

Using Mixed Methods in Institutional Research

Edited by
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Introduction

I have practiced institutional research for many years primarily using quantitative methods in generating decision support information. Generally, my use of qualitative methods was more a pragmatic, convenient, alternative reaction to time constraints (interviewing through focus groups instead of using a survey of some sort) rather than a selected methodology based on the question to be answered. And, while these methods seemed to meet my needs, it did not become clear to me how useful qualitative methods could be to increase the strength and usefulness of the information I was creating until as a faculty member I taught a graduate course in qualitative research methods.

My first experience with this course was in a team teaching situation where my colleague had a background in qualitative research. Our first conversation about what should be included in the course quickly turned into a point-for-point debate about the merits of each approach. It was from that first conversation that Ken Borland and I both began to understand that when used as complementary methods, the results of research efforts (particularly assessment and evaluation studies) had the potential to be much more useful. This was particularly true as we discussed mixed methods uses in the creation of decision support information or in the assessment of academic and support programs. During my tenure as a full-time faculty member, I taught the qualitative methods course five times, and through these experiences I have become more comfortable with the methods used by qualitative researchers, how mixed methods approaches can enhance a study, and the knowledge that can be developed.

In part, the genesis of this volume reflects my growth in understanding how qualitative research can enhance the usefulness of traditional quantitative work typically performed in institutional research offices. When used in a complementary fashion, the quantitative approaches allow one to assess **what** the outcomes of a program or process are, while the qualitative methodologies provide the researcher with insights about **why** the outcomes developed as they did.

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Chapter 1

The Role of Mixed Method Approaches in Institutional Research

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Fundamental to the consideration and use of mixed methodology in institutional research is understanding its purpose within the context of institutional research and its place relative to the two dominant contemporary research paradigms. Therefore, prior to introducing this specific volume, we first discuss the purpose of mixed methodology relative to the “what” and “why” questions institutional researchers address. We then discuss the place of mixed methodologies relative to positivist and constructivist research paradigms.

Answering the “What” and “Why” Questions

The fundamental purpose of institutional research is to create data-based information that supports planning and decision making. Traditionally, the majority of the data used by professionals in institutional research offices has its origin in the operating systems of the college or university or was collected through surveys or other studies. These data typically are quantitative, numerical or readily coded in numerical form. From these data institutional research professionals are able to describe their institutions: student enrollments; faculty counts by rank; ethnic breakdowns, etc.; and the activities and outcomes of academic, research, and service programs and processes. These institutional research functions and quantitative data typically describe “what” has happened. The resulting academic and social outcomes are metrics for measuring progress toward goal attainment, and they tend to reflect information used in summative decision making.

These data, however, do not provide all the information necessary to support formative decisions about the effectiveness or efficiency of the ongoing processes that define the program. In other words, productivity data or those collected and analyzed in quantitative studies do not usually provide information about “why” the status of programs is as it is. Nor do they explain why the outcomes of a process are what they are—good or bad. Information about both the outcomes and why they are what they are provides the decision maker with information that will inform policy formation or adjustment as well as an indicator of the overall success (outcomes) of

the program or process. The type of information that addresses the question of “why” is usually qualitative, narrative data within a particular context collected using various interview methodologies or open-ended questions on surveys.

Below is a brief example of how the two methodologies were used to identify and understand a student performance issue by answering both the “what” and “why” questions.

A number of years ago, the institutional research analysts in an office at a large university conducted a study of grading patterns in introductory courses. Reviewing ten years of trend data, it was discovered that the average grade in an introductory biology course had dropped significantly (from a B to a C- level) over the preceding five-year period. This was a course that had traditionally been used by non-science and math majors to meet the core science requirements. From these trend data, the institutional research staff learned “what” had happened in terms of academic performance in the course, but it was not known “why” it happened. Through a series of interviews with the students, department head, and faculty who had taught the course over the previous seven years, information was developed about “why” it happened. In response, the department made changes that resulted in student grades for the course returning to former levels of achievement.

Specifically, the institutional research staff found from focus interviews with the students who had taken the course the previous semester that the faculty teaching the course, contrary to its catalog description, taught the course using calculus-based tools. The department head indicated that new faculty were usually assigned the course, as it gave them an opportunity to teach a course that did not require a great deal of content preparation on their part. When asked about recent hiring, he indicated that the department was building capacity to react to emerging biotech opportunities. In other words, new assistant professors were analytic-research oriented in their training and interests. Their approach to the introductory course was analytic in nature, using math-based tools beyond the skills of most students who were advised to register for the course. To the department head’s credit, once the reason for the downward trend in the grades was pointed out, the course content and approach was standardized to reflect its original intent. The

average grade in the course returned to former levels within a semester.

