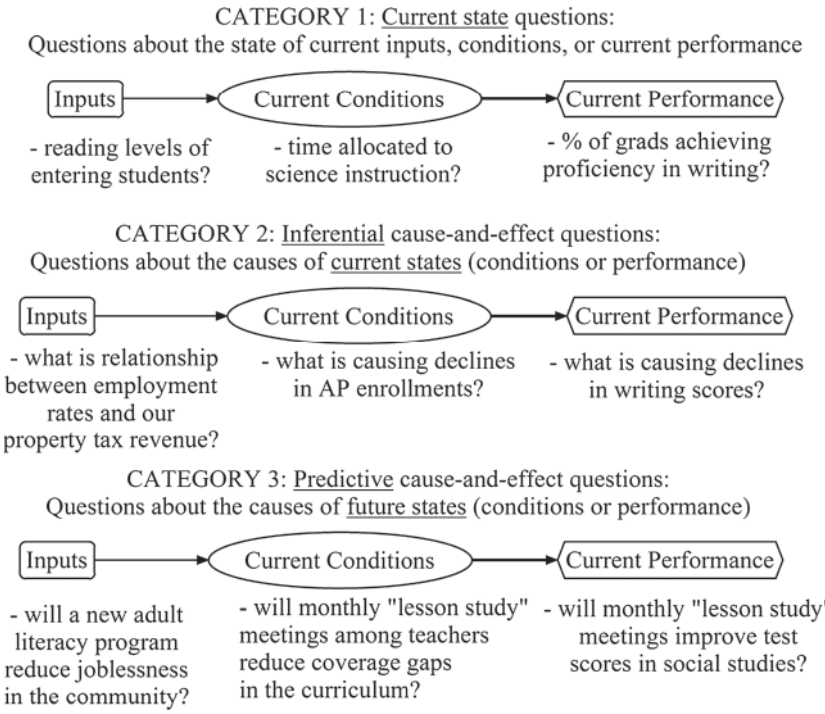
The task facing candidates with the new thesis is to figure out the right questions, gather as much information as feasible, and use this information effectively to guide planning and decision making. Part of decision making is determining types of information needed and weighing the potential value of information against costs incurred in obtaining information. Local action research can fit into this calculus and contribute research-derived evidence, but a candidate also draws on his or her own observations in addition to seeking and analyzing other forms of information, such as from organizational documents or databases or from people in meetings, e-mails, interviews, or surveys. This, unquestionably, is data gathering, but it is not "Research." In research, standards for evidence are stringent, because we seek "truth." In decision making, information needs to be credible, and its utility is determined by its value in reducing uncertainty, understanding current conditions, and improving the outcomes of decisions. In decision making, some information is better than no information.

Change #4

Research aims at generating new knowledge; scholarly publications are the primary vehicle. The standard format of the traditional thesis is four or five chapters—a scholarly monograph. The immediate audience is the dissertation committee, who serve as a proxy for a larger scholarly audience. In processes of organizational improvement, the dissertation is not the most efficient form of communication and influence.

Our program's new thesis departs from the standard monographical format. The new thesis compiles scholarly narrative along with documents for organizational audiences and other artifacts generated as part of the problem solving initiative. The new thesis is intended as a justification, documentation, and an account of leadership and problem solving in practice with the aim of organizational improvement. The thesis includes a narrative for the committee in addition to products developed for actual uses and audiences in or connected to the organization. Thus, for instance, a candidate engaged in a school restructuring initiative might, among other things, do a series of focus groups with community constituencies and then chronicle this in the thesis narrative, appending actual letters and reports to parents.

Figure 1. Three categories of questions in organizational improvement problems.



A Multiyear Process of Change

No innovation materializes fully formed. Our initiative to refashion the thesis did not have a single "start point." As mentioned, one precursor dates to about 1988 when the EdD program adopted language supporting a decision-oriented thesis. This language encouraged faculty advisors and doctoral candidates to tie thesis study to problems of practice and to produce recommendations to improve practice, but the language by itself was not enough to shift the thesis away from its research orientation and produce the four substantive changes described in the preceding section.

About four years ago leadership changes in the program and a series of faculty conversations and meetings gave impetus to the new thesis model. The initial conversations were informal, the type of conversation that emerges at a lunch or during a meeting of four or five program faculty or after a thesis defense when members of the committee converse informally.

These conversations centered on the issue articulated in this article's introduction concerning the mismatch between academically oriented doctoral programs and professionally oriented doctoral students. Some conversations were theoretical; others expressed frustration at large investments of time by both faculty and doctoral candidates engaged in lengthy empirical inquiries, some methodologically quite limited, that were destined to make little or no contribution to scholarship, minimal contribution to candidates' leadership or professional effectiveness, and not enough of a contribution to their workplace.

