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Intermediate Theory: The Missing Link
to Successful Student Scholarship

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ABSTRACT

Since 1998, five Texas State University students' capstone papers have won the Pi Alpha Alpha master's student paper award. This success rate is attributed to students' mastery of the the art of building and using intermediate theory or conceptual frameworks in the early stages of the Applied Research Project. This article introduces the notion of micro-conceptual frameworks and explains how students use them to connect all aspects of empirical inquiry—problem definition, purpose, literature review, methodology, data collection, and analysis. These conceptual frameworks act like maps that give coherence to the enterprise, and they are a critical missing link in successful student empirical research.

Since 1998, the capstone papers of students at Texas State University have won the Pi Alpha Alpha master's student paper award five times.¹ The papers are successful because students have mastered the art of building and using intermediate theory or conceptual frameworks. In this article, we introduce the notion of micro-conceptual frameworks and explain how students use them to connect all aspects of empirical inquiry—problem definition, purpose, literature review, methodology, data collection, and analysis. These conceptual frameworks, which act like maps that give coherence to the enterprise, are a critical missing link in successful student empirical research.

Our MPA students learn about the conceptual elements of empirical research as they prepare for their Applied Research Project (ARP), which is written in a two-course sequence. The first class (POSI 5335 Problems in Research Methodology)² is a research methods class that emphasizes the conceptual elements

of research. Students are required to find their topic, specify a research purpose, write a literature review, construct a conceptual framework, operationalize the conceptual framework, and present a prospectus.³ In the oral presentation of the prospectus they are required to share their research purpose and construct the two conceptual framework tables that are the focus of this article. The first table links their conceptual framework to the literature and the second table operationalizes the conceptual framework.

In the second course (POSI 5397 Applied Research Project),⁴ the students act independently. They are expected to submit a written prospectus (with the purpose statement and conceptual framework tables included), collect, organize and analyze the data, write their paper, and defend it in an oral examination. After the prospectus receives faculty approval, it is submitted to our Institutional Review Board. The tables used in the prospectus facilitate institutional review. The conceptual framework tables developed for the prospectus are included in the literature review and methodology chapters of the final paper.⁵ The operationalization table directs the organization of the results chapter, and a summary table drawn from the conceptual framework is generally found in the conclusion chapter. Given the importance of the conceptual framework tables in the overall process, this paper emphasizes how the tables are constructed, how they make theory more explicit, and how they act as links that connect all aspects of the research process. Examples of student work illustrate these connections.

PHILOSOPHIC APPROACH TO THEORY

Our approach to teaching about the role of theory in empirical research is explicitly guided by the ideas of Abraham Kaplan and John Dewey. Kaplan's (1964) sense of methodology incorporates a logic-in-use that focuses on the "problem at hand" and carefully considers conceptual aspects of empirical research.⁶ Dewey's instrumental view of theory is particularly useful because it treats theory as a tool to structure inquiry. When theory is approached as a tool (rather than truth), MPA student/practitioners are better able to see theory's relevance and usefulness. Our students learn about the "theory as tool" approach to empirical inquiry as they are faced with the challenge of writing their capstone projects—the Applied Research Project.

Kaplan also maintains that the traditional "hypothetico-deductive" method of inquiry associated with behavioral science methodology (and logical empiricism) is problematic because "most of the important incidents in the drama of science are enacted behind the scenes" (Kaplan, 1964, 10). Kaplan views theory as too often in the "shadowy background" or "ghostly in appearance" and says that the conceptual elements of methodology should be "exposed to sunlight" (Kaplan, 1964, 268). Dewey describes this phase of methodology as the "twilight zone of inquiry" (Dewey, 1916, 174). The logic-in-use of Dewey and Kaplan emphasizes the "behind the scenes" elements of inquiry such as procedures for forming

concepts and hypotheses (Kaplan, 1964, 23). The "behind the scenes" elements of inquiry can and should be "exposed to the sunlight."

THEORY AND PRACTICE

One of the unique facets of Kaplan and Dewey's approach is the extraordinarily tight connection between theory and practice.⁷ Theory is used to organize the exploration of the problem at hand. Dewey and Kaplan's key insight is that, without the problem there would be no need for theory. Conceptual frameworks are connected to outcomes or problem resolution because they aid in making judgment. Theory includes the "logical instruments" of reaching judgment (Dewey, 1938, 283). Dewey's common sense approach to theory and empirical inquiry has appeal to concrete, practice oriented, student/practitioners. It also gives them a new appreciation of the role and function of theory in management and policy.

Because micro-conceptual frameworks are applied to the problem at hand, they guide data collection and interpretation. Thus, these frameworks guide the most practical, mechanical, elements of empirical inquiry. For example, questionnaire design, interview questions, and content analysis coding sheets should be guided by theory. Choice of statistical tests as well as variable construction should be guided by theory. Our approach attempts to expose these connections to the "sunlight." In the process, theory is connected to data collection and interpretation. Kaplan (1964, 268) points out that

every theory serves, in part, as a research directive. Theory is useful because it guides the collection of data and their subsequent analysis, by showing us beforehand where the data are to be fitted, and what we are to make of them when we get them.... Without a theory, however provisional or loosely formulated, there is only a miscellany of observations, having no significance.

