

KELLER #109- earlier version than printed one

109. S. David Brazer and L. Robin Keller. 2008. "A Design Research Approach to Investigating Educational Decision Making," in Handbook of Design Research Methods in Science, Technology, Engineering, and Mathematics Learning and Teaching, Kelly, A. E., Lesh, R.A., & Baek, J. Y. (Eds.), Routledge, Taylor and Francis: New York, 284-296, Published June 23, 2008. <http://www.routledgeeducation.com/books/Handbook-of-Design-Research-Methods-in-Education-isbn9780805860597>.
Revised version of "An Educational Decision Making Conceptual Framework: Combining a Multiobjective Multistakeholder Model with Design-Based Research, final version, Spring 2005. (Accepted to be published in a handbook volume on design research in education edited by Anthony (Eamonn) Kelly following GMU-NSF Knowledge Design Meeting, Santa Fe, Jan. 2003.)

An Educational Decision Making Conceptual Framework: Combining a Multi-objective
Multi-stakeholder Model with Design-Based Research

S. David Brazer

George Mason University

L. Robin Keller

University of California, Irvine

June 19, 2003

Running head:

AN EDUCATIONAL DECISION MAKING CONCEPTUAL FRAMEWORK

To appear as a chapter in a book edited by Anthony (Eamonn) Kelley and Richard Lesh, Edited Volume of Contributions from Invited Participants in George Mason University-NSF Knowledge Design Meeting for Improving K-12 Education Research, Santa Fe, Jan. 2003. The meeting was an interactive research workshop bringing together researchers from different fields to explore how education research could be improved by using methods from other fields. (See electronic mail correspondence memo from editor A. E. Kelley inserted at end of paper.)

Introduction

American popular conceptions of leadership lead to a search for the omniscient, omnipotent hero who can solve a clear-cut problem through a savvy combination of brains and brute force. Harry Potter has more brains than brawn, but we are left with the suspicion that this nerd-as-hero will either retire after he leaves puberty or emerge into the more traditional mode brought to the silver screen by John Wayne, Sylvester Stallone, or Bruce Willis. Such archetypes trace their roots back at least as far as Odysseus, but flesh and blood examples are elusive for schools and school districts. The Western hero generally faces simple problems and makes decisions with little input or interference from anyone else. Educational leaders, on the other hand, face problems that are subtle, complex, and ambiguous and are generally expected to engage with numerous players to find solutions. Understanding educational decision making requires a model that takes into account the multiple objectives of multiple stakeholders and an approach that is interactive with research participants.

A helpful model takes into account how various stakeholders' interests and influence are stimulated and expressed prior to arriving at a decision. Additionally, the decisions or choices made throughout the implementation process that shape final outcomes are just as important as the original decision. Unfortunately, there may be little incentive to study initial decisions and their implementation because to do so is thorny and time consuming. Much of the difficulty results from the lack of a conceptual or theoretical structure for studying educational decision making and implementation at the district and school site levels of analysis.

This chapter develops a conceptual framework combining the multi-objective multi-stakeholder model developed by Winn and Keller (2001) and design-based research to provide a tool that will help reveal decision making and implementation processes in schools. Similar to recent design-based research publications (i.e., those contained in the January/February 2003 issue of *Educational Researcher*), we anticipate that future work could examine a decision or innovation using the combined approach named above. In contrast to previous design-based research, however, our conceptual framework anticipates the study of innovations focused on school leadership rather than the classroom.

No One Walks Alone

Hollywood and classical literature aside, we have known for a long time that organizational decision making involves multiple actors. Decisions may be made in routine ways by subgroups within an organization, they may result from complicated political processes, or both (Allison & Zelikow, 1999). They are not typically made, however, by the man or woman at the top gathering cold facts and choosing the maximizing option because no one human being has the mental capacity to achieve optimality. Leaders' rationality is bounded by the limited ability of the human brain (Allison & Zelikow, 1999; March, 1994; Simon, 1993). Whether they are inclined to do so or not, leaders who wish to survive seek information from others prior to making decisions.

When multiple actors are brought in to assist with a decision, or when they will be impacted by a decision, it stands to reason that they bring varying goals, objectives, and interests with them. Some of these will be aligned with those of the leader and other

players and many will not (Allison & Zelikow, 1999). A certain lack of alignment is helpful in decision making because varying perspectives bring new information to bear on the problem and the ultimate decision. But the differences among players also lead to conflict as each strives to meet her or his personal, professional, and organizational goals. Differences are worked out through processes of negotiation, coalition-building, and logrolling (March, 1994), among many others.

Just as leaders work with advisors, the advisors themselves represent larger groups that share many of their core interests. The individuals in these groups are clustered together as stakeholders—they hold a stake in the final outcomes of the decision making process. Stakeholder groups exist inside the organization, but they also wield influence from the environment in which the organization is embedded (Pfeffer, 1982). We now see the leader inside a web of individuals and groups—stakeholders—all of whom have a keen interest in the outcome we label a decision. But an even more important outcome is the final product that comes in the form of decision implementation. Stakeholders are likely to continue to influence organizational processes throughout the implementation phase.

Understanding organizational dynamics through a multiple stakeholder perspective is helpful, but to understand more completely how decisions are made and implemented in school districts and in schools requires a higher powered lens. We need a means of articulating the various interests of major stakeholders and of weighing their influence.

The Players and Their Stakeholders

A relatively simple model of educational decision making places the school board in charge of overall policy with the superintendent acting as their agent. The board may decide that a specific change is needed—e.g., student achievement must improve. The superintendent in turn decides how best to bring about higher achievement, either by mandating a plan or letting central office staff and/or principals formulate their own strategies. The superintendent (or her assistants in larger systems) informs principals of the goal and the steps required to achieve that goal. Principals in turn decide how to proceed and inform teachers in a manner intended to achieve what the board and the superintendent seek. The teachers work with their students.

Even in this simple scenario there are many ways in which the board's policy can go haywire. Three typical potential problems are a lack of specificity of the goal, which might lead to varying interpretations; poor resource allocation that inadequately supports the goal; poor relations between the board and the superintendent or the superintendent and the principals, leading to half-hearted or ambivalent implementation somewhere in the chain; or a perception from teachers that what the board and superintendent have mandated is undesirable or impossible to achieve, leading to pro-forma implementation that makes very little difference in terms of teaching and learning. These kinds of outcomes are unexpected when the influence of stakeholders is ignored.

Using a stakeholder perspective brings us out of a chain-of-command model and into something that resembles more of a web. The board, the superintendent, and the principal each works within a web of stakeholders. Educational leadership webs are very likely nested, with the superintendent inside that of the school board and the principal

inside that of the superintendent and different decision makers sharing some stakeholders in common. (See Figure 1.)

[INSERT FIGURE 1 HERE]

The school board has at least four major stakeholders influencing their decision making: 1) the superintendent acts as a formal advisor to the board on policy; 2) parents, business leaders, and community members strive to exercise influence with board members using the implicit or explicit threat of failed future elections; 3) federal and state governments influence through big money available only if and when the rules and regulations they establish are followed; and 4) state and national associations tell board members what and how to think. (See Figure 2.) Each of these entities has a somewhat varying level of interest in what the board ultimately decides. The board is not monolithic, however. Depending on the issue, varying experiences, beliefs, and personalities of board members will be complementary, contradictory, irrelevant, or conflicting with one another, and the stakeholders in their web will influence each of them differently.

