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ABSTRACT

This study builds on an earlier one in which the role of institutional researchers in providing computer information systems (CIS) data to administrators was investigated. To examine the relationship between college culture and the role of institutional researchers as either providers of information or interpreters of data, a study was conducted at three community colleges in the Pacific Northwest. The president, top level administrators, and the institutional researcher were sent audio tape questionnaires and were interviewed about college culture, decision making processes, and the roles of the institutional researcher. The study found that the three colleges differed in organizational climate: one was described as working as a team, another as essentially political in its decision-making process, and the third as chaotic and inconsistent. These climates affected the researchers' view of data as capable of capturing a knowable "reality," with data representing an incomplete reality at the first institution, a negotiated reality at the second, and a construct that could be interpreted from many different perspectives at the third. However, administrators at all sites relied primarily on institutional researchers for data, and therefore recognized the role of researchers as providers of data. The administrators also indicated that the major role of researchers should be to interpret the data, stating that they themselves did not have the skills or time to perform analyses and that researchers had objective methodologies and training in statistical analysis. Finally, at the college described as chaotic the researcher functioned as institutional critic, a role stemming from the cultural climate, the view of data as an interpretable reality, and administrative support. (MAB)

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The Institutional Researcher as Interpreter and Critic

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Abstract

The role of the institutional researcher has changed since the introduction of information technology. As databases have become more accessible, the role of the institutional researcher has shifted from a Provider of data to an Interpreter of data. The research described in this article was designed to study the role of the institutional researcher in three community colleges in the Pacific Northwest. Interview and survey data from institutional researchers and key administrators provided information on each college's unique culture, decision making processes, and the roles of the institutional researcher. The results indicate that institutional researchers at all three sites functioned primarily as Interpreters. The findings also suggest that as the subjective nature of data is realized, the institutional researcher moves toward the role of Critic. This role might become increasingly important as higher education institutions struggle to adapt to turbulent environments and the demands of a diverse society.

## The Institutional Researcher as Interpreter and Critic

### Introduction

While much has been written about institutional research and its activities, its role is not clearly defined and has few discrete boundaries. However, the institutional research literature since the infancy of administrative computer systems suggests a distinct shift in the institutional researcher's role in higher education organizations.

When information technology first emerged, extracting data from computers was difficult for all but the most technically proficient. In this environment, the institutional researcher primarily was regarded as a provider of information for decision making. As computer data bases became easily accessible to many members of the organization, the need for a data provider waned but a new need emerged for someone to interpret the vast amount of data that was overwhelming decision makers. The institutional researcher stepped in to fill that role.

The Provider role calls for the institutional researcher to act primarily as a data collector and one who channels data and information to decision makers. The institutional researcher is viewed as a technically proficient and objective presenter of data. The Interpreter role, on the other hand, raises the possibility that data and information also have a subjective side. The institutional researcher, rather than just providing "objective" data, assists the administrator to understand the organization and to thereby make decisions that are better informed. Because of the findings of the research described in this article, I propose a third institutional research role emerging from the Interpreter role: that of the Critic. The

Critic rejects the premise that the results of research are wholly objective and embraces the notion that data and information are socially constructed and therefore subjective.

As a means of investigating the first two institutional research roles, preliminary surveys and subsequent in-depth interviews were conducted with institutional researchers and key administrators at three community colleges in the Pacific Northwest. The study was designed to solicit information that could be used to understand the cultures of each institution, to determine the extent to which subjects believed that data on institutional data bases were subjective or objective, and to assess the role played by the institutional researcher in integrating information from institutional data bases into administrative decision making processes. The findings suggest that the role of the institutional researcher, and in particular the degree to which the institutional researcher functioned as an Interpreter, was related to the organizational culture of each college.

