Using Information in Higher Education Decision-Making: 
Modes, Obstacles, and Remedies

Peter T. Ewell

Draft 2

If the research literature on the use of information for decision-making and instructional improvement in K-12 school settings is thin, in higher education it is practically non-existent. Most of the extant treatments of the topic are included as part of larger treatises on how colleges and universities work as organizations and, for the most part, mirror what is said in the literature on organizational behavior or decision theory (e.g. Birnbaum, 1989; Clark, 1983; Chickering and Associates, 1988). But this does not mean higher education lacks exhortations to get better at using information or tips and advice about how to go about doing so. Indeed, as Coburn and Turner concluded for K-12, “in many ways, practice is way out ahead of research (Coburn and Turner, 2010, 42)” in higher education as well.

This dominance of practical discussions over systematic research is due to a number of factors that characterize college and university information settings. First the practice of information use has been largely framed by the profession of Institutional Research. Institutional Research offices were created in large numbers during the great expansion of American higher education that occurred in the 1960s and 1970s, and they are now present on most college campuses. Their original purpose was to collect and disseminate information about such matters as enrollment, finance, and institutional operations to help inform strategic planning and decision-making. As a result, much of the literature on information use in collegiate settings has been produced in the form of practical guidance to Institutional Researchers (e.g. Knight, 2003; McLaughlin and McLaughlin, 2007). Unfortunately, the actual practice of Institutional Research at most institutions, in parallel with the K-12 arena, is currently dominated by compliance reporting to government bodies and other external stakeholders. This shift of attention has frequently diverted attention from the profession’s original function in generating information to support decisions.

Potentially reinforcing good practice, moreover, is a variety of information-rich evaluation processes that are regularly used at most colleges and universities. Public institutions, for example, frequently engage in a regular process of program review, in which all academic programs are critically examined within a five to seven year period with an eye toward their improvement. Among the data typically used in these reviews are enrollments/degrees awarded, graduation and retention rates, student-faculty ratios and similar productivity statistics, information about academic personnel and their deployment, and data on program costs. Similarly, higher education’s principal quality assurance mechanism—accreditation—usually involves the prominent display of similar institutional or programmatic performance statistics. And as discussions of
accountability in higher education continue to escalate, these performance measures are increasingly supplemented by direct assessments of student learning outcomes. While a closer look at these processes reveals that information like this is more frequently displayed than actually analyzed by evaluators, they remain highly visible features of the higher education landscape.

Finally, there are several topics in higher education that have generated large amounts of information intended to improve practice. This does not mean that the information generated has been used, however. For example, there is a fifty-year-old tradition of research on student retention and graduation that has generated hundreds of published empirical research studies. But a recent national conference on student success sponsored by the National Postsecondary Education Cooperative (NPEC) reached the stark conclusion that colleges and universities had progressed very little in their ability to process and apply this knowledge effectively (Ewell and Wellman 2007). A similar gap between collecting and using information was a prominent finding of a recent national survey of institutional practices in assessing student learning outcomes (Kuh and Ikenberry, 2009). Despite the presence of a strong inclination to use information for improvement, and a literature of exhortatory practice, higher education has not made a great deal of progress as yet in using what researchers know.

This paper is intended to broadly characterize the state of information use and its associated literature in higher education in a manner that broadly parallels Coburn and Turner’s treatment of the K-12 scene, with examples that I intentionally limit to organizational and administrative decisionmaking. It addresses four topics. First, I examine some alternative uses of information that go beyond the traditional rational decisionmaking model. Second, I describe the conditions that render colleges and universities organizationally distinctive as settings for information use. Third, I review some general points on information use drawn from the literature on organizational behavior and decision theory, with a particular emphasis on their application to colleges and universities. Finally, I present a framework for inquiry on information use in higher education, together with some concrete suggestions for researchable projects that the Spencer Foundation might consider.¹