For Kaplan and Dewey, theory emerges as a tool to address an immediate practical problem and is most evident in the collecting, organizing, and interpreting of empirical evidence (both qualitative and quantitative). Theory enables analysis and synthesis because its structure provides a big picture and a little picture simultaneously.

Concepts and theories have a role in inquiry as "prescriptions for organizing the materials of experience so as to be able to go about our business" (Kaplan, 1964, 46). A theory conforms to the facts and it is a way of looking at the facts. "Theory must fit God's world, but in an important sense it creates a world of its own" (Kaplan, 1964, 309). The tool metaphor, once more, applies. Clearly, tools are of this world and they exist to solve problems; nevertheless, in the process of application, they also transform the world. It should be noted that conceptual frameworks are out in the open and are still conjectural or hypothetical. They are

not truth; rather, a systematic way (still subject to reason) to organize inquiry (Kaplan, 1964, 296).

For John Dewey, inquiry involves transformations that are achieved by

means of operations of two kinds.... One kind of operations deals with ideational or conceptual subject-matter.... The other...is made up of activities involving the techniques and organs of observations (Dewey, 1938, 117).

This paper deals with ways to enable the transformations of inquiry, linking the "conceptual subject-matter" to the "techniques and organs of observations."⁸

The student's choice of the conceptual framework (which tool?) is directed by the nature of the problem. But how do microconceptual frameworks help organize the observed world and connect it to the research problem?

Dewey (1938, 402) compares conceptual frameworks to maps. Maps are problem-solving tools. They help navigation through experience or the experiential world. They also represent and abstract from reality. When accurate, maps enable navigation within reality.

Like maps, micro conceptual frameworks in empirical inquiry must have a directive function: "[w]hen the directive function of the map is left out of consideration it must be said that no map is 'true'" (Dewey, 1938, 402). True maps produce "consequences that are intended to be served by the map" (Dewey 1938, 403).

Dewey points out that "problems are constantly changing and therefore require conceptual tools which must be constantly refashioned to meet the new demands" (Flowers and Murphy, 1977, 812). Hence, there are two kinds of tools (micro frameworks), those that can be pulled out of the tool box (ready made) and those that must be created. When students engage in empirical research, they must first identify a problem and then search for a theory or tool to help connect the problem to observed data. The micro-framework can already exist (pick a tool from the tool box) or it may be improvised (make the tool).

This approach emphasizes the connective function of conceptual frameworks. These frameworks help students connect forward into the problem and give direction on how to collect and analyze data. They also have a connective function backward to the literature and larger theoretical frameworks (i.e., neo-classical economics, organization theory). Students are expected to justify their framework by connecting it to the scholarly literature (or an existing public affairs framework).

A literature review enables the student to get to know the topic, connect the larger literature to their work experience, and refine the research question or problem. The literature review may also reveal where previous inquiry has stopped. Conceptual frameworks are built upon the premise and practice of a careful, thoughtful, and reflective review of the literature. Students are thus expected to draw upon the wisdom and insights of the literature and their experi-

ence to develop a plan or map to guide their inquiry. A good map helps one reach an unknown destination more quickly and with less anxiety.

CLASSIFYING AND NESTING MICRO FRAMEWORKS

Unlike most approaches to methodology that place conceptual frameworks in the “twilight region” of inquiry (Kaplan, 1964, 268), we give microconceptual frameworks names and classify them into five concrete categories. In the early stages of problem formation and conceptualization, the five types of microconceptual frameworks are linked to a “research purpose” in this way:

<i>Microconceptual Framework</i>	<i>Research Purpose</i>
1. Working Hypotheses	Exploration
2. Categories	Description
3. Practical Ideal Type	Gauging
4. Models of Operation Research	Decision Making
5. Formal Hypotheses	Explanation/Prediction

In the late 1980s, the faculty realized that our student papers lacked conceptual coherence. This problem often seemed intractable. Students just did not understand how to make their papers analytical, and we were not effective at communicating how to enhance their conceptual and analytical nature. The critical insight occurred when we realized that most social science research is implicitly explanatory (or hypothesis-driven), while public administration research was often exploratory or descriptive. If hypotheses were the framework for explanatory research, were there different frameworks for description or exploration? Categories were the obvious framework for the descriptive purpose. Dewey’s working hypotheses seemed a perfect fit for exploration.

Further, maybe a practice-oriented field like public affairs had research purposes/frameworks not found in social science methods texts (see Babbie, 2004). Here it became obvious that decision-making and models of operation research could be paired. Hypotheses worked for impact evaluation—but what about process evaluation? Was there a systematic way to gauge whether program components made sense (or were working in practice)? Could program processes be gauged against ideal criteria? Thus, the gauging research purpose was paired with the practical ideal type conceptual framework.