[INSERT FIGURE 2 HERE]

The superintendent sits in her own web within which the board is but one set of stakeholders. (See Figure 3.) Parents, business leaders, and community members are likely to exert influence on the superintendent in a manner similar to that of the board. But now a whole new set of players collectively referred to as “the central office” makes up a new set of stakeholder groups. If the board mandates a boost in student achievement, then the stakeholders who work on curriculum may find themselves in alliance with or in opposition to those who work on professional development. Meanwhile, the special

services wing of the central office will be concerned about implementation that allows for appropriate accommodation of learning disabilities. If there is a technology department, then there are stakeholders with an interest in applying technology to potential solutions. Additional departments with additional stakeholders likely exist. Spanning the central office and school sites, principals may be the most important stakeholders for the superintendent because they run the schools where the work actually takes place. If principals are not “on board” with a mandated change, it could be the superintendent who gets thrown over the side by the board.

[INSERT FIGURE 3 HERE]

At this point, it is not hard to imagine that principals sit inside their own webs with some already familiar stakeholders such as the board (though they are most likely to exercise their views through the superintendent), the superintendent, and parents. But new stakeholder groups may be preeminent for principals—namely students, teachers, classified staff, and assistant principals. (See Figure 4.)

[INSERT FIGURE 4 HERE]

Drawing up the Scorecard

A deeper understanding of educational decision making requires revealing how webs of influence shape decisions—both policy and procedure decisions and implementation decisions. Winn and Keller (2001) present a model based on retroactive examination of a decision in the business context that provides a stakeholder scorecard. The concepts and practical steps they developed can be applied to looking at a currently evolving decision in the educational context.

Prior to any decision, it seems likely that there will be an issue or presenting problem. Stakeholders will display varying degrees of power, legitimacy, and urgency with regard to the problem. Those with moderate to high levels of at least two of those categories are considered most salient to the problem and ultimate decisions stemming from it (Winn & Keller, 2001). Power could derive from position, relationships, access to resources, or a combination of all three (Pfeffer, 1982). Legitimacy refers to stakeholders' rights to involve themselves in a particular decision. Urgency conveys the time pressure stakeholders may perceive to have the decision turn out in a particular way.

After the critical stakeholders are identified, it then becomes possible to articulate their objectives as they seek to influence the policy or procedural decision. Beyond naming objectives, the researcher needs to work with stakeholders to have them group together related objectives—to develop their objectives hierarchy. As the decision process is played out in public and private arenas, it then becomes possible to collect qualitative data (in the form of observations and interviews) that reveal how various stakeholders' objectives hierarchies change over time (if in fact they do) and how they ultimately influence decisions (Winn & Keller, 2001). The result of exploring stakeholders' power, legitimacy and urgency and their objectives hierarchies should be a clearer delineation of their role in the decision making process than we have had up to this point.

Prior Use of Multiple Objective Multiple Stakeholder Approach in Educational Leadership

Roche (1971) wrote his dissertation on how multiple objectives could be used in local school budget planning, for allocating budgets across four junior high level subject

programs: English/language arts, science, mathematics, and social studies. The superintendent of a small New England school district was the decision making client. The school principal and department chairs were stakeholders below him in the budget process and the school board and school board chair were stakeholders above him in the process. The measure used for achieving educational objectives in each area was “percentage of students achieving at or above grade level on the standardized achievement test” (Keeney & Raiffa, 1976, p. 367).

In 1977, Ward Edwards worked with the Los Angeles Unified School Board on plans for court-mandated desegregation (von Winterfeldt & Edwards, 1986). Different stakeholder groups were invited to submit plans for rearranging children among schools to the school board and to submit weights for their objectives. The desegregation plans were then evaluated by a weighted average of the scores on all objectives. Staff members of the school board along with the analyst developed an objectives hierarchy with approximately 140 objectives; this was subsequently revised with input from stakeholders including school board members, representatives of the plaintiffs in the court case, and intervenors (both for and against busing). The final objectives hierarchy is in Table 1. The six main objectives included attaining a balanced racial-ethnic composition, improving educational quality, gaining community acceptance, minimizing implications for district personnel, minimizing destabilizing aspects, and implementing monitoring and evaluation. Weights on the objectives were provided by 5 of the 7 school board members (presented as averaged weights in publications) and by some stakeholder groups and experts.

[INSERT TABLE 1 HERE]

Edwards was able to help the LAUSD school board analyze the various plans submitted on the basis of their objectives hierarchy. Different plans were evaluated using the different weights from the school board, the antibusing group BEST, and three experts in integration and educational problems. The clear winner for all weight sets was the school board's original plan, which was rejected by Judge Paul Egly. This plan scored particularly well on the objective of educational quality, which was weighted highest by the board. Two plans which involved voluntary relocations surprised many because they did not do better on educational quality.

At this point, as the decision process evolved, the board developed a new plan informed by the multiple objective multiple stakeholder analysis. This second board plan was fine-tuned to perform well on the objectives that were considered most important among different stakeholders. Judge Egly subsequently ordered this new plan to be implemented.¹

Edwards and Roche took important initial steps to study how multiple stakeholders with multiple objectives influence the educational decision making process. We are interested in specifying a means to move beyond their analysis of specific decisions into the realm of the decision making and implementation processes in educational settings in general. In addition to demonstrating the usefulness of a multi-objective multi-stakeholder approach, these authors showed the potential for studying interventions in the decision making process.

¹ A 1980 California ballot referendum vote and subsequent court decision ended forced busing in Los Angeles.

Prior Use of Multiple Objective Multiple Stakeholder Approach in Other Domains

Since this approach has been used widely in other complex decision domains involving multiple objectives and multiple stakeholders, it should provide a useful perspective on educational leadership and innovation, building upon the foundational work on educational decisions by Roche and Edwards.

While developing an objectives hierarchy for the planning of the former West Germany's energy policies, Keeney, Renn and von Winterfeldt (1987) worked with nine major stakeholder groups: Association of German Industries, labor unions, the German Society for Nature Protection, the Catholic and Lutheran Churches, the Society of German Engineers, a large electricity company, a major power plant supplier, and the Ecological Research Institutes. Each stakeholder's objectives were structured, and then they were all combined into one objectives hierarchy for the nation's energy policy, with eight major fundamental objectives: security of energy supplies, national economic impact, resources utilized, environmental impact, health and safety, social impact, political impact, and international impact.

Winn and Keller (2001) illustrated their multiple attribute multiple stakeholder modeling approach by examining StarKist's decision to avoid fishing for tuna where dolphins are at risk. They examined the perspectives of the firm, the fishing fleet, and environmentalists (Earth Island Institute). They followed the evolution of the decision process and looked at the changing power, urgency and legitimacy of the stakeholders as time passed. Winn and Keller (1999) also examined MacMillan Bloedel's decision on environmentally sensitive lumber harvesting from the perspective of the firm, the loggers, and environmentalists (Greenpeace).

