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CHAPTER 1

THE HISTORY OF INSTITUTIONAL RESEARCH

Donald J. Reichard

This chapter provides an overview of the historical origins of the field of institutional research and the circumstances that led to the establishment of the Association for Institutional Research (AIR) in 1965. Publications cited are intended not to represent an integrated literature review or bibliographical essay, but to identify significant sources that readers may wish to examine in their original form.

Early Beginnings of the Profession

The origins of what might come to be termed “institutional research” are found in (1) self-studies conducted on an ad hoc basis by individual institutions interested in investigating issues pertaining to their unique circumstance; (2) surveys conducted by external groups or associations across institutions; and (3) the establishment of specialized research committees, bureaus, or research-oriented offices in large public universities charged with investigating relevant issues on an ongoing basis.

College Self-Study

College Self-Study: Lectures on Institutional Research (Axt & Sprague, 1960) was perhaps the first well-integrated series of papers focusing primarily on institutional research. Published by the Western Interstate Commission on Higher Education (WICHE), it contained papers given at a week-long July 1959

Note: The author is indebted to William Lasher for conversations and insights that led to the selection of the accompanying resources on which this chapter is based.

workshop at Stanford University attended by 130 college and university officers from thirteen Western states and twelve states outside the WICHE region. The opening lecture—presented by W. H. Cowley, the distinguished historian of higher education at Stanford—bore the title “Two and a Half Centuries of Institutional Research.” Cowley’s paper identified 1701, the year in which Yale was founded, as the first example of an “institutional research” study, because the founders of Yale, after reviewing the single governing board structures of Scottish universities and the University of Dublin, had adopted a similar structure, which differed from the dual governing board structures of Harvard and William and Mary, the only two American colleges then in existence. Cowley went on to identify several other studies conducted in the 1700s, studies conducted by various Harvard committees in the 1820s, and the Yale Curriculum Study of 1828 as important forerunners of institutional research. He indicated that A. Lawrence Lowell succeeded Charles Eliot as president of Harvard in 1909, “largely because of his institutional research activities” that began in 1902 when Lowell became a member of the Committee on Improving Instruction in Harvard College (Cowley, 1960, p. 6).

Cowley’s lecture cited such works as an 1899 paper by William Rainey Harper, president of the University of Chicago, titled “Waste in Education,” and a study published by the Carnegie Foundation for the Advancement of Teaching titled *Industrial and Academic Efficiency* (Cooke, 1910). Such works preceded efficiency expert F. W. Taylor’s publication of *The Principles of Scientific Management* in 1911.

Surveys

In his dissertation on the origins of institutional research, Tetlow (1973) cited the period 1908–1943 as “The Survey Era,” which began with a comprehensive investigation of strategic questions initiated by Oberlin College president Henry C. King. Abraham Flexner’s 1910 critical study of medical education was also particularly notable at the beginning of this period. Indeed, Walter Crosby Eells identified more than 500 studies and authored a special report on 240 of them in a publication titled *Surveys of American Higher Education*, issued in 1937 by the Carnegie Foundation for the Advancement of Teaching. Eells went on to note ten main reasons why surveys had become a predominant tool of analysis including: “(1) the development of the scientific spirit in education; (2) the efficiency movement in business and industry; (3) the social survey movement; (4) the growth of higher education; (5) the complexity of higher education; (6) the cost of higher education; (7) the criticisms of higher education; (8) the development of accrediting agencies; (9) the influence of the general educational survey movement; and (10) self-protection” (Eells, 1937, 54–68).

If Eells was the principal chronicler of the survey movement, it may be argued that Floyd W. Reeves of the University of Chicago was among the most prominent initiators of surveys that had an enormous impact on higher

education in the late 1920s and early 1930s. Reeves's work in this regard is summarized in a chapter titled "Surveys of Colleges, Universities, and Other Educational Institutions and Work with the North Central Association of Colleges and Schools, 1927–1936" (Niehoff, 1991, pp. 29–65). Eells noted ninety-six surveys of all types of institutions in which Reeves was involved, including sixty-four surveys in which Reeves served as the principal investigator. Among those done for the North Central Association were surveys of the *Costs of Education in Liberal Arts Colleges* (1927), *Financial Standards for Accrediting Colleges* (1928), *Standards for Accrediting Colleges* (1928), and *The Evaluation of Higher Education Institutions*, a series of studies released in the period 1929–1936.