#### Background

##### The Institutional Researcher as Information Provider and Interpreter

Traditional descriptions of institutional research functions emphasize the need for objective information to support decision making, planning, and accountability requirements. In a booklet published by the Association for Institutional Research, Saupe (1990) defined institutional research as "research conducted within an institution of higher education to provide information which supports institutional planning, policy formation and decision making" (p. 1). Dressel (1981) gave a more extensive definition when he said,

Institutional research has to do with what decision makers need to know about an institution, its educational objectives, goals and purposes, environmental factors, processes, and structures to more wisely use its resources, more

successfully attain its objectives and goals, and to demonstrate integrity and accountability in so doing. (p. 237)

Stevenson and Walleri (1984) surveyed members of the Pacific Northwest Association of Institutional Research and Planning and found shifts in responsibilities for institutional research offices from 1980 to 1984 because of advances in information technology. Added responsibilities over this time period included such things as database management plans, computer information, decision support system planning, and functions associated with a campus information center. Responsibilities that gained priority over this same length of time were management information systems development and improvement of information systems. The authors noted that changes in responsibilities were moving institutional research toward more technical roles traditionally performed by data processing and administrative computing departments.

The foregoing descriptions primarily depict the objective and technical Provider role of the institutional researcher. However, institutional research has also taken on the charge of "the collection of relevant data, the making of thoughtful analyses, and the interpretation of results to others" (Jedamus, 1984, p. 83). Matross (1988) emphasized that while the technical role of institutional research may increase with the growth and acceptance of microcomputer technology, there is an increased need for analysis and interpretation:

It is this area of analytical consultation and service, not technical consultation, that provides the unique window of opportunity for the institutional research office. Circumstances may lead an institutional research office to become the technical resource center on its campus, but often the technical support role is better served by computer center personnel. The unique expertise of an institutional research office is its understanding of data. (p. 5)

Perry (1979) described the emerging role of institutional research as interpreter and articulator to "re-energize the planning-management system of higher education" (p. 477). In order to become an interpreter, mediator, and tutor, the institutional researcher

must turn increasingly to identifying those qualitative aspects of education which escape quantification, and which must be included in the planning and decision processes which now rest so completely on quantifiable data. (Perry, 1979, p. 489)

In addition, Perry anticipated the need for the institutional researcher to become a "valued critic of education" (p. 481).

#### The Social Construction of Reality and the Subjectivity of Data

Over twenty-five years ago, Berger and Luckmann (1966) unveiled a landmark theory positing that reality is socially constructed. The main premise of their theory is that reality is not concrete and objective, but subjective and alterable. Humans in social groups construct their own realities. Reality is based on subjective experiences and understandings arising from particular cultural perspectives rather than on objective discoverable "truth" as the rational paradigm teaches.

This theory has important implications for the way institutional researchers approach their work. The phenomenon of socially constructed reality compels institutional researchers to change the way they perceive and understand generally accepted phenomena and artifacts of their culture. For example, Berger and Luckmann's theory suggests a new way of looking at the computer information system (CIS) database and its place in the organization. Using the premises of Berger and Luckmann, the computer information system is part of the socially constructed world of the organization. Often the CIS represents but one reality, the world view of one component of the organization. The CIS also helps to

shape and continually reconstruct the social world of the organization. Therefore, CIS data-- indeed all numerical data, no matter what their source--are open to critical examination because other realities exist that are not necessarily quantifiable.

### Methodology

The original study from which this report is derived (Matsen, 1991) was qualitative and descriptive in nature and therefore the scope of the original research was quite broad. The study investigated the use of computer information systems by administrators and in particular the roles of institutional researchers and administrative computing professionals in providing CIS data to administrators. In this report, I focus only on the findings that describe the role of institutional researchers in interpreting data and information for top level administrators.

Three community colleges in the Pacific Northwest were selected as research sites. The three colleges are in urban and suburban areas, each has a well-developed mainframe computer system, and each has an identifiable person or office that performed an institutional research function. The three colleges, here called Mountain, Pacific, and Columbia, range in size from approximately 6,000 to 15,000 student FTE. The largest college, Mountain, is a multi-campus institution.

The data were collected through recorded audio tape questionnaires and then through in-depth personal interviews. At each site, audio tape questionnaires were completed by the president, all other top level administrators (usually all those on the second level of the organizational chart), and the principle institutional researcher. Participants were mailed a written questionnaire containing open-ended questions and asked to record their answers on



an audio tape provided. The taped survey gathered initial information about each participant, about the college's information systems, and about each participant's perceptions of his or her college culture.

At each site, in-depth personal interviews were conducted with the president, selected other top level administrators, and the institutional researcher. The personal interviews were semi-structured and customized to expand on specific responses that participants gave on the taped questionnaire.