**Alternative Uses of Information.** The first formal attempt to characterize the issues associated with information use in higher education opened with a now-familiar distinction between “data” and “information” (Jones, 1982). Dennis Jones was writing in a period that witnessed a virtual explosion of automated data systems in colleges and universities that were producing a flood of data without much interpretation or nuance. Echoing contemporary theorists in organizational studies like Ackoff (1961) and Churchman (1975), he concluded that what distinguishes “information” from “data” was

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¹ Because of the dearth of formal research on the use of information in decisionmaking in higher education, many of the points I make in this paper are derived from experience. In 1981-84, I led a demonstration project funded by the W.K. Kellogg Foundation on the use of student outcomes information in program planning and decisionmaking involving twenty-three institutions (Ewell 1984) and have consulted on this and other topics at over three hundred colleges and universities nationwide. Whenever published research supports a point, I provide a citation. If a point is sustained by experience, I flag it with an asterisk (*).
the presence in the former of a use, a user, and a context. While the relevant properties of “data” are technical—accuracy, reliability, and representativeness—those surrounding “information” are invariably cultural and situational—relevance, acceptability (what we would now term “face validity”), timeliness, and completeness with respect to the ability to make a given decision. Jones then went on to broadly describe the ideal properties of a “management data base” in higher education, suited primarily to strategic planning and decision-making at the institutional and system levels.

Jones’ conceptual exploration rested heavily on the classic organizational application of information drawn from the literature on decision theory—to reduce uncertainty in choosing among two or more proposed alternative courses of action. But almost no real application of information works this way. Instead, four alternative uses of information appear to characterize higher education settings (Ewell and Chaffee, 1984):

- **Problem Identification.** One of the most common applications of information in any setting is simply to signal that a problem or condition is present. In higher education, for example, statistical performance indicator systems or “dashboards” are frequently established to track progress or monitor current conditions. Experience suggests that the number of indicators used in such applications be kept limited, that the dimensions of performance they tap be orthogonal or mutually reinforcing, and that the way they are displayed highlight deviation from a standard or show trends over time. Information used in this way does not contribute directly to the process of decisionmaking. It instead represents the beginning point for decisionmaking by suggesting that decisions of a certain kind need to be made.

- **Context Setting.** At the opposite end of the spectrum of use, much information is used in combination to provide a broad context for a particular set of actions. For example, a university committee charged with designing a comprehensive first-year experience program may first engage in a wide-ranging process of assembling data about the current freshman experience including disaggregated statistics on retention, results of student surveys, and descriptions of available programs and services. This background information will not be used to inform any particular decision, but will instead be used collectively to characterize the setting in which any action will occur. In contrast to problem identification, where the information-attention link should be almost instantaneous, using information for context setting is less urgent and more reflective. The type of information required, moreover, can be less numeric and precise, and should come from as wide a range of sources as possible.

- **Inducing Discussions.** Somewhat like problem identification, information is frequently used in group settings like committees just to get people to talk about a topic. In the absence of data, faculty conversations frequently lack concreteness and direction. In contrast, beginning committee discussions with a few specific

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2 As in the well-known “Balanced Scorecard.”
pieces of information designed to elicit participant reaction can often spark focused problem-specific interpretations or ideas. Once again, information is not used in actually helping participants make any decisions, but it is used to get them off dead center in generating decision alternatives and providing bounds for the resulting deliberations.

- Selling Decisions. Finally, one of the most frequent uses of information in colleges and universities is as part of the act of persuading stakeholders to accept a course of action that has already been decided upon. As Feldman and March (1981) cogently observe, information frequently acts as a “signal and symbol” that a decision has been taken rationally even though the information in question never actually entered the decision process. This effect may well be magnified in a college or university environment in which information is valued in itself. Ironically, of course, this application reverses the classic decision theory cycle because the information is deployed after the decision is taken.

These four alternative applications of information in higher education settings are at this point simply reported from experience over thirty years of observation. But they could be more fully defined and expanded as part of a formal taxonomy of information use in education, which could then be tested through research.