Of course, before a framework can even be considered, students face the challenges of finding a topic, then narrowing a topic so that the research question can fit one of the research purposes. The method we use to address this aspect of the course (*Step by Step* notebook) is more fully developed in several scholarly sources and is not the subject of this paper.⁹

Once the students can identify their research purpose, the conceptual challenge is simplified because they can name the framework they are searching for. The

naming makes the search more concrete. They are better able to decipher which literature and life experiences are important. The task of organizing inquiry is easier and more productive.

Once the frameworks and purposes were paired, it became obvious that the research technique (questionnaire, interviews) and statistics were easily linked. Table 1 demonstrates how we link research purpose, framework, method, and statistics.

Like most courses, POSI 5335 has evolved since it was first introduced in 1991. Table 1, for example, was not formalized until 1997. And it was not until 2000 that we started to require students to construct the conceptual framework tables at the prospectus stage. Once the research purpose is formalized and the

Table 1. Classifying Micro-Conceptual Frameworks¹⁰

Research Purpose (1)	Research Question (2)	Micro-Conceptual Framework (3)	Research Technique/ Methodology (4)	Statistical Techniques (5)
Exploration	Anything goes: what, when, where, why, who, how, or any combination of the above	Working hypotheses	Usually qualitative techniques: field research, structured interviews, focus groups, document/ archival record analysis	Qualitative evidence may not be statistical But anything goes Any type of statistical analysis possible
Description	What	Descriptive categories	Survey and content analysis	Simple descriptive statistics: Mean median, mode frequency distribution, percentages, t-statistics
Gauging	How close is process/policy to an ideal or standard? How can x be improved?	Practical ideal type	Case study, survey, content analysis, document analysis, structured interviews	Simple descriptive statistics: Mean median, mode frequency distribution, percentages, t-statistics
Decision making	What is the best decision? Which approach?	Models of operations research	Cost benefit analysis, cost effectiveness analysis, linear programming, decision tree, etc.	Quantitative techniques of operations research
Explanation	Why	Formal hypothesis: if x then y	Usually quantitative, experimental and quasi experimental design, Survey, existing data analysis	t-statistics, correlation, chi-square, analysis of variance, simple and multiple regression

type of framework recognized, students search for the unique elements of their framework. These unique elements are justified by the scholarly literature on this subject. Requiring students to construct these tables has led to better Applied Research Projects and has made the projects easier to supervise.

Ideally, the required "conceptual framework table" connects column 1 (research purpose) and column 3 (micro-conceptual framework) of Table 1. The required "operationalization table" connects column 3 (micro-conceptual framework) and column 4 (research technique/methodology) and sometimes column 5 (statistics). Hence, theory or the conceptual framework is the centerpiece of all applied research projects.

Once we are satisfied with the operationalization table, it is clear how the ARP will be organized, and consistent supervision does not require a good memory. Hence, the remainder of this paper focuses on explaining the frameworks and illustrating the conceptual framework tables that structure every Texas State ARP.

It should be noted that these frameworks are developed to deal with the complexity of real world problems. Research questions are not answered with a simple yes or no. For example, Rachael Jeffers (2003) wanted to better understand the nature of development sprawl and study city managers' attitudes toward sprawl. After extensive reading and reflection on her experiences with city managers,¹¹ Jeffers focused the investigation by examining how sprawl influenced city finance and service provision, annexation policy, and regional government policies. Because her research was preliminary, she developed three working hypotheses (and a series of subhypotheses) that were categorized by the criteria above.

Valerie LaCour Francois (2004) was asked by her supervisor to analyze the City of Austin's employee grievance procedures. Francois was expected to make recommendations to improve the current system. She used a practical ideal type framework to identify key components of grievance procedures found in the literature; this allowed her to compare the existing system with a standard developed from the literature using case study techniques. Keiji Shirota (2003), a young accountant, was interested in investigating how public finance officials in local government assessed the Government Accounting Standards Board (GASB) new reporting requirements as summarized in *Statement 34*. Shirota used categories (adequacy and accountability, usefulness, accuracy of representation, cost of implementation) as the basis of his empirical investigation (the source of his survey questions).¹²

Without the knowledge that they would be required to develop and present a conceptual framework and operationalization table, students usually avoid the challenging work of conceptualizing. Both tables present unique challenges. The conceptual framework table requires theorizing. In the operationalization table, students are expected to show how their conceptual framework moves from the abstract to measurement and modes of evidence collection. In other words, they move to the real world of public administration practice.

WORKING HYPOTHESES¹³

Exploratory or preliminary research is linked with the micro-conceptual framework “working hypotheses,” which signal that conceptualization is in its preliminary stages. The working hypothesis is a pivotal concept in Dewey’s (1938) theory of inquiry. Working hypotheses are a “provisional, working means of advancing investigation”; they lead to the discovery of other critical facts (Dewey, 1938, 142). This is the type of theory that Kaplan (1964, 268) would describe as “provisional or loosely formatted.” Although the working hypothesis is preliminary, we still emphasize that it should, like all hypotheses, be in the form of a statement of expectations. Further, it must be possible to collect evidence that either supports or fails to support the expectation. Further, working hypotheses (like formal hypotheses) are never proven. They are supported with empirical evidence.