The study relied on metaphorical descriptions to portray the cultures for each college. Participants were asked to use metaphors to describe their colleges, to describe the decision making processes that predominate at the top levels, and to describe the roles of institutional researchers. For instance, when eliciting metaphors for the organization, I asked each participant the following question: "Metaphors are often used to describe organizations. (For example, organizations have been described as 'machines.')

What metaphor would you use to describe your college?" Similar questions elicited metaphors for decision making processes and the role of institutional researchers.

A single-site pilot study suggested that metaphors would provide an unusually rich and in-depth picture of the culture of each college. In fact, the results of the primary research also produced metaphors with consistent images and adjectives used by subjects at each site. I called the resultant cultural picture of each college the "administrative culture" of that organization.

The results of the taped questionnaire indicated that the concept of reality would be an important aspect of understanding the different administrative cultures and the roles of the

institutional researchers. For this reason, many of the questions in the personal interviews focused on participants' beliefs about the nature of reality and the relationships of reality to information and decision making at their institutions.

## Findings

### Summary of Site Characteristics

The three research sites were distinctly different in terms of how participants described their organizations and how they described the decision-making processes within their colleges. Besides questions asking for metaphorical descriptions, participants were asked questions in the initial survey designed to elicit information on how decisions were made at each institution. These questions focused on the use of data stored in institutional databases and on the institutional researcher's role in decision making. The personal interviews were individualized for each participant and were designed to probe and expand on specific responses made in the initial survey.

Pacific Community College. Of the three research sites, Pacific demonstrated the most cohesive administrative culture. The most common metaphor used by participants to describe Pacific was that of a "team." The institutional researcher shared strongly in the values of this culture. The emphasis at Pacific was on teamwork, process, participation, and common goals.

Decision making at Pacific was strongly information-based, analytical, and tied to computer technology. The president provided strong leadership in tying decisions to information. Several planning and decision making processes were formalized. Process and

participation slow decision making, but are tolerated in order to achieve better long-term solutions to problems.

The institutional researcher had a direct influence on the president through the provision of data and analyses. The institutional researcher is a member of the president's executive council, the major decision-making body of the college.

Mountain Community College. Mountain is a loose federation made up of four relatively autonomous campuses and a central support services organization. Participants described the decision-making processes as participatory and collaborative but with the vice presidents and president having final authority to make decisions. Participants described decision making processes as political. The president is moving the college in the direction of decision-making processes that are more information-based and rational.

The cultural descriptions of the college identified Mountain as fragmented and disjointed with loose ties between the various parts of the institution. One administrator compared Mountain to the Iroquois Nation: "[Mountain] is made up of several distinct organizations that are all related to each other, in some ways cooperate with each other, but also want to maintain their distinctiveness, their uniqueness."

Mountain Community College is definitely in an intermediate stage of development in terms of its decision-making processes. The change is slow, but the direction is toward more use of data in decision making and more reliance on the skills and expertise of those in the institutional research office. In fact, the president and vice presidents at Mountain relied quite heavily on institutional research for information.

Columbia Community College. The culture at Columbia encompasses the values of rapid change, innovation, and the importance of multiple perspectives. Decision making is described as chaotic, not based on information, and not analytical. Multiple perspectives of the world and the college are encouraged by administrators. Decision making is sometimes participatory and sometimes authoritarian. The decision processes vary from situation to situation.

The words most often used to describe the college were "chaotic" and "dynamic." The president used the metaphor of a carnival: "Lots of different kinds of activities going on. Everybody engaged in some activity and, in some cases, people are doing several things at once. Lots of action, lots of energy, lots of color, lots of fun."

There is some confusion at Columbia as to the role of institutional research in providing CIS data to administrators. Because the college constantly is embroiled in change and chaos, alliances may be important in providing stability for members of the organization. The role confusion surrounding institutional research may be the result of different factions building alliances to assist them in holding power in the various decision-making processes.