Muddling Through: The Messy Process of Educational Decision Making

Winn and Keller's work can be combined with that of other writers on decision processes and design-based research ideas to create a conceptual framework useful for exploring decision making in educational settings. As discussed above, multiple stakeholders influence decisions in education. A more effective way to study that influence is needed to gain a better understanding of why innovations do or do not take hold in educational settings.

Design-based research is primarily concerned with linking research and practice by examining how theory is applied in educational settings, how it should be adapted given practical results, and how learning takes place within the school as an organization (Cobb et al., 2003; The Design-Based Research Collective, 2003). This perspective seems ideally suited to the study of a process as fluid and ambiguous as decision making. Specifying the decision making players in a hypothetical innovation process in a school system demonstrates how the multi-objective multi-stakeholder approach could be put to work in the context of an evolving decision. Design based research will be discussed as an approach that enhances the multiobjective multistakeholder model.

Deciding to Improve Student Achievement

Imagining a traditional, hierarchical school district structure, decision making begins with the specification of a problem at the board and superintendent level. Student achievement provides a handy issue for demonstration purposes because statewide testing is so much in the spotlight in the contemporary policy environment. Assume that a primary problem for the board and superintendent is inadequate student achievement as determined by standardized testing data. The board and superintendent share high levels

of power and legitimacy because they are at least nominally in charge and urgency because to fail may mean that the board is voted out of office and the superintendent is out of a job. To keep this demonstration as simple as possible, suppose that the superintendent and her staff have determined that the most effective means of improving student achievement is for poor performing students to spend more time learning to-be-tested subjects in a new mandatory tutorial setting.

The question of how tutoring was identified as the preferred solution emerges immediately. This may be a solution that is already in place in many district schools on a small scale as a response to academic failure. In this case tutoring is convenient because it only requires scaling up to address the needs of all students not meeting state standards in any tested subject. Furthermore, the board and superintendent can assume that the schools already know how to tutor students. This may also appear to be a relatively inexpensive solution because teachers can be assigned to tutor as part of their regular duties, or they and others can be paid at an hourly rate to help students in need of tutoring. Already important stakeholder objectives of the board and superintendent are emerging: 1) improve student achievement as measured by standardized testing; 2) keep the program simple so that it has a higher probability of being implemented; and 3) keep costs to a minimum.

Behind the scenes of the board's decision to implement tutoring programs district wide, central office stakeholders were likely working to get their preferred solutions into the superintendent's recommendation to the board. We can imagine that professional development staff would push training programs intended to make teachers more effective in the classroom. Those efforts are very expensive in terms of teacher time

required to get trained, however, and would not meet the board's cost minimization objective. With little power and less urgency than the board or superintendent, the professional developers lose. Curriculum and instruction specialists, on the other hand, can simply be told to develop appropriate tutorial materials in their areas of expertise as part of their regular jobs. The only new expense involved to launch the program might be for materials production. Because the district already has experience with tutoring, training is not perceived as a need. The curriculum specialists, with a power, legitimacy, and urgency profile similar to the professional developers, carry the day because their proposed solution appears to meet the three main objectives of the board and superintendent. (See Figure 5.)

[INSERT FIGURE 5 HERE]

Backtracking for a moment into the decision processes of the two different groups among the central office stakeholders, we can infer similar sets of objectives for each. Professional developers and curriculum specialists would share the objective of having their preferred solution proposed to the board by the superintendent because such a decision would enhance their power and legitimacy. Linked to the program adoption decision may be the objective of survival, a major urgency factor. Each group, as part of staff not directly involved in the core processes of teaching and learning, may feel threatened, particularly in times of fiscal stress. Therefore, having their program selected by the superintendent and the board may be perceived as a life-and-death matter. Presumably both groups identify strongly enough with district goals that they also have the objective of improving student achievement. The objectives of enhancing power and legitimacy, assuaging urgency through more assured survival, and improving student

achievement would underlay each group's effort to put forward to the superintendent the best solution that aligns with their function in the central office. It is the difference in solution content, not conflicting objectives, that pushes the policy decision in the direction of the curriculum specialists.

After deciding on a program to improve student achievement and having that decision ratified through board action, the superintendent's next big decision is how to communicate with principals about implementation. As Figure 5 shows, at least three obvious options present themselves: 1) the superintendent can tell the principals to "just do it;" 2) the superintendent can work with principals to get "buy in" to the decision; or 3) the superintendent can involve principals in the process of deciding what the program will look like. Given our assumption that the board action was to implement a tutorial program, it seems that principals have little they can influence, removing option 3 for the superintendent. For the sake of a bit of subtlety and complexity, assume that the superintendent chooses option 2 and works to persuade principals—to get them to buy in—that the tutorial decision is a good one.

Principals now have decisions of their own to make. When presented with buy in strategies they can choose to read the superintendent's preference and demonstrate buy in—genuine or not. Another alternative is to take the persuasion efforts literally and implement if persuaded and not implement otherwise. In the latter case a principal may try to persuade in the opposite direction, i.e., convince the superintendent that she needs to work with the board to choose a different strategy. This seems unlikely, however, under conditions of a traditional hierarchy. Assume that principals decide to express buy-in.

Principals' initial decision to buy into the tutorial solution and subsequent implementation decisions are likely driven by their objectives hierarchies, which may include: 1) survival in the job (most principal positions are one-year contracts), supported by agreeing with the superintendent; 2) improving student achievement so that the school gains or retains legitimacy; and 3) keeping the peace with teachers and other staff so that they will go along with efforts to improve student achievement (successful or not) and these efforts will be visible.

No matter how they may appear to the superintendent and to their teachers, principals will have made another kind of decision regarding the tutorial program that is based on their objectives. They will look at what is proposed and may select one of three possible options: 1) embrace the program largely as the superintendent and board envisioned it; 2) engage in partial implementation by picking and choosing which aspects of a tutoring program to put in place; and 3) say what is required of them but ignore the required program, thus saving energy for other activities. A fourth option is to thwart the tutorial program actively because of a fundamental disagreement with the idea. This does not fit our scenario, however, because we have assumed at least a minimal degree of compliance.

The implementation aspect discussed in the paragraph directly above is likely tied to a somewhat different set of objectives from those articulated in the discussion about how principals would react to their superintendent and work with their staffs. In deciding how to approach implementation, principals are likely to consider: 1) the personal and professional goals they have established for themselves in the role of principal; 2) the direction in which they have led their school (if indeed there is a specific direction); and

3) their commitment to the program's success.² This second set of objectives helps us to see that individual stakeholders within a group may actually have different categories of objectives that will be more or less aligned with one another, thus creating greater possibility for differences within stakeholder groups.

For illustrative purposes, we assume that the principal embraces the tutorial program. (See Figure 5.) Similar to the superintendent, he or she must choose how to communicate about implementation of the program to staff, likely keeping in mind the above objectives and the principal's power (moderate), legitimacy (high), and urgency (low-moderate) with regard to implementation decisions. Understanding the relative autonomy of teachers and their prerogative (depending on the teachers' contract) to choose or not to choose to engage in tutorial activities, the principal seems unlikely to select the "just do it" approach. Most principals, well steeped in contemporary wisdom about developing positive human interactions, would likely choose option 2—buy in. The easiest gambit is for the principal to explain to the staff that the superintendent has chosen the tutorial option and that the principal has agreed to implement the program. The principal urges teachers to support the tutorial program for the sake of improved student achievement and to demonstrate the school's good qualities to the superintendent and board.