Given the preliminary nature of exploratory research, working hypotheses are a micro-conceptual framework that is usually “invented.” The working hypotheses are invented using information from the literature and the student’s experience. In practice, most students use broad categories to classify working hypotheses, and then a series of subhypotheses within the broad category are used to connect to the data or evidence (the link to experience). Working hypotheses direct inquiry because they help to establish the connection between the research question and the types of evidence used to test the hypothesis. This link is formalized in the operationalization table.

EXAMPLES OF WORKING HYPOTHESES TABLES

Michelle Romero’s ARP is a good example of how working hypotheses are used to organize and propel inquiry. Romero worked for Texas State Representative Jim Solis (D-Harlingen) and had been involved with the legislative side of performance measurement. This led her to the topic of performance measurement and a desire to understand how the Texas State agency leaders viewed the performance measurement system. After a careful literature review, she developed the following purpose statement: “The purpose of this research is to investigate the attitudes and perceptions of state agency leaders toward utilization of the current performance measurement system in Texas state government” (Romero, 2004, 5). She developed six working hypotheses to capture the many dimensions of a performance measurement system. The working hypotheses dealt with the broad subject areas: communication, quality of information received, resources available to implement, disposition to implement, bureaucratic structure, and utilization of the measures. Table 2 illustrates the first two working hypotheses found in Michelle’s actual conceptual framework table. (See Romero, 2004, 45-47, for the entire conceptual framework table).

The conceptual framework table is usually found at the end of the literature review chapter. It is also used to structure much of the narrative of the chapter. It serves as a type of outline, with the literature already identified. Each working hy-

pothesis (and subhypotheses) is explained, developed, and defended under separate subheadings that correspond to the key concept in the working hypothesis.

Since Romero's purpose was to "investigate the attitudes and perceptions of state agency leaders," she needed to develop either interview questions or survey questions. Michelle was interested in generalizing to a large group of agency leaders, so she decided on survey research. She used the working hypotheses to develop her questionnaire.

The operationalization table (Table 3) shows how her questionnaire items corresponded to the working hypotheses. Our rule of thumb is that each subhypothesis should have at least one questionnaire item. Romero used a Likert Scale in the actual questionnaire (see Romero, 2004, 56-57, for the complete operationalization table).

Romero structured her results chapter around the conceptual framework. The chapter subheadings consist of the key concept imbedded in the working hypothesis (e.g., communication, information). Using the operationalization table as a guide, Romero summarized the results in tables and then in the narrative section within the corresponding subheading. She analyzed the three questionnaire items under "communication" found in the operationalization table. Table 4 is one of six tables that correspond to the conceptual framework found in Romero's results chapter (Romero, 2004, 61).

Table 2. Part of Michelle Romero's Conceptual Framework Table

Working Hypotheses	Scholarly Support
WH1: Effective communication is evident in the performance measurement system.	Behn (2003), Caiden (2000), Grizzle & Pettijohn (2002), Kravchuck & Schack (1998), Long & Franklin (2004), Moore & Heneghan (1996)
<i>WH1a: Strategic plans are clearly communicated.</i>	Behn (2003), Julnes & Holzer (2001), Kravchuck & Schack (1998), Moore & Heneghan (1996)
<i>WH1b: Performance information guidance is clearly communicated</i>	Behn (2003), Grizzle & Pettijohn (2002), Heinrich (2002), Julnes & Holzer (2001), Kravchuck & Schack (1998), Moore & Heneghan (1996).
WH2: The performance measurement system operates with good information.	Behn (2003), Grizzle & Pettijohn (2002), Julnes & Holzer (2001), Kravchuck & Schack (1998), Moore & Heneghan (1996).
<i>WH2a: Performance information is reliable and accurate</i>	Behn (2003), Bouckaert (1991), Frederickson (2002), Grizzle & Pettijohn (2002), Heinrich (2002), Julnes & Holzer (2001), Melkers & Willoughby (2001), Moore & Heneghan (1996), Radin (1998).
<i>WH2b: Performance information is monitored for compliance</i>	Grizzle & Pettijohn (2002), Heinrich (2002), Julnes & Holzer (2001), Kravchuck & Schack (1996), Melkers & Willoughby (2001).

Table 3. Part of Michelle Romero's Operationalization Table

Working Hypotheses	Survey question
WH1: Effective communication is evident in the performance measurement system.	The Texas performance measurement system is developed with clear communication from stakeholders.
<i>WH1a: Strategic plans are clearly communicated.</i>	Performance measures are developed with a direct linkage to agency strategic plans.
<i>WH1b: Performance information guidance is clearly communicated</i>	Staff using performance measures receive clear guidance information.
WH2: The performance measurement system operates with good information.	The Texas performance measurement system operates with good information.
<i>WH2a: Performance information is reliable and accurate</i>	My agency's performance measures are based on reliable information.
<i>WH2b: Performance information is monitored for compliance</i>	My agency's performance measures are monitored to ensure data validity.