In this example, the staff in the institutional research office used both quantitative and qualitative methodologies, first to identify and describe “what” was happening and second to determine “why.” The department head made changes based on what the institutional research staff learned about “why” student grades had fallen significantly over the seven-year period. The impact of the changes was assessed through the quantitative analysis of “what” the grades were in the course during the following semesters.

Two Dominant Research Paradigms

In their text on research methods, Best and Kahn (1998), provide a classic definition of research as “the systematic and objective analysis and recording of controlled observations that may lead to the development of generalizations, principles, or theories, resulting in prediction and possibly ultimate control of events” (p. 18). During the past 40 years, the relevance of classical research conducted to understand human behavior has been questioned; and these “questions” have at times been expressed with emotion (Hedrick, 1994). As described below, the paradigms that govern the use of qualitative and quantitative methodologies, define two opposing worldviews or beliefs of reality or truth that ultimately can not be proven.

Paradigms are the world views that are held by a group of scientists that reflect their beliefs about the nature of reality or truth. In the world of social science research, there are two opposing paradigms. Gliner and Morgan (2000) describe them as Constructivist and Positivist. Broadly, the Constructivist believes that there are multiple realities and that truth is ever changing, dependent on context and the individual (subject and researcher). Positivists on the other hand believe that there is a single reality or truth across time and contexts, and that this truth can be understood through the objective study of independent variables. In the first case, the focus is on humans and “their” understandings of the phenomenon at the time and place of the study; while in the second case, the focus is on variables that define the construct or phenomenon under study, with the findings able to be generalized to the population.

The implications for research from these beliefs are significant when looked at from a methodological perspective and fundamental purpose. Methodologically, the Constructivist selects the individuals to be studied as they reflect specific characteristics of interest. The intent is to develop hypotheses or theories that would describe the phenomenon under study and describe in detail what the subjects say, the environment, and the researcher’s role. Generalization beyond the population or context under study is the not the researcher’s responsibility, but is ultimately the responsibility of the consumer of the research (Borland, 2001).

The Positivist believes that cause/effect relationships existing in nature can be measured by isolating the impact of demographic and environmental attributes (variables) typically through sampling procedures (Borland, 2001). From the findings, the researcher generalizes, with a level of confidence, to the population from which the sample was selected, thus suggesting a description of the population and predicting behaviors related to the variable studied.

Given the diametrically opposing beliefs about the nature of reality that these two paradigms reflect, it is not surprising that proponents of each camp have argued passionately for their point of view over the years. In the volume "The Qualitative-Quantitative Debate: New Perspectives" edited by Reichardt and Rallis (1994) the arguments for each paradigm are presented within the context of conducting program evaluations. The intensity of the arguments or "paradigm wars" resulted in two research cultures that in essence advocated that the two paradigms and their associated methodologies can not and should not be mixed (Johnson & Onwuegbuzie, 2004).

Building on these notions, paradigms and methodologies should not be thought of as synonyms; nor does the belief in one world view or paradigm demand the use of a particular methodological approach. As is always the case, the appropriate method and form of data collection are dependent on the question that is to be answered by the research. If the intent is to develop a theory or hypothesis, then specific individuals may be selected to study; and both quantitative and qualitative methodologies can be used to create the desired information. If, the intent is to discover and/or describe a trend within a population or to study an attribute of a population, then a representative sample is selected and the trend or attribute is studied, quantitatively or qualitatively, and the results are generalized to the population. From this perspective, the key issue is how the people to be studied are selected—randomly from a defined population or purposefully to reflect a specific characteristic.¹

The two paradigms and respective research methodologies can be thought of as the extremes of a "research continuum" with the Positivist at one end and the Constructivist at the other. Borland (2001) suggests that "The relationship between qualitative and quantitative research should not be considered in terms of a mutually exclusive dichotomy but rather as a continuum of complementary paradigms within systematic scientific inquiry that, when used in concert, produce complete or useful knowledge" (p. 5). This concept of approaching research is defined as mixed methods research by Johnson and Onwuegbuzie (2004). They further suggest that this approach to creating knowledge may be thought of as a third research paradigm that bridges the "schism between quantitative and qualitative research" (p. 15). Creswell (2005) further discusses mixed methods research as a world view or paradigm in which the pragmatists believe in "what works"



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