Conversations led to several open ad hoc meetings to which all faculty were invited to discuss ways to refashion the thesis for EdD students. The main focus was how to make the EdD thesis less about "doing research" and more about organizational problem solving and decision making, about a thesis built less around a "gap in the literature" and more around an actual organizational improvement problem.

I and others made a point to distribute relevant literature and draft memoranda proposing changes and presenting ideas in handouts and graphics. The literature let colleagues realize that other scholars and professional education doctoral programs were grappling with similar issues (Andrews & Grogan, 2005; Malen & Prestine, 2005; Murphy & Vriesenga, 2005). It is easier to depart from a traditional way of doing business knowing that one is not alone on the path of change and that other institutions and scholars elsewhere were similarly engaged.

A philosophical concern faculty wrestled with was whether a formal research study is sine quo non to the doctoral thesis. Or, on the other hand, is the main priority that the candidate engages in disciplined study, reflection, and problem solving? For our PhD program, the dissertation remains firmly in the tradition of publishable scholarly research. However, for the EdD program, given its professional clientele and mission, we took the position that a formal research study is not the only form of intellectual work that can serve as the capstone product. We placed more weight on the value to the candidate and the candidate's organization of engaging in an in-depth study and project aimed at organizational improvement.

Another aspect of the change process was course revision. This was a several year process with work still continuing. Two major tasks included (a) developing a common core of courses for the EdD students to provide appropriate methodological and conceptual preparation for the new thesis model and (b) providing more thesis-oriented preparation earlier in the program so students learn these expectations at the outset and start developing understandings and skills to fulfill these expectations.

The course revision was important. Students enter doctoral programs expecting to do a research study at the end, their dissertation. The dissertation is equated with empirical research. Although most students are unlikely to have read a dissertation, they know it resembles a scholarly publication in form and content, only a lot longer. This is the conception most entering students have, a conception reinforced if, as they progress through coursework, they read only or mainly education research.

This was the situation in our program. In revising first-year courses we added content on professional communications, formulating problem statements, conducting needs assessments, designing action research, understanding organizational data, and using Excel to manage and analyze data and create reports. Formerly, a larger proportion of coursework was based reading lists and class discussion from academic texts and scholarly journals. Now there is more of a balance: courses include both scholarly and applied research readings, and a larger proportion of assignments are linked with students' professional interests and workplace goals.

Our program used to require a conventional textbook-based statistics course. This was replaced with courses that engaged students in analyses of actual school and district data (anonymized, of course) or students collect their own data. Essentially, we traded off coverage for depth, giving up a traditional textbook's broad scope of coverage of myriad statistical topics while increasing the amount of time on fewer topics, doing multiple types of analyses with actual data sets, and developing reports professionals would (or should) create and would likely encounter in their work.

We also assigned more readings illustrating decision oriented empirical inquiry. For instance, Miller (2002) describes the use of stakeholder surveys to shape district decision making in the adoption of a reading program. Secher (2005) reports an analysis of SAT scores in reading and math of African American and Hispanic broken down by various course sequences at the high school level. A book by Richetti and Tregoe (2001) explains and provides examples of a large variety of inquiry and decision support tools, including needs assessments, stakeholder analysis, and situation appraisal.

New students admitted to the EdD program get information within a few weeks of their acceptance. We added Web content and devoted portions of the first year graduate student orientation to information about the problem-based thesis model. This was important because the new thesis model assumes more connection with the workplace than does a typical research study, and so we wanted students thinking about the thesis model and its connection to their workplace from the very beginning of their graduate studies. Thus, one of the letters sent to newly accepted EdD students cites the program's intention to "link intellectual development with professional development and practical problem-solving with tasks of management and leadership." The letter, sent a month before students begin their coursework, encourages the new admits to reflect on needs in their organization and possible areas of focus in their graduate studies. At an orientation at the very beginning of the semester this point is reinforced again, and again in their first class session when students are guided through a password-protected Web site with a variety of academic and program specific resources. Finally, since academic departments and graduate programs vary among institutions, it is worth highlighting two structural conditions helpful in enabling this initiative. While I can only speculate, under different structures these changes may not have occurred.

First, the EdD program is relatively separate from the PhD program (different admissions and core courses). While there is much faculty overlap—many faculty advise both PhD and EdD students and teach courses in each program—the programs are quite separate; policy and curriculum decisions in one program have little effect on the other program. Thus, the decision long ago to rename the EdD thesis and endorse a decision-oriented purpose did not affect PhD dissertation policies and expectations. Recent course revisions to the EdD core have little or no

effect on PhD curriculum, instruction, or students. If the two programs were more interconnected, changes to one or the other would be more complicated and difficult.