Reeves's most well-known works were a series of twelve volumes reflecting studies undertaken from 1929 to 1933 as part of a comprehensive self-survey of the University of Chicago. Reeves and his doctoral student and protégé, John Dale Russell, served as principal authors and collaborators in nine of the twelve volumes (Niehoff, 1991, pp. 7–8.) From 1930–32, Reeves also directed a survey of some thirty-five colleges related to the Methodist Episcopal Church which resulted in a more than 700 page volume published in 1932 titled *The Liberal Arts College*. It should be noted that two of his more junior collaborators in that study were John Dale Russell and A. J. Brumbaugh, who would become the first two recipients of the Distinguished Membership Award from the Association for Institutional Research in 1966, the year in which AIR held its first Forum.

The clearest precursor of a study defining areas and methods of inquiry that might evolve into the field of institutional research appears to have been developed in a dissertation by Schiller Scroggs that was completed at Yale University in 1935 but not published until 1938. The purpose of the study, titled *Systematic Fact-Finding and Research in the Administration of Higher Education*, was "to ascertain how an office of administrative statistics and research in an institution of higher education should systematically determine upon and present its data" and "to serve as a concrete aid to college executives interested in setting up within their institutions a system of fact-finding and research as an administrative agency" (Scroggs, 1938, iii).

Scroggs' general bibliography contained a listing of 259 references, including many study documents obtained in response to his "field inquiries" that were completed by sixty college and universities of varying size and complexity.

Research Committees/Bureaus

Cowley notes that larger-scale multi-institutional studies in the first twenty to thirty years of the twentieth century tended to be funded by foundations that were reluctant to fund self-studies within a single institution. In the absence of single institution funding, a few presidents of larger institutions sought to encourage educational and administrative research on their own. Cowley referenced the existence of a Bureau of Institutional Research at the University

of Illinois in 1918, a Division of Educational Reference at Purdue in 1920, and a Department of Personnel Study at Yale in 1921. A Bureau of Educational Research at Ohio State, which was largely concerned with secondary school surveys, was established in 1918. By 1928, a Division of Achievement Tests was also created at Ohio State, headed by Ralph W. Tyler, and a parallel post in student affairs research headed by Cowley was added at Ohio State in 1929. A Bureau of University Research was established at the University of Michigan about 1927; during the period 1929–1945 it was retitled the Office of Educational Investigations (Cowley, 1960, pp. 13–14).

The University of Minnesota created a University Committee on Educational Research in 1924; it became the Bureau of Institutional Research in 1948. As described in the Faculty Handbook, the role of the bureau was to serve as “a special research unit maintained by the University for the study of its own educational and administrative problems” (Stecklein, 1960, p. 32). “Priorities of the Bureau’s work were first problems of the University, second higher education in Minnesota, and third, higher education in the nation” (Stecklein, 1960, p. 33).

Advocacy for Establishment of Institutional Research Offices

The most prominent advocates for the establishment and training of institutional research personnel were the American Council on Education (ACE) at the national level, and the regional compacts—including the Southern Regional Education Board (SREB), the Western Interstate Commission on Higher Education (WICHE), and the New England Board for Higher Education (NEBHE)—which were established in the period 1948–1955 to cooperatively address state-level higher education issues and concerns. The array of national meetings and workshops conducted in the period 1956–1960, and the National Institutional Research Forums held from 1960 to 1965, in turn led to the formal creation of the Association for Institutional Research in 1965. These activities are described in detail by Schietinger (1968, 1979) and Tetlow (1973).

It is estimated that prior to 1955 only ten colleges and universities had established offices of institutional research. By 1964, there were 115 institutions with a bureau or official charged with responsibility for conducting institutional research; 21 of these offices were created in the year 1966 alone (Rourke and Brooks, 1966, pp. 45–46). The creation of institutional research offices would help to answer increased demands for accountability in line with vastly increased expenditures of public funds for higher education during this period.