**What Makes Higher Education Distinctive?** Many of the points Coburn and Turner make about information use in K-12 districts and schools apply equally to colleges and universities—just as they apply to many other complex organizations. But the higher education environment also has some distinctive features that are likely to affect the manner in which those who inhabit it identify, collect, interpret, and display information. This section describes these features in terms of specific organizational and cultural characteristics. Following Coburn and Turner’s treatment of the K-12 environment, moreover, this discussion is largely confined to the realm of academic administration, so does not address information use in areas such as student affairs or in institutional administration.

- Organizational Characteristics. Colleges and universities are characterized by flat hierarchies and considerable decentralization of authority (Birnbaum 1989). The basic decisionmaking unit outside of professional schools is typically the academic department, which is largely autonomous with respect to decisions about what courses to offer, how theses courses will be scheduled and staffed, which faculty members are rewarded with promotion/tenure or sabbatical, and what research will be housed and supported.* Structures above the academic department like colleges or schools tend to be aggregations of convenience in these disciplines. Medical Schools, Colleges of Engineering, Business Schools, and other professional schools are significant exceptions because Deans frequently exercise considerable independent authority, but even in these cases faculty remain relatively autonomous. These typically flat decisionmaking hierarchies are accompanied by very few channels of lateral communication. This combination of organizational characteristics is what led Karl Weick to describe
universities as “loosely-coupled systems” in his comprehensive treatise on how universities operate (Weick, 1976), and they can decisively shape how information flows and how it is used.

A first implication of significant unit-level autonomy is that different information may be used or the same information may be used differently within each unit.* As noted below, this is potentially amplified by the fact that different disciplines value different kinds of information. This structure also means that areas where responsibilities are shared—for example the shape and conduct of the general education curriculum—may be relatively information-poor. In larger universities, for instance, the amount and quality of information on learning outcomes gathered through assessment is more apparent at the department level that for the institution as a whole (Kuh and Ikenberry, 2009). Finally, despite the existence of central offices like institutional research and a good deal of raw data on things like enrollments through registration databases, there is little consistency with respect to interpreting information.* Each department may work independently to make sense of seemingly comparable performance statistics like graduation rates or cost per credit ratios because no common benchmarks have been established.

A second salient feature of college and university organizational structures that has considerable influence on how information is used is the heavy delegation of decisionmaking to faculty committees. Much of the energy invested by any committee when information is introduced is directed toward negotiating what it means (Astin, 1976). The committee’s job is to achieve sufficient consensus to move forward, but this requires first agreeing on which pieces of information are trustworthy and useful. And committee members’ views about the veracity and importance of each piece of information discussed will probably depend, not only upon their prior experience and disciplinary background, but also on the extent to which they favor or oppose a given action. To be used effectively in committee settings, therefore, any information introduced into the discussion must be easy to understand and “face valid,” and must be compellingly presented.* On the first point, the technical capacity of the committee to interpret information is as strong as its weakest member. And on the second, the heavy use of simple visual displays, as well as numbers, may allow a wider range of committee members to grasp the main message.3

- Cultural Characteristics. With respect to conditioning information use, the culture of the academy is even more relevant than its organization. To begin with, most academics—even those who have become administrators—tend to shun administrative work instinctively.* The deliberate use of information is frequently seen as part of the administrative realm. So any information except the products of disciplinary scholarship is automatically accorded lesser respect. Colleges and universities are also not so much hierarchies of position than they are hierarchies of prestige. As a consequence, institutions, disciplines, and

3 Data displays in the “Diversity Scorecard” project provide an especially good example of how well-constructed data presentation can achieve rapid consensus in a committee setting (see Bensimon, 2004).
individuals command respect not according to how they measure up on an ill-defined, but extremely pervasive, ranking of their reputation among peers. This means that the same information will not be equally valued or persuasive when offered by sources that are not of equivalent status.\(^4\)