Table 4. Example of Michelle Romero's Results Tables (Effective Communication)

Working Hypothesis	Survey Question	N	% Agree & Strongly Agree	Mode
WH1: Effective communication is evident in the performance measurement system.	The Texas performance measurement system is developed with clear communication.	67	37%	Neither Agree or Disagree
<i>WH1a: Strategic plans are clearly communicated.</i>	Performance measures are developed with linkages to strategic plans.	67	63%	Agree
<i>WH1b: Performance information guidance is clearly communicated</i>	Staff receives clear guidance information.	68	75%	Agree

Although working hypotheses are associated with research at its early stages, their flexibility allows for the most sophisticated, complex research questions and design. Three of the five Pi Alpha Alpha papers used working hypotheses as their framework.¹⁴

CATEGORIES

Categories or classification is the easiest and most basic micro-conceptual framework to see or use. Categories are linked to the descriptive purpose and are paired with "what" questions. Classification is a powerful conceptual tool that is often not seen by practitioners. Raising the students' consciousness about classification as an organizing tool is a major benefit of this approach.

Kaplan (1964, 50) discusses the process of conceptualizing associated with categories:

In this process the things studied are classified and analyzed: several things are grouped together and particular things assigned to the several groups to which they belong.... Things are grouped together because they resemble one another.

Dewey likens categorization to sorting like things in bins. The categories are labels for the bins. Dewey also locates generality in the activity of producing inquiry, in operations performed with a view toward particular problems or questions: "Sorting is done on the basis of need to draw certain inferences to solve certain problems to construct or produce instruments that will be effective in the resolution of experienced difficulties" (Hickman 1990, 129).

Through the literature review, students are expected to start finding "what" aspects of a phenomenon they want to describe. The complex and multifaceted nature of public management and policy dictates a descriptive framework that is often multifaceted. The literature review should also help them find family resemblances and labels for the bins. When students find existing ways to label the bins, they are using previously constructed tools. When the literature hints at ways to describe a phenomenon, they must invent the bin labels.

For some reason, however, students are often reluctant to invent the labels; the explicit challenge of inventing a descriptive framework requires a degree of intellectual independence that makes them uncomfortable. This is ironic, because managers are stronger if they can recognize that some kind of abstract framework helps to organize a problem and that they may be responsible for the framework development. People who own problems may need to build tools. Student Erin McKinnery (2004), for example, used index cards to identify aspects of the problem she was considering. She then spent several days sorting the index cards into groups that became her larger categories.

Description is often chosen as a research purpose when students discover that basic information is missing from the literature. Rebecca Anderson (2003), who was interested in domestic partner policy, discovered that formal domestic partner policy could include a variety of benefits, but a systematic inventory of the kinds of benefits offered was missing from the literature. Rebecca's purpose statement follows:

The purpose of this research is to describe domestic partner benefits in state, county and city government. While the literature indicates many possible components of these policies, it does not provide a particular framework to describe the policies or any detail [about] which elements are part of existing policies. The intent of this research is to develop a framework from the literature and then measure actual policies in use by government entities for the presence of those elements using descriptive categories (Anderson 2003, 3).¹⁵

PRACTICAL IDEAL TYPE

The practical ideal type conceptual framework corresponds to the research purposes gauging. We realized that most social science research is not designed to incorporate normative judgment or to be applied to immediate practical problems. Public administrators often use research findings to make recommendations to improve programs; in other words, they are asked to gauge the effectiveness of program processes. One way to gauge the efficacy of program processes is to develop criteria for this judgment and then to collect empirical evidence to contrast the reality of the program against the criteria.

We have named these criteria the practical ideal type. In other words, the criteria are the components of a nearly ideal process. We use the term practical to indicate that the criteria or model components are not perfect but are subject to revision. The practical ideal type is just the best components that the student could find after engaging in a careful review of the literature, tempered by his or her experience.

Unlike the "what" research question associated with description, gauging research asks, "what should"—that is, how close is process x to the ideal or standard? The research purpose is to gauge what should be done to improve an administrative process.

The practical ideal type conceptual framework is like a combination of categories and working hypotheses. Descriptive categories do not contain an explicit normative direction. The categories of the ideal type do, and thus can be treated as statements of expectation (or working hypotheses) that direct evidence collection—and can be supported or not be supported by the evidence.

The beauty of the practical ideal type is that, when evidence is collected, students are able to make recommendations and assess strengths and weaknesses.

The practical ideal type is a micro-conceptual framework equipped to address issues raised by formative program evaluation.

The search for best practices is akin to the search for a practical ideal type; the best practice is what should be in place. Practical is the key term for this micro-conceptual framework. In other words, the ideal is itself under construction. The framework represents a starting point and is itself subject to revision.¹⁶ Dewey (1938, 303) stresses that "ideals...are not intended to be themselves realized but are meant to direct our course to realization of potentialities" in experience. Kaplan (1964, 83) describes an ideal type as a construct; it "specifies something with which the real situation of action is compared and surveyed for the explication of certain of its significant components." To sanctify the ideal and to disparage the actual because it fails to comply with the ideal misses the point.

A vision is not a scene but it can enable us to construct scenes which would not exist without it.... To ignore or depreciate ideal because it cannot be literally translated into existence is to acquiesce not only to things 'as they are'—as is something said—but also to things 'as they are not' because all things that are have potential (Dewey, 1938, 304).