With the aid of a \$375,000 grant from the Carnegie Corporation in 1956, ACE established an Office of Statistical Information and Research (OSIR). Following a February 1957 conference of college and university presidents, Elmer West, the acting director of OSIR, was particularly influential in urging

presidents to appoint staff who would engage in systematic institutional research. The subsequent development by OSIR of a series of workshops on topical areas encouraged further workshop activities sponsored by SREB and the 1959 WICHE workshop, previously cited, in which Cowley (1960) implored: “Someone needs to state the case for institutional research more convincingly than it seems to have thus far been stated. Indeed, I know of no adequate address, article, or book to which one might refer a president or faculty member whose interest in it he might want to arouse” (p. 15).

The document that served to answer Cowley’s challenge, more than any other at the time, was authored by A. J. Brumbaugh. Titled *Research Designed to Improve Institutions of Higher Learning*, it was issued by ACE in 1960. Topics addressed in the monograph included: (1) The Need for Institutional Research, (2) Areas of Institutional Research, (3) The Conduct of Institutional Research, and (4) The Effects of Institutional Research. Additionally, appendices noted (A) Institutional Problems on Which Boards Must Make Policy Decisions, (B) Examples of How Institutional Research May Be Organized, and (C) Changes Attributed to the Impact of Institutional Research. Two key paragraphs from the document, including the last paragraph, which was italicized, noted:

The difference between higher educational institutions and business enterprises in no sense relieves the colleges and universities of the responsibility for operating efficiently. But they must develop their own methods of evaluating their own goals and functions.

The key to effective administration is the ability of the president and those who work with him to ask the right questions and then find the right answers. But the right answers to the right questions, whether they are specific in relation to a given institution or whether they are more comprehensive, must take into account all the relevant, factual data—the kind of data that only institutional research can provide.
(Brumbaugh, 1960, p. 2)

A second publication that greatly encouraged the establishment of institutional research offices was *The Managerial Revolution in Higher Education* by Rourke and Brooks (1966). The volume devoted chapters to the effects of increases in bureaucracy, the increasing computerization of campuses, and the need for effective processes in allocating resources, as well as chapters on newer developing styles of university management and managerial innovations. Most important in the Rourke and Brooks volume was a chapter on the growth of institutional research, which traced the origins of institutional research, cited emerging patterns of organization, and speculated on the prospects for increased influence on the part of the field of institutional research in the future (see also Stickler, 1968). The role that these sources played in increasing the awareness, recognition, and necessity for the establishment of effective institutional research units cannot be underestimated.

Practitioners Begin to Organize

The history of the organizational efforts leading to the formation of AIR has been reported in detail by several individuals (Lins, 1966; Stecklein, 1966; Tetlow, 1973; Doi, 1979; Saupe, 2005; Howard, 2011; Lasher, 2011). The following is a description of the five National Institutional Research Forums that led to the creation of AIR (Lins, 1966, pp. i–iii).

National Institutional Research Forums

As a result of various advocacy efforts, an increasing number of campus-based individuals began to feel the need to meet and share common interests, leading to the establishment of the National Institutional Research Forum, a predecessor of what would in time become the Association for Institutional Research.

The National Institutional Research Forum (NIRF) was conceived at a luncheon meeting in Tallahassee, Florida, on July 14, 1960, during a week-long “Institute on Institutional Research” sponsored by SREB. It was agreed that it would be worthwhile to hold an informal national meeting the next spring to discuss methodological problems in institutional research. Attendance would be by invitation only. John Folger, associate director of research at SREB, served as forum chair for the first NIRF meeting, held in Chicago March 4–5, 1961, just prior to the annual meeting of the American Association for Higher Education (AAHE). The meeting had forty-six participants, with sixteen from the Northeast, ten from the South, nine from the West, nine from the Midwest, and two from the United States Office of Education (USOE) in attendance.

The second NIRF meeting was again held in Chicago, March 3–4, 1962, prior to the AAHE meeting, with fifty in attendance and a registration fee of one dollar. John Stecklein of the University of Minnesota served as chair of the Planning Committee. John Dale Russell and A. J. Brumbaugh, the “deans” of institutional research, were honored at the dinner meeting “for their long service to the principles of and their major contributions to institutional research” (Lins, 1966, p. i).