By far the most relevant cultural characteristic affecting information use in the academy, however, is the culture of the discipline.* Disciplines differ markedly in how they define and value different kinds of information and these innate preferences are inculcated, subtly but almost indelibly, through disciplinary training. Studies of how faculty approach typical problems using Holland’s typology of personality traits, for instance, show them highly correlated to academic discipline (Smart, Feldman, and Ethington, 2000). An administrator or committee member drawn from the hard sciences or engineering, for instance, will probably value quantitative information more favorably than one trained in philosophy or history. Disciplines also differ in how they approach a problem more generally, which can also decisively affect the ways they use information.* The hard sciences and engineering (and to some extent the social sciences that try to imitate them) tend to approach problems analytically—breaking down the problem into components and addressing each component individually. Disciplines like biology, mathematics, or music tend to look for patterns of relationships among multiple elements. History and literature tend to approach topics more holistically, adopting different perspectives on the same body of evidence to make meaning. These analytical preferences may mean that individuals drawn from some disciplines may be more comfortable and effective in different decision contexts. The analytical approach, for instance, may be relevant and important for things like budgetary decisions but may not be at all useful, indeed counterproductive, in more nuanced areas like personnel decisions.

These characteristics will strongly affect how faculty and administrators trained in these various fields react to particular kinds of information and evidence-based arguments. With respect to the way they process information, moreover, disciplines grouped in the same broad categories may or may not resemble one another in the way they approach information. Musicians, for instance, look like mathematicians in the way they approach information, while visual artists look like historians. This is what is behind the well known wisdom of practice among consultants in higher education, that the first thing to know about the provost with whom one is working is her or his academic training (Ewell, 1989).

Finally, the scholarly training and habits of mind of all those in the academy lead to a basic contradiction with respect to using information in any practical forum.* On the one hand, scholarly training values knowledge in its own right. This means that academics should value information innately and should be inclined to

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\(^4\) A telling illustration of this phenomenon is how information about student learning outcomes is frequently received. Because it is couched in the language of education and business—not the leaders in most institutional prestige hierarchies among disciplines—assessment is often rejected as non-scholarly by higher prestige disciplines like philosophy or history.
use it whenever possible in their deliberations and to aid decisions. But on the other hand, scholarship is never finished and, because of this, every conclusion drawn on the basis of available information is tentative and open to further test. This means that academics are reluctant to stop seeking more information and start taking action. The resulting practical dilemma—well known in academic committee work—yields a perpetual search for more information while avoiding closure on any subject.

What Affects Information Use? This section describes factors that condition information use in terms of the interaction of three factors—properties of the information itself, the nature of the decision to be made, and characteristics of the decisionmaker and organizational setting. Most of the points noted here are drawn from the broader organizational studies literature but most also have specific manifestations in college and universities.

- Properties of Information. Separated by almost three decades, Jones (1982) and Coburn and Turner (2010) provide cogent and comprehensive treatments of the many properties of information that condition its use in educational settings. Among those most salient of these are the distinction between quantitative and qualitative information, precision and error (“validity and reliability” in their technical guise), relevance to the decision or problem at hand, timeliness with respect to the decision or problem at hand, and verifiability or ability to be replicated. But some of these properties take on additional characteristics when found in college and university settings. As noted earlier, the distinction between quantitative and qualitative information, for instance, may become particularly important across variations in academic discipline.* And it is important to emphasize that these disciplinary preferences for particular kinds of information are rarely expressed explicitly, but are instead embedded in an unexpressed web of preferences. This is what can occasionally make the work of interdisciplinary committees on college campuses so frustrating, because few of their members share the same set of informational preferences, but they do not know that they don’t.