Practical ideal types are generally organized by category. Clearly, the practical ideal type must have strong ties to the broader literature. ARPs that include well-crafted practical ideal types are easy to supervise. The practical ideal type directs the search for evidence as well as the organization of the results. It also provides a straightforward way to interpret the meaning of the findings.

Practical ideal types provide benchmarks and/or best practices that enable the manager/researcher to understand and improve reality. For example, NASPAA uses standards to assess master's degree programs (ideal type—or in the case of NASPAA, minimum acceptable standards). Existing standards—laws, regulations—can be viewed as ready-made conceptual frameworks. A key point is that practicing public administrators are confronted with ready-made conceptual frameworks similar to the practical ideal type in many aspects of their job.

An Example of the Practical Ideal Type. Sharon Ley, who worked for the Texas State Bar Association, became interested in succession planning and particularly in the Fellows Program, a pilot succession-planning program used at the Texas State Bar. Ley was interested in assessing the program and potentially offering suggestions that could improve it. She developed a three-pronged purpose statement, the first element of which dealt with building the ideal type model itself:

The purpose of this applied research project is threefold. First, it will describe the ideal characteristics of an effective succession-planning program based on the literature. Second, it will assess the State Bar of Texas Fellows Program Pilot Project using the practical ideal

type characteristics. Finally, the project will develop strategies for improving the effectiveness of the State Bar of Texas Fellows Program (Ley, 2002, 7).

Ley's formal conceptual framework is found in Table 5 (Ley, 2002, 27), where she identifies both the broad categories of an idea succession plan such as "top management support" and "needs-driven assessment." Within each category are elements that further define the its meaning. For example, top management

Table 5. Practical Ideal Type for Succession Planning

Ideal Type Categories	Sources
Top management participation & support <ul style="list-style-type: none">- Board, CEO, and senior management support and participation- Open discussion of potential employees- Willingness to hire across division lines	Rothwell, 2001; Walker, 1998; Getty, 1993; Shah et al., 2001; Gratton & Syrett, 1990; Nowack, 1994
Needs-driven assessment <ul style="list-style-type: none">- External benchmarking- Assessment of core competencies of positions	Rothwell, 2001; Holton et al., 2000; Nowack, 1994
Provide formal professional development opportunities <ul style="list-style-type: none">- Orient potential leaders with organizational environment- Formal mentoring- Access to leadership development seminars	Rothwell, 2001; Bard & Moore, 2000; DiMattia, 2000; Delahoussaye, 2001(a); Foster, 2000; Barker, 1997
Focused on individual attention <ul style="list-style-type: none">- Listen to employee's goals/desires- Individuals make training choices- Emphasize growth in qualities to take employees beyond the next rung in the ladder	Rothwell, 2001; Spoor, 1993; Shah et al., 2001; Gratton & Syrett, 1990; Nowack, 1994
Dedicated responsibility <ul style="list-style-type: none">- Coordinator who keeps plan current- Create computerized models- Dedicated funds/budget- Systematic approach- Keeps track of future needs	Rothwell, 2001; Getty, 1993; Shah et al., 2001; Gratton & Syrett, 1990; Nowack, 1994
Extends to all levels of organization <ul style="list-style-type: none">- Identify talent at all levels- Open communication and knowledge of plan	Schall, 1997; Walker, 1998; Getty, 1993; Sogunro, 1997
Part of strategic plan <ul style="list-style-type: none">- Strategic plan determines which positions will be in succession plan- Have written purpose statement and measurable goals	Rothwell, 2001; Gratton & Syrett, 1990; Foster, 2000

support translates to 1) board and CEO support; 2) open discussion of potential employees; and 3) willingness to hire across division lines. Like the other conceptual framework tables, Table 5 also includes the sources Ley used to construct and defend each category of the practical ideal type model. Instead of a literature review chapter, her second chapter, "Succession Planning Model," was devoted to constructing the model. The categories in Table 5 made up key subheadings in the chapter. The references listed were used to explain and justify the components of the model in the narrative.

Ley used a case study technique to achieve the second purpose, assessing the State Bar Fellows Program using the practical ideal type. Table 6 illustrates a portion of her operationalization table (Ley, 2002, 37-38). She identifies the method used (document analysis, focused interviews, and participant observation). She lists the evidence needed to support the hypothesis and the data sources (types of documents and whom she would interview). The table also guides Ley's methodology chapter discussion. For example, Ley discusses the single case study as well as the techniques (e.g., document analysis), their strengths and weaknesses, sampling issues associated with each technique, and the biases she expects.

Again, the results chapter is organized by the operationalization table. Ley used the categories in the ideal type model as subheadings, and then discussed the findings for each type of research technique (e.g. document analysis, focused interviews). She summarized her findings in tables at the end of the section (see Table 7; Ley, 2002, 46).