Second, our EdD program is quite structured: it has a fixed sequence of core courses, students go through the program as a cohort, and students are required to take two courses a semester. Under these conditions, it is easier to plan and coordinate the curriculum. We can easily communicate with the students as a group, minimize gaps or redundancies in curriculum coverage, ensure that certain high priority topics or skills are reinforced in multiple courses, and design selected student projects that span several courses. With a less structured and coordinated program it would be more difficult to implement the curriculum and thesis changes that we have designed.

Continuing Challenges and Improvement Processes

This initiative is not complete. We will continue to discuss and clarify our own expectations for standards of evidence for substantiating problems, documenting conditions in an organization, and justifying decision choices. Some problems are easy to quantify and substantiate, and others are more challenging. We want candidates to marshal evidence and make well reasoned arguments in support of their claims and perspectives, but at the same time we must accommodate the reality that organizational problems are complex and decision makers must frequently decide and act with imperfect information.

We need also to decide how fixed versus flexible our specifications should be for the form and content of the final product. Different kinds of problems as well as different professional roles of students will require flexibility in specifications of form and content, but at the same time, both students and faculty benefit from have specific models to follow. This is not unlike how dissertations vary in methods and epistemologies and in length and numbers of chapter, but within a larger framework of uniform expectations, such as needing a theoretical framework, a literature review, conclusions, and a chapter-based organization.

Finally, we must determine how to respond to unanticipated and uncontrollable events impinging on and possibly altering the progress of candidate's project. This is not an insurmountable problem and similar to a researcher encountering unforeseen changes in executing a field study, but in the case of our candidates engaged in workplace-focused inquiries, the roadmap about how to adjust is not well established.

Such issues notwithstanding, we are committed to this new path, and so the question is no longer should we do this but how can we maximize the effectiveness of the new thesis model as a significant, rigorous, and durable learning experience for our students and a productive and practical initiative for their organization? Because the problem-based thesis model is new (adopted over 2007–2008 academic year) and is a significant departure from past practice and from the familiar territory of conducting research, it will take several years to work out the kinks. What features do candidates find difficult to carry out? What features do we believe and do candidates believe are most valuable? Least valuable? What do we look for as evidence of learning and growth consistent with our program's goals? What do we look for as evidence of contributions to organizational practice and performance? Answers to these questions will emerge over time.

Information on the new model's implementation and effects will come from multiple sources and eventually from an evaluation. The immediate, primary information source is ongoing one-on-one advisement: candidates and their advisors plan, discuss, and problem solve as they carry out their respective roles and engage in the normal dialogue involved in thesis work (meetings, e-mails, phone calls, reviewing drafts, etc.). This information is discussed periodically in regular meetings of EdD advisory faculty. Supplementing this are annual meetings of the entire cohort and faculty advisors in which candidates present their projects, and time is allocated for Q & A on each project in the group setting. This way, each candidate and each advisor hears about everyone's problems, experiences, and progress. These forums—advisor-advisee dialogue, regular faculty meetings, and the cohort presentations—will continue to shape the design and implementation of the thesis. After the majority of candidates from two cohorts finish, we plan to interview a sample of graduates for a more comprehensive and impartial evaluation.

If by 2011 we review the complete array of components and declare this change a success and largely complete, it will have been a four to six year process, depending on how you define the start point. Roots of this change, however, extend back more than 20 years when a small cadre of "ed admin" faculty (long since retired) wrote a one page prospectus espousing a decision-oriented thesis and calling it the "Executive Position Papers." Fifteen years elapsed before the right conditions were in place to begin the hard work to fix the yawning gap between the prospectus and the program. The new model, we believe, appropriately legitimates rigorous problem-based inquiry and the improvement of practice as a principal aim of graduate education for professionals.

Notes

1 One study of 830 dissertations classified into these areas (public administration, management, planning, criminology, social work, and women's studies) found over 90% were empirical studies (Adams & White, 1994). A book on doctoral programs for administrators contains an appendix with a "Dissertation Template" showing the presumed format for dissertations: a theory/literature review section, research questions/hypotheses, methodology, findings or results, conclusions and implications (Erickson, Howard, Borland, & Baker, 2004).

2 For literature on the logic and study of organizational problems and decision making, see Beach and Connolly (2005), Bolman and Deal (2003), Buyukdamgaci (2003), Cuban (2001), Gaynor, (1998), Hodgkinson and Starbuck (2008), Richetti and Tregoe (2001), March (1994), Rittel and Weber (1973), and Schon (1983).

3 Rittel and Weber (1973, p. 159), in a seminal article on this subject, write, "[O]ne of the most intractable problems is that of defining problems (of knowing what distinguishes an observed condition from a desired conditions) and of locating problems (finding where in the complex causal networks the trouble really lies)."

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