Also relevant here is the manner in which indicators are constructed. Indicator systems became quite popular in state accountability systems for public higher education in the 1990s, occasioning several attempts to inventory their domains (Burke and Minnassians, 2003.). But less attention was typically paid to the important matter of the extent to which the technical properties of a given indicator—essentially how it is constructed—are appropriate to the job it is meant to do. For example, Ewell distinguished three types of indicators then in use to drive performance funding systems in higher education (Ewell 1999). Straight counts—for example, the number of faculty in Chemistry or the number of African-American graduates in a given year—are easy to collect and interpret. Ratios based on straight counts—for example, a graduation rate or a student/faculty ratio—add the complexity of defining the relationship between two statistics, raising such issues as what gets counted in the numerator or the
denominator. “Second-Order” measures such as survey responses and test scores add the further complexity of inference from the measure itself to the underlying concept that it is designed to operationalize, not to mention potential errors due to statistical sampling error, non-response, and response bias. One conclusion, violated frequently in practice unfortunately, was that “Second Order” statistics should not be used in consequential decisions. The long-standing Tennessee performance funding scheme, for example, uses test scores on national general education examinations to help award additional dollars to high performing institutions, despite the fact that the standard errors associated with the relevant measures are so high that institutions are sometimes rewarded on the basis of random variation.*

Two final properties of information especially relevant to college and university decisionmaking situations are face validity and “weight of evidence.” Face validity, of course, refers to the need for the information presented in the kinds of social persuasion contexts that especially characterize faculty deliberation to not only be valid but to look like it is valid and can be trusted. Misunderstandings based on lack of face validity, for example, frequently come up in committee discussions of the implications of student survey data because some members of the group mistrust data based on samples (especially when responses contain relatively few students from their own departments) or because they simply do not believe what students report about themselves and their behaviors.* “Weight of evidence,” in turn, comes into play when a case for a particular course of action is made supported by bodies of information, no one of which would individually be sufficient to support moving forward. For example, a student survey administered annually over a five year period may show a response for a particular student population in every one of those years that is below that of the rest of the student population, but just below a given threshold of statistical significance. The “weight of evidence” principle may suggest treating the difference as real because it shows up consistently over a fair number of independent trials.

- **The Nature of the Decision to Be Made.** The second dimension of the three-way interaction conditioning the use of information to be considered are properties of the decision situation in which information is applied. Aside from the domain of the decision—that is, what it is a decision about—three main properties are relevant. The first, urgency, describes how pressing the decision is and how quickly it must be made. The second, complexity, describes how many different facets of the decision there are about which information is needed. The third, consequentiality, centers on how much taking the correct decision matters—or put another way, the risks of being wrong and to whom.

These three properties of the decisionmaking situation, in combination, define the kinds of information that will be most useful. Urgent, simple, consequential decisions—for example, the decision to exit when someone yells “fire” in a crowded theater—will, in general, require far less precision to trigger action than will more complex and less consequential decisions for which a good deal of time
is available. For a similar but opposite set of reasons, non-urgent and consequential decisions will appropriately require the highest level of available precision and analysis (c.f. Ackoff 1961). Most major administrative decisions in higher education settings tend to be fairly leisurely (a year is a typical time horizon), moderately complex, and not very consequential.* Discussions of situations such as these tend to attract large volumes of not very good information—a version of the old saw that disputes in academic settings are so bitter because the stakes are so small.

- Characteristics of the Decisionmaker and Organizational Setting. The third dimension of interaction in the triad consists of characteristics of the individual person making the decision and the organizational setting in which (s)he is located. Hackman, for example, distinguished a number of such characteristics for individuals in academic settings founded on the psychology of perception (Hackman 1989). Among these are familiar “learning style” preferences for particular types of information displays—for example, graphic, verbal, or quantitative. The last of these can be particularly relevant because of intense phobias on the part of some individuals with respect to numbers, which can shut down other areas of perception as well. In addition to these innate decisionmaker perceptual preferences, information use will also be affected by the experience of the decisionmaker with certain types of decisions and her or his consequent familiarity with associated types of information. But probably the most important single decisionmaker characteristic in the academy, as discussed earlier, is the individual’s disciplinary training.