When principals take the buy in approach with their teachers, teachers may have the greatest freedom of choice of anyone in the system. Much of this discretion is structural. Teachers with tenure have little to fear from the board or any administrator if

² It is possible that a principal might believe that the best way to improve student performance is through more effective classroom instructional strategies. In such a case, the principal would have little stake in seeing a tutorial program succeed. Furthermore, he or she might prefer to keep teachers' energies focused in the classroom and would therefore devote few resources to the tutorial program.

they choose not to participate in a prescribed program. In states with collective bargaining, it is unlikely to be easy to compel teachers to participate as tutors for failing students. Whether teachers participate directly or not, the tutorial program is dependent on them to provide appropriate content for failing students because teachers are best positioned to know exactly what content is at the root of testing deficits. Whether teachers provide this information in a timely and accurate way is entirely up to them.

Teachers' objectives hierarchies seem likely to be similar in nature but perhaps different in content compared to those of principals. We can safely assume that teachers have student academic success as one of their objectives. As they determine how (and whether) they will implement the tutorial program, teachers are likely to consider the following additional objectives: 1) the efficient use of time and energy for the various demands of teaching and their personal lives; 2) the desire to use effective strategies for improving student achievement, in particular the degree to which they believe a tutorial program to be effective; 3) the extent to which tutoring does not threaten or impact their core teaching; and 4) their desire to help the principal succeed in the eyes of the board, the superintendent, and the community. Considering teachers' objectives, they have implementation choices similar to that of the principal—embrace, pick and choose, or ignore—and they have a fourth option to sabotage the program.

The above hypothetical scenario is greatly simplified for the purposes of illustration. The objectives hierarchies for the superintendent, principal, and teachers are likely to contain many more kinds of objectives that are more nuanced than those we have named. Nevertheless, the nested nature of educational stakeholder webs that was illustrated in figures 1 through 4 and the objectives hierarchies of multiple stakeholders

discussed above provide a basic structure for understanding how decisions—both to determine direction and for implementation—get made.

Applying Design-Based Research

Design-based research approaches provide an interactive strategy that may be as well suited to education leadership as to the classroom. Considering the above scenario, it would be possible for researchers to work with superintendents and principals to identify critical stakeholders, to help identify the objectives hierarchies of the major stakeholders, and to help leaders understand how their choices and decisions are likely to affect ultimate outcomes. In such a process, all decision makers may become savvier about how decisions get made and implemented, thus providing a benefit to their participation in research. This kind of interaction between researchers and participants is similar to the design-based research model proposed by Bannan-Ritland (2003).

What we have suggested above envisions researchers as relatively passively providing information to participants. It might be possible and desirable to move a major step further by having the researcher provide professional development on collaborative decision making. This kind of strategy would afford opportunities to make educational decision making research more innovation based, in a manner consistent with design-based research (Cobb, et al., 2003). One place to begin training school leaders could be multi-objective multi-stakeholder analysis—similar to Roche (1971) and Edwards (1979)—to see if they can use this tool to achieve their goals. To engage in such a study would create an opportunity to explore the effects of efforts to improve the quality of administrative decision making in schools while simultaneously studying decision

making processes. Perhaps most important, this kind of innovation or experimentation may have greater potential to benefit school leaders than a more passive approach.

Conclusion

Conceptualizing how multiple objectives of multiple stakeholders in the educational decision making process influence decisions and their implementation provides a useful framework from which to study decision processes up and down educational organizations. The model proposed in this chapter helps capture the complexity and uncertainty of decision making in schools and school districts. The knowledge that empirical studies based on this framework would generate might help policymakers and educational leaders better understand how to move from policy into practice and how changes happen along the way.

When a multiple objective multiple stakeholder decision problem such as which educational program to implement is encountered, the modeling method in Table 2 below and generic interview questions in the appendices serve to clarify the positions of the stakeholders. We anticipate using this approach to aid in understanding a current decision process.

[INSERT TABLE 2 HERE]

The validity of the conceptual framework illustrated in Figure 5 can be tested in schools and school districts using a design-based approach. Tracking a real decision to change course or implement a specific program has great potential benefit for gaining a clearer understanding of decision making in an educational context. By identifying relevant stakeholders and their objectives hierarchies, researchers ought to be able to make inferences about how decisions will be made and the nature of their

implementation. The validity of researchers' inferences could be confirmed or refuted by surveying and interviewing key stakeholders in the decision making and implementation processes, and by observing implementation of a particular decision.

A clearer understanding of decision processes at the district and school levels will aid policy makers and educational leaders at all levels alike as they strive to improve the quality of education. Few decisions move in simple straight lines. The kind of analysis suggested by our conceptual framework helps to capture the subtlety, complexity, and non-rational aspects of decision making in education. Armed with this knowledge, school leaders may be more capable of guiding their districts and schools in the directions they intend—not as heroes, but as knowledgeable players embedded in a web of stakeholders.

References

- Allison, G. & Zelikow, P. (1999). *Essence of decision: Explaining the Cuban missile crisis*. New York: Longman.
- Bannan-Ritland, B. (2003). The role of design in research: The integrative learning design framework. *Educational Researcher*, 32, pp. 21 – 24.
- Cobb, P., Confrey, J., diSessa, A., Lehrer, R., & Schauble, L. (2003). Design experiments in educational research. *Educational Researcher*, 32, pp. 9 – 13.
- Design-Based Research Collective (2003). Design-based research: An emerging paradigm for educational inquiry. *Educational Researcher*, 32, pp. 5 – 8.
- Edwards, W. (1979). Multiattribute utility measurement: Evaluating desegregation plans in a highly political context. In Perloff, R. (ed.), *Evaluator interventions: Pros and Cons*. (pp. 13-54). Beverly Hills, CA: Sage Publications.
- Edwards, W. (1980). Reflections on and criticism of a highly political multiattribute utility analysis. In Cobb, L. & Thrall, R.M. (Eds.), *Mathematical frontiers of behavioral policy sciences* (pp. 157-168). Boulder, CO: Westview Press.
- Keeney, R. & Raiffa, H. (1976). *Decisions with multiple objectives: Preferences and value tradeoffs*. Originally published by Wiley. Cambridge: Cambridge Univ. Press.
- Keeney, R. Renn, O. & von Winterfeldt, D. (1987). Structuring Germany's energy objectives. *Energy Policy*, 15, pp. 352-362.
- March, J. G. (1994). *A Primer on Decision Making*. New York: The Free Press.
- Pfeffer, J. (1982). *Organizations and organization theory*. Boston: Pitman Publishing, Inc.