#### The Nature of Reality.

The results of the initial taped survey indicated that the issue of the nature of reality was important to both the administrators and the institutional researchers at all three sites. For example, many of the participants mentioned the need for interpretations of data to be based on "reality." Therefore, a standard series of questions during the personal interviews was: "What is the link between numbers/data and 'reality'? What is reality for your college? Who decides what reality is?" Responses to these and further follow-up questions

produced a valuable context for understanding the act of interpretation in each administrative culture. If reality is socially constructed, as Berger and Luckmann argue, then beliefs about the nature of reality need to be a central issue in understanding the Interpreter role of the institutional researcher.

The findings indicate that administrators at all sites believed in an objective reality that is describable, knowable, and separate from themselves. Administrators argued that they need to know what reality is in order to make decisions: "When we address a particular question, it's important that we have solid information. The information becomes very important. We want to be very much grounded in reality." When asked how he recognizes reality, another administrator responded, "I guess reality is when I can find this unbiased person and they tell me what it is. I can't go to the departments and ask them what reality is because they color it too many ways." These administrators perceived that an objective reality exists waiting to be discovered, and that interpretation is merely a mechanism for discovering reality.

Administrators tended to believe that data on the college's CIS faithfully represent reality insofar as those data were entered accurately into the system. They also tended to believe that CIS data represent only a portion of reality; and in order to make good decisions, administrators must consider information from a variety of sources.

While administrators across sites held similar views of the nature of reality, the institutional researchers varied in their beliefs about the nature of reality and the relationship of CIS to reality. The variations tended to be consistent within sites.

Pacific Community College. All of the top-level executives relied quite heavily on the director of institutional research for information and interpretation. Through interview responses, the director of institutional research implied a belief in a reality that is separate, objective, and knowable. His conversation was sprinkled with phrases such as "in reality" and "regardless of the actual reality." When discussing rational decision making and the role of institutional research, and the institutional researcher said the following about objectivity:

My view is that there is no such thing as true objectivity. Bias is built into everything. . . . I think we all bring biases that skew how we interpret things. I'm sure that's going on, but I don't think there is any big distortion of reality.

However, the institutional researcher believed that it is impossible to represent all of reality in quantifiable terms and that qualitative information is very important to understand reality. He also believed that people's individual perspectives affect their interpretations of CIS data and the reality those data represent.

Mountain Community College. Mountain was in transition in its use of information in decision making. The president said he desired a strong CIS in order to "ground decisions in reality." The institutional researcher indicated that CIS data represent reality to the extent that they are accurate. However, the institutional researcher also expressed a belief that CIS data represent only a piece of reality and that different people perceive the data differently. She acknowledged the politics of representing reality on the CIS:

It's a limited view of that reality. It's certainly not all-encompassing. But it is a view of certain realities. I think we always have to keep in mind that it's not the whole picture. It's a piece of the picture. But I do think it's pretty representative. But everybody's reality is a little different too. So what we've done is tried to find some middle ground and say that these are pieces of the Mountain reality that everybody can buy into and relate to.

So the Mountain institutional researcher believed that reality can be represented on the college's CIS. This reality, however, is incomplete. It is a negotiated reality which also represents a political compromise as to what can and cannot be represented on the CIS. As a result of its incompleteness, people perceive and interpret CIS data differently. The goal at Mountain, however, seemed to be agreement on a common reality that would then be represented on the college's CIS.

Columbia Community College. The institutional researcher implied that he believed in a reality that is subjective and ephemeral. We talked about reality as it relates to decision situations and he indicated that each situation brings its own reality: "As we worry a problem, we start structuring a face to it. When we apprehend that face, recognize it and call it a name, that's when we get close to the point where a decision is made." I specifically asked if reality changes from decision to decision:

Yes, it's situational. The face of it changes. If we all ate badly last night, we might be particularly hard-edged today. But I think the institution grows inductively. I don't think it comes from the construction of a paradigm that then is applied to particular problems. I think we construct [or] we induct a reality for each particular problem. It creates some problems of consistency but we're not sure that consistency is necessarily of value.

I asked the institutional researcher if he thought that the meaning ascribed to CIS data is an issue at Columbia. "No, because they don't mean anything more than what they are. The decision of what they mean is never fixable and always refutable."

The institutional researcher at Columbia tended to view reality as a much more subjective phenomenon than his counterparts at the other two sites. The reality depicted by the CIS data is at most one small piece of a total reality or history that administrators must

take into account in decision making. But even the countable realities represented by CIS data are not fixed in meaning. For the institutional researcher at Columbia, reality depends more on the decision maker's values and perceptions.