Turning to the effects of organizational characteristics, Chaffee created five ideal types for organizational structures—formal rational, collegial, bureaucratic, political, and anarchic—each with a different approach to using information. For example, the goal of information use in the formal rational type is “to identify the alternatives with the maximum cost-benefit ratio” while that of the political is “to persuade contenders toward a self-interested favorable outcome (Chaffee, 1982, 6). And she pointed out further that these organizational characteristics might not only describe the decisionmaking environments of particular institutions or subunits within them, but also be typical of different spheres of decision within them. For example, financial decisionmaking at a given college might be bureaucratic while academic decisionmaking is collegial. Once a given decisionmaking environment is correctly classified, Chaffee argued, actors within it can identify the most effective ways that information can be deployed. This hypothesis, however, has never been tested empirically nor have the ideal types themselves been defined operationally. Doing so might provide a fruitful avenue for future research on information used in college and university settings.
A Framework for Generating Research Questions on Information Use. As is the case in K-12 settings, cross-combinations of all the factors outlined in the previous two sections can potentially generate myriad ideas for researchable questions on information use in higher education settings. Figure 1 is an attempt to conceptually organize this task, based loosely on Coburn and Turner’s schema (2010, p.3).

Figure 1

The information use sequence that this diagram depicts begins with a presenting problem that requires action of some kind. This leads to the information-action process—the act of generating or providing information with specific characteristics to a decisionmaker or deliberative body charged with addressing the problem. The information-action process, in turn is located within a larger organizational context (unit or institutional) with its own set of characteristics that condition information process. The sequence ends with a set of potential outcomes with respect to the presenting problem. For example, a presenting problem might be higher numbers of entering students requiring remediation in mathematics as indicated by a dashboard indicator system. Institutional Research is directed to generate breakdowns of test performance by a range of demographic and educational background factors provided to the mathematics faculty and the college retention committee. Deliberations of these groups, conditioned by their various characteristics, result in a new placement policy. As an additional example external to the institution, a presenting problem may be a new demand for accountability about student learning outcomes on the part of the state legislature. The institution’s top leadership assembles assessment data from a variety of sources throughout the institution, with the process again conditioned by organizational context factors, and develops a performance report. The result is enhanced confidence on the part of a key stakeholder community.

Each stage of this sequence can be further described and used to generate examples of researchable questions about collegiate information use. Because Figure 1 is a conceptual scheme describing an “ideal type” for information use, these questions are
limited by the assumptions embedded in the model. But because there is so little actual research on information use in higher education to guide construction of an empirical model, these conceptually-grounded questions can be taken as a starting point. More realistically, the final part of this section presents some more systematic lines of potential research and some initial directions that the Spencer Foundation might pursue.

- **The Presenting Problem.** This may be a decision but, consistent with the alternative information uses discussed in the opening section, it may equally be the need to signal that a problem is present, set a context, induce discussions of alternatives, or to sell a decision already taken. Additional elements of the presenting problem are its urgency and its consequentiality. Does it have to be addressed immediately and what are the costs of choosing the wrong set of actions? And as the “fire in the theater” example noted earlier suggests, these may interact in important ways with respect to using information. Potential research questions associated with this part of the information use sequence include:

  o Is information more frequently deployed intentionally for different kinds of presenting problems? For example, is it more likely that visible information use occurs in the decision to launch a new program than in a review of teaching effectiveness?

  o Does the interaction between urgency and consequentiality have an impact on the kinds and quality of information that academic leaders ask for and deploy?

  o Do decisionmakers or committee members drawn from different disciplines have systematically different patterns of risk aversion in making highly consequential decisions and does this affect the degree of precision they demand in the information they ask for and use?