- Roche, J.G. (1971). *Preference tradeoffs among instructional programs: An investigation of cost-benefit and decision analysis techniques in local educational decision making*. Unpublished doctoral dissertation, Graduate School of Business Administration, Harvard Univ., Cambridge, MA.
- Simon, H. (1993). Decision making: rational, nonrational, and irrational. *Educational Administration Quarterly*, 29, pp. 392 – 411.
- von Winterfeldt, D. & Edwards, W. (1986). *Decision analysis and behavioral research*. Cambridge: Cambridge University Press.
- Winn, M.I. & Keller, L.R. (2001). A modeling methodology for multi-objective multi-stakeholder decisions: Implications for research. *Journal of Management Inquiry*, 10, pp. 166-181.
- Winn, M.I. & Keller, L.R. (1999). Harnessing complexity, idiosyncrasy and time: A modeling methodology for corporate multi-stakeholder decisions. In Wood, D.J. & Windsor, D. (Eds.), *International Association for Business and Society 1999 Proceedings* of Tenth Annual conference held in Paris, France, June 1999, 482-487.

Appendix A

Preliminary Interview Protocol

The following interview protocol is intended for preliminary data collection within schools and districts using semi-structured interviews with decision makers to clarify and validate preliminary findings.

- Q1:* At what point in your school's/district's recent history did it become necessary to acknowledge objectives from a broader range of stakeholders?
- Q2:* What is the organizational structure in your school/district?
- Q3:* Given the current context in question, what are your main priorities/objectives at this point in time? How would you prioritize these objectives? How different are these prioritized objectives from the period of time prior to acknowledging the need for a strategic change? How much value is given to stakeholders in your prioritized list of objectives? What (if any) tool do you use to determine your key objectives? Your stakeholders?
- Q4:* What were your alternatives had you not chosen to make a strategic change?
- Q5:* In making the strategic change, how will you consider your stakeholders' objectives (from their perspective)? How will you derive your stakeholders' objectives? What type of communication do you have with your different stakeholder groups? How reasonable or accurate do you believe your assessment of your stakeholders' objectives to be? Do you regularly confirm your list of stakeholders' objectives with the stakeholders themselves? If so, how? Personal interviews? Secondary sources?
- Q6:* What length of term do you place on your new strategic direction (short term strategy? long term strategy? permanent change in direction?) How committed is upper management to following through with this strategic change? Is this strategic change one step in a larger strategic plan in your school/district? If so, what is the long term strategic plan in your school/district?
- Q7:* To what degree has your school/district historically responded to public pressure? How accountable is your school/district currently to public opinion?
- Q8:* What levels of your school/district will the decision in question affect? (Across schools? Administration? Teachers? Classified staff? All levels?) How is the change to be carried out in your organization? (Top down?)
- Q9:* Are there other key events or processes that will affect the impact of the decision?

Q10: How effective do you think the new strategic direction will be in meeting key objectives?

Q11: What new concerns do you expect the ultimate decision to introduce? How will different stakeholders likely respond to these? Is there any one stakeholder who is expected to respond particularly negatively? Positively?

Q12: What is the perceived relationship between administrators and teachers? Has it changed recently? How? Where would you like it to go?

From: Winn and Keller (1999, Appendix 3), modified for contemporary decision making in an educational setting

Appendix B

Decision Interview Protocol

1. In general, what stakeholders do you consider as important to your school/district? Who are they and how important are they?
2. What are the most important objectives of your school/district today?
3. Are there primary objectives of your main stakeholders that are in conflict with the objectives of the school/district today? (How did you derive your stakeholders' objectives? What type of communication do you have with different groups?)
4. If you think back to before the current situation, what were the most important objectives of your school/district at that point in time?
5. If you think back to before the current situation, what were the key pressures from stakeholders at that point in time?
6. What specifically led to the decision to make a change? What were the internal and the external pressures? Did you consider your stakeholders' objectives?
7. What are the alternatives in this decision? (maintain status quo/do "x"/do "y")
8. To what extent do you anticipate being able to meet your most important objectives?
9. Who will be involved in actually making the decision? Who raised the issue in the first place? Who will champion the ultimate decision? What kind of resistance do you anticipate? From whom?
10. How do you believe the ultimate decision will affect your school's/district's relationship to important stakeholders?
11. What new concerns do you expect the ultimate decision to introduce? How will different stakeholders likely respond to these?
12. What are the key pressures from the most important stakeholders today?
13. How has the importance of these stakeholders changed in recent months/years?
14. What length of term do you place on your ultimate decision (short-term, long-term or permanent change in direction)? Is top management committed to follow through?
15. What are the key issues you have to deal with now? Over the last 3-4 years? Are there other key issues that can affect the outcome of this decision?
16. Which one of these issues has been most important for your school/district?
17. Where did the pressures come from to deal with this issue (internal and external)? Were there any political struggles around this issue?
18. What other important issues did not make it on the school/district agenda? *Should* these issues be addressed?

From: Winn and Keller (1999, Appendix 2), modified for contemporary decision making in an educational setting.

Table 1

Hierarchy of Objectives for Evaluation of School Desegregation Plans

Objectives

A. Effect of a Desegregation Plan on Racial-Ethnic Composition

Aa. Racial-ethnic proportions of pupils moved from local schools

Ab. Racial-ethnic proportions in resulting schools

Ac. Racial-ethnic proportions of pupils bused

Ad. Number of grades affected by reassignments

Ae. Duration in weeks of integrated educational experience

Af. Numbers of students remaining in isolated schools

Ag. Provisions for reduction of racial-ethnic isolation in still segregated schools

Ah. Provisions for effectively preventing the resegregation of integrated schools

B. Effect of a Desegregation Plan on Educational Quality

Ba. Impact of a plan on student-teacher ratios

Bb. Impact of a plan on classroom heterogeneity

Bc. Impact of a plan on staff attitudes

Bd. Impact of a plan on student attitudes

Be. Impact of a plan on learning of basics

Bf. Impact of a plan on participation of volunteers

Bg. Impact of a plan on availability of pupil options

Bh. Impact of a plan on average student-teacher contact hours per day

Bi. Impact of a plan on availability of multicultural education

Bj. Impact of a plan on teacher quality

Bk. Impact of a plan on adequacy and use of facilities

Bl. Impact of a plan on identification of pupils with their home schools

Bm. Availability of special programs for students with special needs

Bn. Impact of a plan on learning of interracial and interethnic acceptance

C. Community Acceptance of a Desegregation Plan

(8 subobjectives not listed here)

D. Implications of a Desegregation Plan for District Personnel

(4 subobjectives not listed here)

E. Destabilizing Effects of a Desegregation Plan

(5 subobjectives not listed here)

F. Provisions within a Desegregation Plan for Monitoring and Evaluation

(7 subobjectives not listed here)

From Figure 12.7, pp. 466-469 in von Winterfeldt and Edwards (1986)

Table 2

The Multiple Objective Multiple Stakeholder Modeling Method

Steps	Operations
STEP 1. Find Sources	Identify Stakeholders Identify Decision Makers Identify Other Data Sources
STEP 2. Find Data	Identify Decision Timeline Identify Alternatives Identify Objectives Identify Possible Events Identify Alternative Chosen
STEP 3. Model Decision Frame Timeline	Determine Decision Phases Determine Key Decision Elements in Each Phase Develop Decision Frame Timeline
STEP 4. Model Objectives Hierarchies	Identify Objectives of Different Stakeholders Model Hierarchies for Main Stakeholders Model Multiple Hierarchies for Primary Stakeholder
STEP 5. Validate Timeline and Objectives Hierarchies	Ask Decision Makers Ask Other Stakeholders Check Consistency With Available Information
STEP 6. Evaluate Decision Process	Score Alternatives with Objectives Hierarchies Compare Choice with Other Alternatives