Summary of the Institutional Researchers' Perceptions of Reality. The research sites ranged in a cultural continuum from Pacific Community College, where members share common values and perceptions of reality, to Columbia Community College, where the organization is described as chaotic. Administrators at each site did not differ appreciably in their stated or implied perceptions of reality and the CIS. Reality as described by administrators varied from a very orderly and rational reality to a disorderly and changing reality. However, all administrators believed that a "reality" existed and that proper interpretation of data will uncover that reality. In general, all of the institutional researchers tended to be much more aware than administrators that data are subject to different interpretations by different people in the organization.

The roles of the institutional researchers at all three colleges have adapted to their respective cultures and the predominant views of reality. The results indicate that the institutional researchers reflected the culture by their perceptions of reality. At Pacific, where rational decision making depended on formal analytical data-driven processes, the institutional researcher believed that data represent reality though an incomplete reality. At Mountain, where a loose federation meant that decision making processes were more political, the institutional researcher believed that data represented a negotiated reality. At Columbia, where the culture thrived on change, the institutional researcher expressed a belief



in subjective and changeable realities--realities constructed by the culture's participants and represented by data that can be interpreted from many different perspectives.

## Discussion

### The Institutional Researcher as Interpreter

Administrators at all three sites primarily looked to institutional researchers to provide CIS data rather than accessing the data themselves. At all sites then, the institutional researcher was recognized as playing the role of information Provider.

However, administrators at all three research sites strongly indicated that the major role of institutional research should be that of Interpreter. According to participants, interpretation encompasses describing data, organizing and formatting data, giving meaning to data and drawing preliminary conclusions from them. The Interpreter role includes the analysis of the questions administrators ask and the conceptualization of the decision problems they face. This identification of an Interpreter role confirms the movement of institutional researchers into a stage beyond that of simply providing data and information.

The reasons administrators gave for wanting someone else to interpret data were: (a) they don't have time; (b) the data are unfamiliar to them; (c) they are uncomfortable with numbers; (d) they are unfamiliar with data manipulation procedures, i.e., statistical analysis; and (e) they believe it is more efficient to have someone interpret who is more proficient at accessing and manipulating data. Most of these reasons reflect a belief that interpretation is largely a technical matter.

Administrators indicated that they did not trust just anyone to interpret data for them. What accounts for administrators having trust in the interpretations of institutional

researchers? If everyone is biased, what makes the biases of institutional researchers acceptable? Administrators answered this question in two ways. First, several suggested that institutional researchers are trained to be objective. The implication is that institutional researchers use research methods and statistical analyses that are accepted scientific procedure.

Secondly, many administrators perceived that institutional researchers have broad backgrounds and a good overall perspective of the college and of education in general. According to administrators, this broad perspective allows institutional researchers to see more aspects of the problem and they are able to describe it more completely.

I would like to propose another reason why administrators preferred institutional researchers to interpret data for them. Many administrators expressed a discomfort with numbers and a discomfort with using computers. Responses from participants suggested that administrators may perceive that institutional researchers share their own less technical view of the world. In other words, institutional researchers are more likely to interpret data in ways that agree with and confirm the perceptions of administrators, many of whom are trained in the humanities. Perhaps administrators believed that institutional researchers are more likely to share their own perceptions of reality and operate from similar social and organizational paradigms. The statement "the institutional researcher has a broad overall view" may be a euphemism for "the institutional researcher agrees with my perception of the world and the college."

While there are advantages to the institutional researcher having a similar world view to administrators, there are also potential dangers. One such danger might be a tendency on

the part of the institutional researcher to reinforce and confirm the dominant organizational reality and thus inhibit the acknowledgement of alternate realities or perceptions of reality.