- **Organizational Context.** Key elements of the organizational context potentially conditioning the Information-Action process are of two kinds. The first refers to the characteristics of the organizational setting themselves, both structural and cultural. These will consist of specific manifestations of the relevant aspects of the characteristics distinctive to colleges and universities that can potentially affect information use discussed earlier. A second set of elements addresses the institution’s capacity with respect to information including both how much information (and of what kinds) it has to draw on and how much capacity is available to analyze this information. Potential research questions associated with this part of the information use sequence include:

  o Does information availability condition the probability of closure in an academic decision? For example, if a great deal of information is available, will decisions take longer for a faculty committee to make because of what is seen to be a compelling need to “examine all the data?”
o How much variation occurs across departments with respect to the kinds of information they explicitly seek and use in making similar decisions about curriculum and academic policy?

o How much of the data that an institution regularly collects through registration records get converted through analysis into usable information? What organizational factors seem to condition the extent to which it does?

• Potential Outcomes. The potential outcomes of the information use sequence are, of course, specific to the presenting problem. But the most important classes of outcomes are probably those associated with changes in student learning, changes in institutional or programmatic practices, and changes in stakeholder relations. Research questions are not specifically associated with outcomes, but rather with their interaction between other parts of the information use sequence.

• The Information-Action Process. This component forms the heart of the information use sequence, so what happens within it is of paramount importance. As a subsystem operating within an organizational context it consists of three components—an information source which provides information, the specific information provided, and a receiving decisionmaker or deliberative body (e.g. a committee) which brings the information to bear on the presenting problem. Each of these components has a set of characteristics that potentially bear on the information use phenomenon that is worth distinguishing. In addition, the two interactions between each pair of components are also an integral part of the Information-Action Process.

For the Information Source, it is first relevant to know the purpose for which it is constituted— for example, if the source is Institutional Research, the purpose is to provide information on demand to assist administrators. Two additional factors are authority and distance. Information from an authoritative source operating within a defined area of competence, for instance, will probably be accorded more validity than one that lacks these characteristics. Distance refers to how far removed the source is from the receiver. This can potentially affect use in two opposite ways. On the one hand, a less distant source may be more familiar, and therefore trusted. On the other, a more distant source may be accorded more legitimacy, especially if it is authoritative. And, as this last observation emphasizes, the combination of these characteristics may be more important in influencing information use than each characteristic independently. Potential research questions associated with the Information Source are:

o To what extent do the authority and distance of an information source influence perceptions of the credibility of the information provided in the eyes of members of a faculty committee? Does this vary by discipline?

o Is information from particular kinds of sources more or less convincing to the external stakeholders of a given institution in an accountability situation?
Do the deliberations of a faculty committee reach closure more quickly if a representative of an information source (e.g. an Institutional Researcher) is present and part of the dialogue?

For the Information itself, three factors are likely to be relevant. The first is the technical quality of the information itself in terms of accuracy, validity and reliability. The second is the relevance of the information to the presenting problem (or its perceived relevance on the part of the receiver. The third is the timeliness with which the information is provided to the receiver. Potential research questions associated the Information itself are:

- How frequently is irrelevant information used in making particular kinds of academic decisions? What difference does doing so make with respect to decision outcomes?
- Does the choice of which kinds of information to use by a decisionmaker in terms of levels of precision, relevance, and timeliness vary with the consequentiality associated with the presenting problem? Put another way, do academic decisionmakers act as rational consumers of information as predicted by decision theory?
- How frequently is data on information quality (e.g. confidence intervals, margins of error, etc.) supplied provided together with the information itself in various academic settings and decisions? How does having or not having it influence deliberations and subsequent decisions?

For the Decisionmaker or Body, the first relevant characteristic is its scope or charge—its areas of assigned responsibility or the specific charge with respect to the presenting problem. As discussed earlier, two additional characteristics of the receiver that potentially affect information use are the discipline or disciplines of the people involved and their specific preferences, level of comfort with, and experience with different kinds of information. Potential research questions associated with the Decisionmaker or Body are:

- What specific role does the disciplinary background of a given decisionmaker or faculty committee member play in the choice of what kinds of information are sought and believed?
- Do committee members drawn from particular disciplines play more or less dominant roles in discussion when particular kinds of information are being used?
- How is information used as an “authority signal” to legitimize the positions taken by individual members of an academic committee, regardless of
whether or not the information is relevant? Is this an effective strategy for influencing an outcome in an academic setting?