From: Winn and Keller (2001)

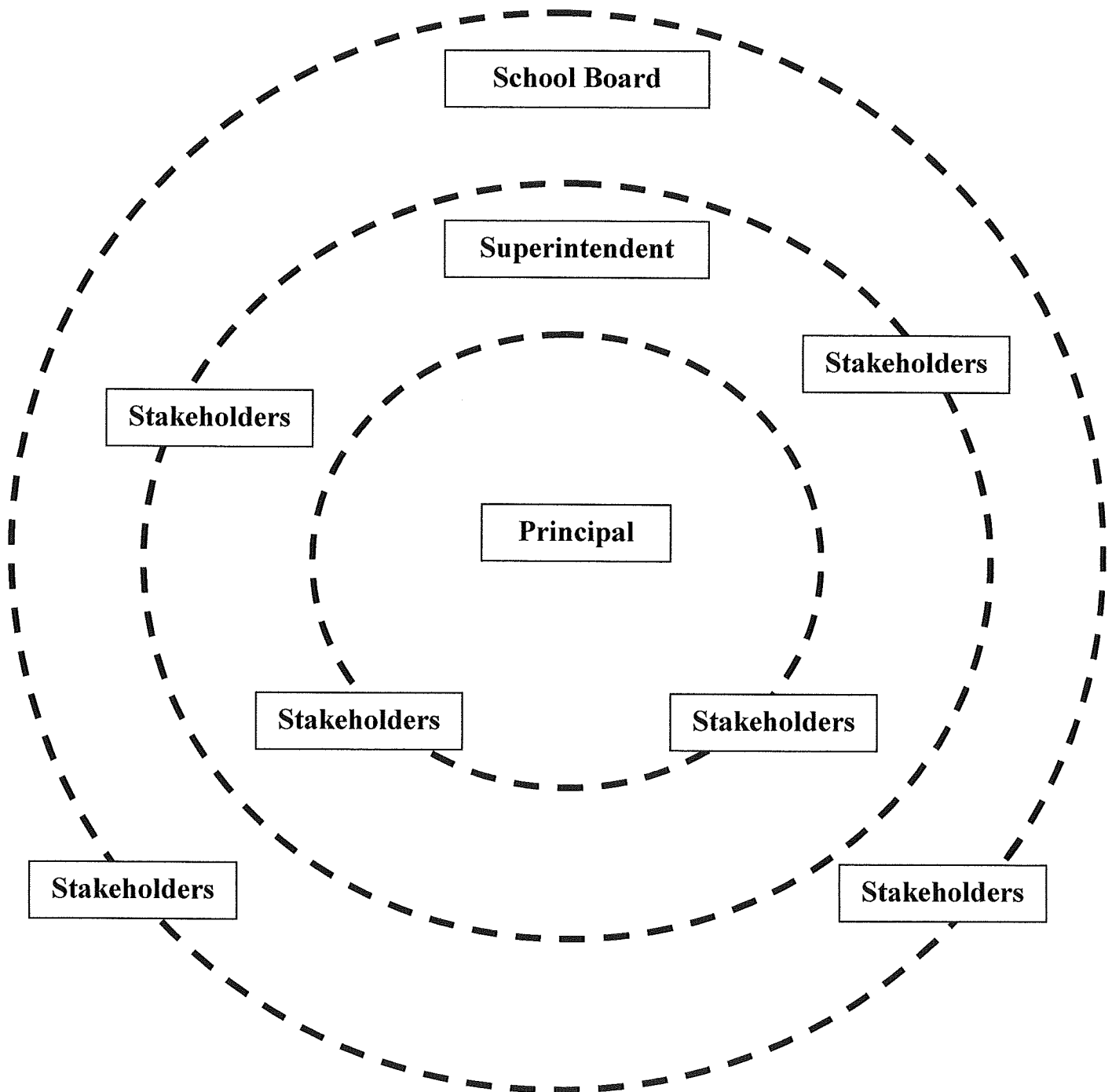
Figure 1. Nested stakeholder webs.

Figure 2. The school board's stakeholder web.

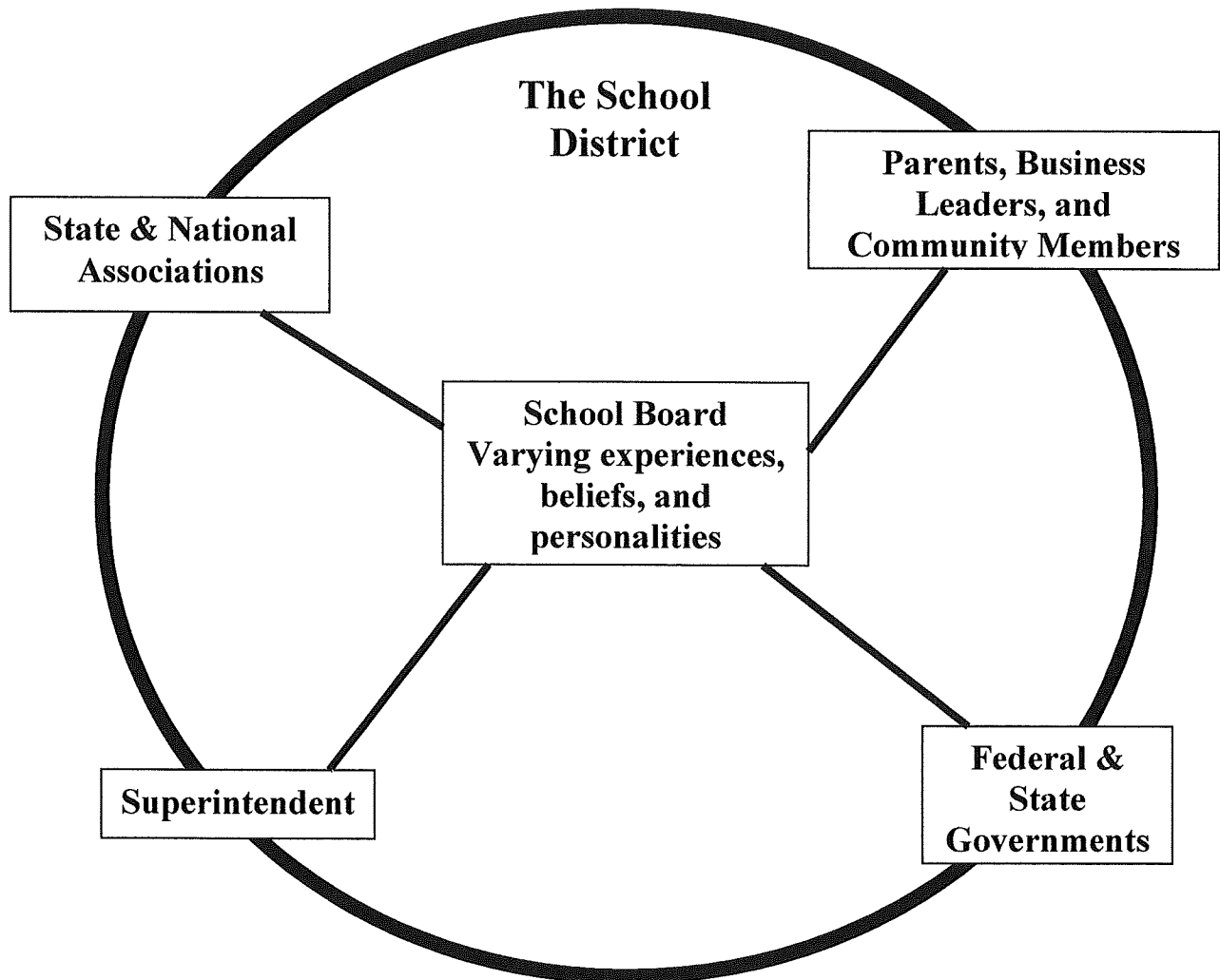


Figure 3. The superintendent's stakeholder web.