The dictionary gives two definitions of the word "interpretation." The first is "to explain or tell the meaning of; [or] present in understandable terms." The second is "to conceive in the light of individual belief, judgment or circumstance" (Webster's New Collegiate Dictionary, 1979). The first definition implies that the thing being interpreted is an objective reality and that the interpreter will accurately represent that reality. The second definition connotes that the interpreter forms an understanding of the thing being interpreted based on his or her perception of the moment in the context of that person's values and experiences. This definition is stated in terms of the person doing the interpreting and emphasizes the subjective experiences of that person. If "conceive" means "to originate" then this second definition implies that the interpreter constructs reality through subjective understandings. The second definition coincides with Berger and Luckmann's (1966) concept that reality is socially constructed. If reality is socially constructed, then it follows that there will be increasing pressure for the role of the institutional researcher to be transformed from Interpreter to Critic.

#### The Institutional Researcher as Critic

The environmental pressures on community colleges and other higher education organizations include an increasingly diverse population base, fast changing technologies, changing needs for work force development, and uncertain funding resources. The environment is turbulent and suggests a need for organizations to adapt and to adapt quickly. Above all, the community college must encompass and embrace diversity and the inherent

instability produced by different cultural values coexisting in one organization. The community college of the future will look much more like a flexible and portable carnival "tent" (see Hedberg, Nystrom, and Starbuck ; 1976) and less like a rigid stable bureaucracy.

In order to help their institutions acquire and maintain the ability to adapt, institutional researchers must become Critics of their organizations. I use the word "critic" not in the negative sense, as one who finds fault, but in the sense of one who examines a problem carefully from perspectives other than the accepted perspective. The critic uncovers ways of understanding the world other than the often unquestioned dominant perspective. The critical institutional researcher presents and interprets data in ways that perhaps conflict with the administrator's dominant world view. The critical institutional researcher is able to enlighten administrators as to the existence and essence of other "realities." A critical approach to data interpretation can uncover many possibilities for action that might have gone unexplored with a strictly rational approach.

At Columbia Community College, we see an institutional researcher who has moved into the role of a Critic. He is very much aware that the meanings assigned to various pieces of data are contingent upon the situation, the individuals involved, and the environment. Unlike the institutional researchers at the other two colleges, he openly asserts that reality is situational and changes--is fundamentally different--from decision to decision and from person to person. As a result, his presentations of data naturally reflect many possible interpretations from the perspectives of different realities.

The institutional researcher at Columbia is supported and encouraged in that role by the administrative culture of the college. The value placed on change and innovation

encourages participants in the decision making processes to explore and to think in new and different ways. This situation is very unlike that at Pacific and Mountain where administrators are trying to draw their respective institutions toward common "rational" understandings perhaps in an effort to give more stability to their organizations. At these colleges, the pressures on the institutional researchers are to provide common interpretations that support one reality.

Can an institutional researcher in a more rational organization, such as Pacific or Mountain, also play the role of Critic? Institutional researchers take part in the social construction of reality by defining information parameters and by organizing, changing, and transforming data into information that reflects certain perspectives of the college. The institutional researcher who provides administrators with several different possible interpretations of CIS data might encourage change and the adaptability of the organization. Furthermore, in a college that values participative decision making, an institutional researcher who is sensitive to multiple realities in the organization may help ensure that one reality does not dominate or endanger the participative process.

However, the chief value of the institutional researcher in a college struggling within the rational paradigm may lie in his or her ability to create bridges between administrators and the many realities created by members of the community college organization, including the realities represented by CIS data. Without these bridges, administrators are slaves to their own perceptions of reality and their unintended ignorance of large portions of the entire mix of realities that make up the college they administer. The institutional researcher can become a bridge by presenting to administrators several different interpretations of the same

data--interpretations that represent different perspectives of the organization and provide an environment for administrative sense-making.

Administrators need to be brought into the dialogue concerning what it means to move beyond the rational paradigm. It may be a very difficult issue to address if administrators do not understand the nature of constructed reality and the possible consequences of not recognizing the dominance of some realities over other realities. However the questions must be asked. Do administrators need an institutional researcher who will confirm and reinforce the dominant world view? Or will decision makers benefit from an institutional researcher who will challenge the dominant perspective either through his or her own values or through the ability to present multiple perspectives and interpretations of data and information? Sense-making in a tent in a turbulent diverse environment will depend on the administrator's awareness of the many perspectives held by organizational members if the products of sense-making--shared meaning and a common vision--are to have efficacy for organizational members.

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Biographical Sketch of the Author

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