As noted above, a large volume of discrete questions such as these can be generated using this Framework and more discussion is needed to determine which of them are the most interesting and important. As this proceeds, however, there are several lines of exploratory work that the Spencer Foundation might undertake with respect to information use in higher education. These include:

• **Mining the Literature on Higher Education Decisionmaking.** The field of Higher Education is now well established as a distinct field of study within Education, with its own research community and family of refereed journals. Much of the literature in the field consists of studies of particular decisions and how they were made. A first fruitful line of inquiry for Spencer support might be to systematically identify studies of this kind in the published literature and, perhaps, in dissertation work, then carefully mine the resulting body of work to uncover some initial patterns of how information enters the situation and how it is used. A similar situation obtains for the literature on Institutional Research and the Assessment of Student Learning Outcomes. There is a considerable body of exhortatory advice on how to increase the impact of information and how to get decisionmaker attention through data. Synthesizing this literature for testable propositions that could be used to construct experiments or guide future observation should not prove a difficult task. These kinds of “meta-studies” (they should not in any formal way be considered meta-analyses) might prove quite useful in generating hypotheses for later testing. For example, Zemsky (2009, 2-6) describes President Martin Meyerson’s decision to pursue “selective excellence” with respect to academic program offerings at the University of Pennsylvania by investing in only a few high-quality programs that could attain top ranking status. Information-use questions that this decision might spark, among others, could include the role of Meyerson’s disciplinary background (he was a city planner) in the information he sought and used in making the decision, how information was deployed on both sides in the bitter battle he fought with the Penn faculty about this decision, and what indicators of success were proposed to determine if this course of action, if adopted, was successful.

• **Ethnography of a Decision.** This line of exploratory work might involve choosing several different academic decisions at a small number of institutions and following how they unfold, paying particular attention to the role of information. Examples might include the decision to launch or close an academic program, change a placement policy, or invest in technology. Ideally, such an initial study would be undertaken in real time, with the researcher(s) acting as participant-observers, using rubrics and observational protocols to record their observations. Less ideally, it might be done retrospectively using meeting records and retrospective interviews.
• **Construction and Use of Indicator Systems.** Many colleges have at this point established a set of formal statistical performance indicators as part of a strategic planning or executive monitoring process. A large number of these are posted on the institution’s website, so are readily available for inspection. This line of work might first examine the contents of indicator systems for about a hundred institutions of different kinds to identify their content. Indicators could then be classified into different groups depending upon their domains and the types of measures they comprise. The result might be a valuable first step in looking at information use in general. But a next step might be to e-survey those responsible for these indicator systems to explore why these particular indicators were chosen, which ones seem to be the most effective in guiding future direction, and their particular strengths and weaknesses.

• **How Faculty Committees Use Data.** The fact that so much of the work of academic administration is done by faculty committees has already been noted. This means that there may be particular value for a line of work focused on how they compile and use information for different kinds of tasks and decisions. This would almost have to be case study or ethnographic work similar to the “ethnography of a decision” example described above. An alternative might be a site visit to several institutions, the results of which could be used to develop a survey protocol. Because the nature of the tasks is similar across institutions, one promising target for such an investigation might be committees engaged in program review.

**Conclusion.** The intent of this paper is to briefly tour the territory of information use in higher education by looking at major types of uses and identifying an initial set of factors potentially related to information use. These factors provide the basis for constructing a framework for constructing research questions and suggest the kinds of questions that might be pursued in an initial line of work. A major additional conclusion is that existing empirical studies of decisionmaking studies in colleges and universities, together with current extensive body of practical work on information use in Institutional Research might constitute a good basis for generating an initial set of testable hypotheses to guide the development of a Spencer Foundation research agenda in this area.
References