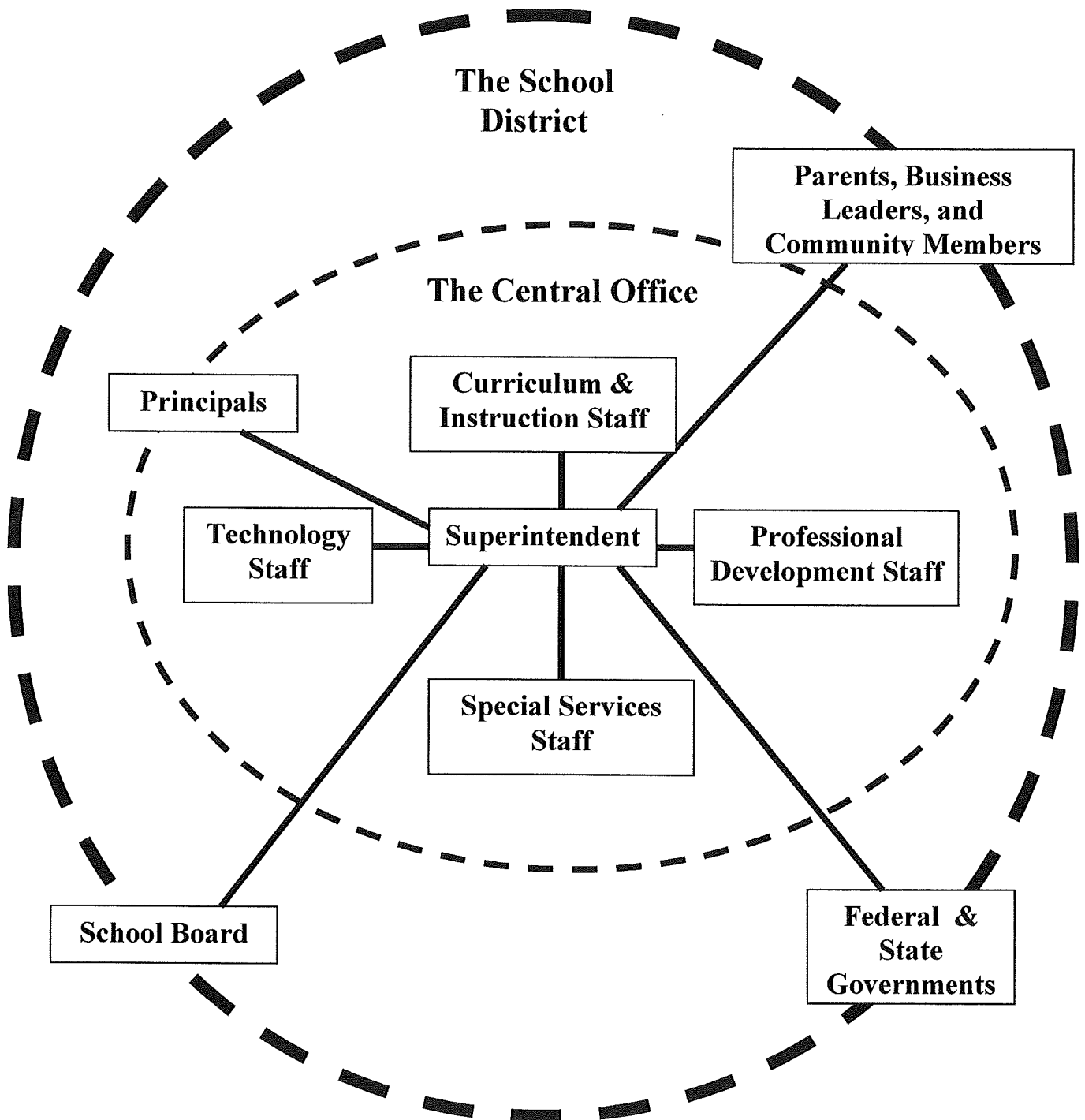


Figure 4. The principal's stakeholder web.