Table 6. A Portion of Ley's Operationalization Table

Ideal Type Categories	Research Methods	Evidence	Sources
Top management participation and support	Document analysis	Board recognizes need for program.	Board meeting minutes
- Board, CEO, and Senior Management support and participation	Focused interviews	CEO displays verbal and written support of program	Senior management meeting notes, email messages from executive director to division heads
- Open discussion of potential employees	Participant observation	Program is discussed at senior management meetings.	HR promotion records
- Willingness to hire across division lines		Existence of written policy of hiring/ promoting across divisions.	Interviews with senior management

Table 7. Top Management Participation and Support—Results

Ideal Type Categories	Evidence	Research Method	Evidence Supports
Top management participation & support	Board recognizes need for program.	Document analysis	Somewhat
- Board, CEO and Senior Management support and participation	CEO displays verbal and written support of program.	Participant observation	Yes
- Open discussion of potential employees	Program is discussed at senior management meetings.	Focused interviews	No
- Willingness to hire across division lines	Existence of written policy of hiring/ promoting across divisions.		No

At the close of the results chapter, Ley had successfully addressed her second stated purpose: “assess the State Bar of Texas Fellows Program Pilot Project using the practical ideal type....” In the conclusion chapter she addressed her third purpose: “develop strategies for improving the effectiveness of the State Bar of Texas Fellows Program.” She used the model she developed earlier and her findings to develop these strategies. Recommendations tend to fall out of the model fairly easily; in fact, when the evidence suggests that practice is far from the ideal, recommendations that move the organization closer to the ideal are self-evident. For example, Sharon found that top managers at the Texas State Bar were not really involved in the Fellows Program. She therefore recommended that division heads be involved in the decisionmaking processes in the Fellows Program so that the program would benefit from their input and vision (Ley, 2002).

Students are also encouraged to make recommendations that fall outside the ideal type framework as well as to note probable sources of bias or error that should be taken into account when interpreting the findings.

The practical ideal type is a microconceptual framework that addresses “what should” questions. When public managers ask questions about impacts or outcomes, the practical ideal type is inadequate. They must use the formal hypothesis as their micro-framework.

THE FORMAL HYPOTHESIS¹⁷

Explanatory research and the formal hypothesis are the mainstay of social and policy science. The philosophies of science most often associated with empirical, explanatory research are logical positivism and logical empiricism, both of which use the hypothetico-deductive model. Explanatory research addresses the “why”

question. At its most basic, the formal hypothesis takes the form "if X then Y."

Students are often confused about hypotheses, because their first academic experience with formal hypotheses was usually in a statistics class where the convoluted null hypothesis was stressed. As a result, the importance of the research hypothesis as a method of organizing inquiry was obscured.

The research hypothesis is the organizing engine that drives explanatory research. There are actually two formal hypotheses. One is associated with the abstract theory; this is the hypothesis found in the first conceptual framework table. The other is interpreted or operational; the operationalization table depicts the interpreted or operational hypothesis. Using more familiar language, the interpreted (or operational) hypothesis includes dependent and independent variables. Issues of sampling, probability, and generalizability arise naturally. Inferential statistics are the quantitative method most often used to test the hypothesis. The null hypothesis is connected to theory and is placed in proper perspective.

From a public affairs perspective, explanatory research is important, because all impact program evaluations use formal hypotheses. In its most general form, the underlying hypothesis for all outcome-oriented program evaluation is "if program X then outcome Y" or "program X causes outcome Y." If this causal (or explanatory) link were not anticipated, then what is the justification for the program in the first place? Clearly, experimental and quasi-experimental designs are just different ways of testing the formal hypothesis: "if X then Y." The context and availability of data dictate, for example, whether a "pre-test, post-test control group" or a "post-test only comparison group" design is used. The dependent variable is always an outcome measure. The threats to internal validity commonly associated with impact evaluation research are more easily understood when the underlying hypothesis is seen.

EXAMPLES OF FORMAL HYPOTHESES

David Pearson was interested in the effect of hospital closings on rural economies. At the time, Pearson was working for a rural health agency. After reading the literature, he came up with the hypothesis in Table 8 (Pearson 2002, 42).

Although Pearson's formal hypothesis dealt with the negative effect of hospital closures generally, his interpreted or operational hypothesis operationalized the notion of "local economy" as five dependent variables (labor force, unemployment rate, personal income, total earned income, and population). He also operational-

Table 8. David Pearson's Hypothesis and Supporting Literature

Hypothesis	Supporting Literature
Hospital closures negatively effect the local economies of the counties where they were once located, over both the short-term and the long-term.	McGuire et al., 1993; Doeksen et al., 1997; Probst et al., 1999

ized short term as one year and long term as 10 years. Table 9 shows how these variables were measured, the data source, and the direction of the hypothesis (Pearson 2002, 46).

Pearson's methodology chapter also included information on the treatment and comparison group counties he used. Table 10 shows his results. The five measures of the local economy found in the operationalization table frame the results table (Pearson 2002, 57).

CONCLUSION

Students find the capstone process challenging and rewarding. Most find the first course (POSI 5335)—the course where they define the research purpose and develop the conceptual framework tables—the most difficult. The critical thinking involved in classifying, analyzing, hypothesizing, originating, designing, and creating these tables is often a new experience (Limbach and Waugh, 2005). Nevertheless, when a carefully constructed operationalization table is approved, the task of doing the empirical research in the second course (POSI 5397) is usually straightforward.