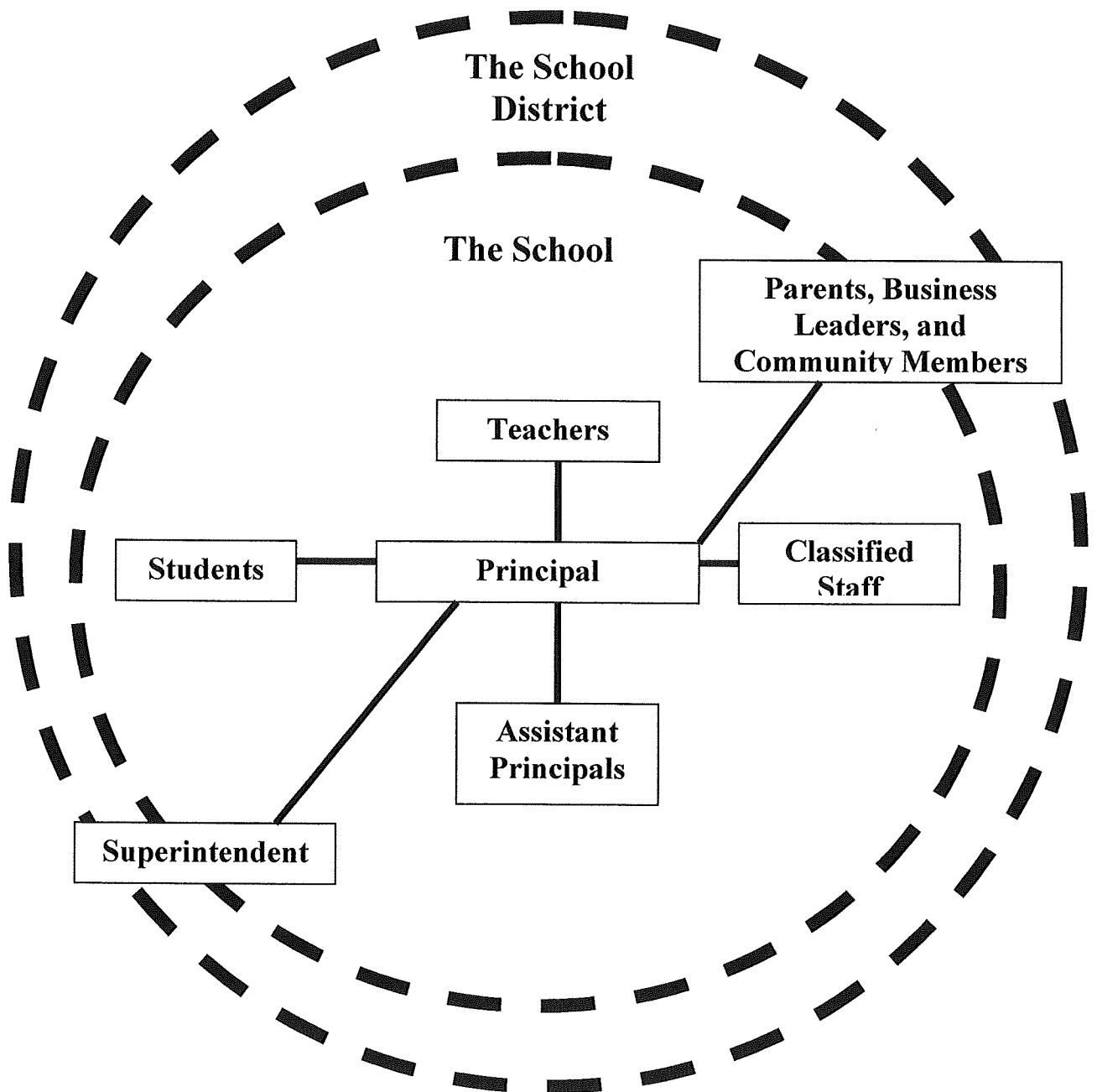
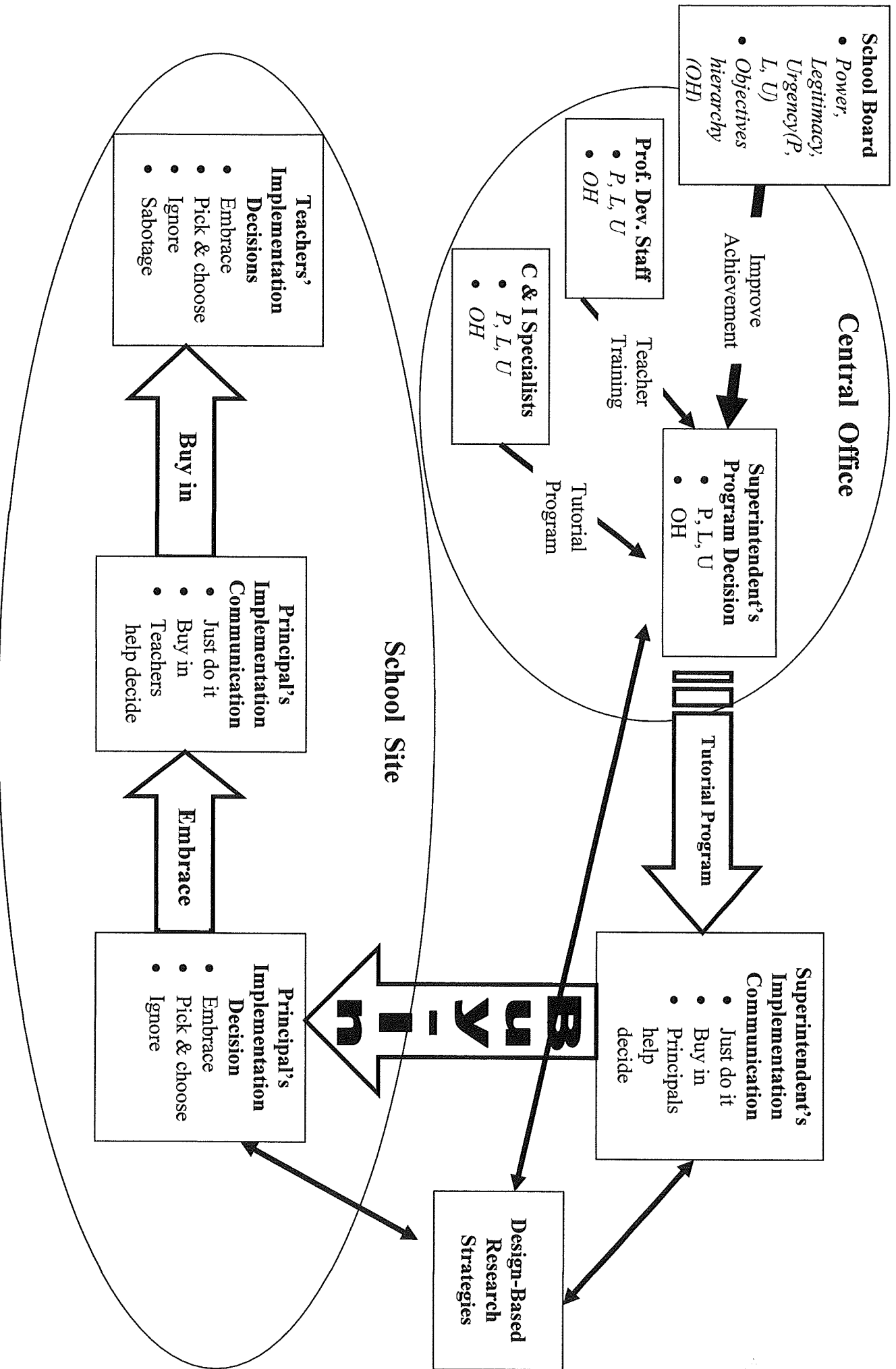


Figure 5. Conceptual framework to explore educational decision making.



-----Original Message-----

From: akelly1@gmu.edu [mailto:akelly1@gmu.edu]
Sent: Friday, August 29, 2003 1:48 PM
To: David Brazer
Cc: Keller, Robin; rleshe@purdue.edu
Subject: Re: [Fwd: status of our paper and book it will go into , we hope]

Hi Robin and David,

I have read the paper carefully, and I can say with confidence that some version of it will appear in the book. Hope this is close to what you need, Robin.

When I say "some version," I mean that for the paper to fit with the others in the book, it will need to move some pieces around.

It should probably have the design research piece up nearer to the front. Most of the readers will want to read your piece to know how a finding from educational research (in this case from design studies) actually gets thought about and used (or ignored) by administrators and actors, in practice.

In this way, your paper resonates with Rogers' work on diffusion of innovations, and I would like to see his framework used more explicitly (particularly, the sections that involve teachers adopting an innovation).

So, with a revision or two, I think we can have a chapter from you that is a unique contribution to the book.

Thanks for taking the time to write it.

Cordially, Eamonn

Anthony (Eamonn) Kelly
Professor
Graduate School of Education
George Mason University
4085 University Drive

Fairfax VA 22030
703-993-2019
703-993-2722 (fax)
akelly1@gmu.edu

"Whoever wishes without proof to reveal in the truths of things need only know how to neglect experience."

Francis Bacon -- On experimental science -- 1268

----- Original Message -----

From: David Brazer <sbrazier@gmu.edu>

Date: Monday, August 18, 2003 4:06 pm

Subject: [Fwd: status of our paper and book it will go into, we hope]

> Hi Eamonn,

>

> I received the forwarded message from Robin today. I think

> we can all be sympathetic to the need to get publications

> recognized in portfolios in a timely way. Is it possible for

> us to expedite the review process at all? If you and Dick

> believe the chapter has strong potential at least, that

> might help. Thanks.

>

> --David

>