These tables are the missing link that tie together the research purpose, literature, theory, method, and results. The explicit microconceptual frameworks give rigor and coherence to the enterprise.

Table 9. Operationalization of the Hypothesis

Variables (unit of measure)	Time		Data Source
	1 Year Later	10 Years Later	
<i>Dependent</i>			
Labor force (# employed)	(-)	(-)	Bureau of Economic Analysis
Unemployment rate (% unemployed)	(+)	(+)	Bureau of Labor Statistics
Total personal income (\$ per county)	(-)	(-)	Bureau of Economic Analysis
Total earned income (\$ per county)	(-)	(-)	Bureau of Economic Analysis
Population (# residents)	(-)	(-)	U.S. Census Bureau
<i>Independent</i>			
Hospital closure (0, 1 variable)	1 = hospital closure 0 = comparison		U.S. Dept. of Health and Human Services

As professors, we enjoy hearing students describe how the ARP process has changed them professionally. They see things differently and ask different questions during meetings. They use frameworks to organize presentations and communicate with subordinates. Their colleagues say, "You have changed." The transformation of inquiry goes beyond the immediate task at hand and helps to create different, more capable professionals.

Table 10. David Pearson's Independent t-test Results

Dependent Variable	Short-term change (t + 1) - (t - 1)	Long-term change (t + 10) - (t - 1)
Labor Force		
Treatment Group Mean (N=24)	22.54	957
Comparison Group Mean (N=24)	-46.63	1283
Mean difference	-69.17	326
t value	-.627	.924
p value	.534	.361
Unemployment Rate		
Treatment Group (N=24)	-2.25	-2.90
Comparison Group (N=24)	-1.83	-2.52
Mean difference	.42	.38
t value	.555	.332
p value	.581	.741
Total Personal Income (in thousands)		
Treatment Group (N=24)	16115	150316
Comparison Group (N=24)	19358	176962
Mean difference	3243	26646
t value	.555	.745
p value	.582	.460
Total Earned Income (in thousands)		
Treatment Group (N=24)	5949	54644
Comparison Group (N=24)	3914	57233
Mean difference	-2035	2588
t value	-.794	.185
p value	.431	.854
* Population is only measured reliably at the beginning of each decade	Short-term change (1990-1980)	Long-term change (2000-1980)
Population *		
Treatment Group (N=24)	718	3005
Comparison Group (N=24)	1620	4462
Mean difference	902	1456
t value	1.010	.748
p value	.318	.459

NOTES

1. The actual Capstone papers or Applied Research Projects run 50 to 100 pages. The Pi Alpha Alpha papers are shorter versions in keeping with the 20-page limit. Most Capstone papers written since 2001 are available at <http://ecommons.txstate.edu/arp/>. This Web site also includes a limited number of capstone papers since 1992. Texas State University's library has catalogued all ARPs dating back to the mid-1970s.
2. See <http://uweb.txstate.edu/~ps07/sy35fa99.htm> for the syllabus of POSI 5335 Problems in Research Methodology.
3. See <http://uweb.txstate.edu/~ps07/prospectus1.htm> for the prospectus requirements.
4. See <http://uweb.txstate.edu/~ps07/sy97fa99.htm> for information on POSI 5397 Applied Research Project.
5. The information is always presented in table form somewhere in the ARP. Sometimes these tables are in chapters with different titles.
6. His *Conduct of Inquiry* is considered a classic in methodology and draws heavily from Dewey's (1938) *Logic: The Theory of Inquiry*. Kaplan also draws from William James and Charles Sanders Pierce.
7. See Dede (2004) for additional discussion of how MPA Programs use Dewey to bridge the theory/practice nexus.
8. The connection between Dewey, Kaplan and the philosophical underpinnings of these courses is more fully developed in Shields (1998) "Philosophy of Science" and Shields (2003) "Pragmatic Teaching Philosophy."
9. See Shields (1998, 1999, 2006, 2003). The logic of the *Step by Step* notebook (Shields 2006) is also grounded Dewey and Pierce's theory of inquiry as well as insights from contemporary philosophers like Larry Hickman (1990).
10. This table appears in an earlier *J-PAE* article by Shields (2002).
11. Jeffers works for the Texas Municipal League. She interacts daily with Texas City Managers.
12. Unfortunately, the nature of an empirical capstone project limits the size and scope of the research questions that our students investigate. Many of the most interesting questions require time, skills, and effort well beyond the expectations of the class. We always keep in mind the goal of graduation and finding a manageable topic as the students focus on their research question/purpose.
13. For an extensive discussion of the role of working hypotheses in public administration inquiry, see Shields, 2003 and 2004.
14. Shivaun Perez (2000), Kevin Baum (1997), Timothy Wilson (2001).
15. Rebecca Anderson (2003) used content analysis to describe domestic partner benefits.
16. In their conclusion chapter, students often comment on the strengths and weaknesses of the framework. A new, more refined practical ideal type may emerge.
17. In Table 1, we identify five types of conceptual frameworks. We do not discuss the conceptual framework "models of operations research" because our students seldom use it.

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