The third NIRF meeting, offering both general and workshop sessions, was held at Wayne State University, May 5–7, 1963. A ten-person Planning Committee, selected nationally rather than regionally, was chaired by L. Joseph Lins of the University of Wisconsin. This meeting was open to “all persons actively engaged and/or vitally interested in institutional research work in colleges or universities or in associations with colleges and universities” (Lins, 1966, p. i). The meeting had 196 in attendance, with representation from thirty-six states as well as the District of Columbia, Hawaii, the Philippines, and Puerto Rico. This was the first meeting for which Proceedings were published, edited by Lins and titled *The Role of Institutional Research in Planning*.

The fourth NIRF meeting was held at the University of Minnesota and Hotel Leamington on May 17–20, 1964, with 146 in attendance. The Proceedings were titled *A Conceptual Role for Institutional Research*. At this meeting it was decided to establish a formal institutional research organization, and a Constitution Committee was formed.

The fifth and final NIRF meeting was held at SUNY Stony Brook, May 3–5, 1965, with 201 in attendance. The Proceedings were titled *Design and Methodology in Institutional Research*. John Stecklein presented the constitution for approval (which it received) and was elected the first president of AIR.

The Association for Institutional Research

The first annual meeting of AIR and the sixth Forum were held at the Hotel Somerset in Boston, May 2–5, 1966, with 257 in attendance. The Forum Proceedings were titled *Research on Academic Input*. AIR was incorporated as a non-profit corporation in the state of Michigan and had, at the time of the meeting, 371 paid members, 282 of whom were Full members and 89 of whom were Associate members.

With the formal establishment of AIR accomplished, Doi (1979) observed that the “old guard” who had been involved in the early workshops and NIRF meetings made an interesting decision with regard to the role they would play in the future of the Association:

Rather than controlling the new association, as they readily might have done, they chose to turn the reins over to the new corps of institutional researchers as quickly as possible. Their intent was to hasten the development of a broad base of leadership for institutional research.

By 1970, none of the forty or so individuals who had participated in the first forum in 1961 occupied a leadership position in AIR; for a professional association, this must have been something of a record. True, not all forty were active in institutional research in 1970, but a number were. More to the point, however, the decision by the older, more experienced leaders to take a back seat in the affairs had two unintended consequences. First, for at least a half dozen years, the AIR conferences were dominated by a concern for identity and utility. What is institutional research? Who are we? Does what we do have significant impact upon decision making? These are obviously questions of importance to recently appointed institutional research directors, but they are hardly those that would advance the state of the art. Second, the technical papers themselves, by and large, reflected ignorance of historical antecedents. As Paul Jedamus of the University of Colorado remarked on more than one occasion, it was as if the profession had no memory. (Doi, 1979, pp. 36–37)

Although AIR was formally established as an organization in 1965, no central office existed until 1974. Therefore the earlier presidents of AIR essentially conducted the Association's business with significant support from their home institutions. Officers were elected from a double slate of candidates suggested by the Executive Committee until an elected Nominating Committee was established in 1976–77. Individuals elected as vice-president would become president the following year and were faced with the additional obligation of serving as Forum chair during their year as vice-president. This practice would continue until separate Forum chair and associate Forum chair positions were established in 1980.

Establishment of AIR Affiliated Regional, State, and Special Interest Groups

While ACE and the regional compacts were the leading advocates for the establishment of Offices of Institutional Research, AIR members took primary responsibility for the establishment of affiliated state, regional, and special interest groups of IR practitioners. AIR strove to encourage the formation of such groups through the establishment of an Affiliated Groups Committee in 1978–79. The first formal listing of Affiliated Regional/Special Interest Groups, appearing in the *1981–82 AIR Directory and Proceedings* of the Association (pp. 134–135), identified thirteen state or regional affiliated groups in the United States and two community college oriented groups—the National Council for Research and Planning (NCRP) and the Southern Association of Community College Researchers (SACCR).

In contrast, in 2010, the AIR website listed fifty-six groups formally affiliated with AIR, including seven international associations, six multistate regional associations, and twenty-nine single-state associations in the United States. Also included among the AIR Affiliated Groups were seven specialized subgroupings of institutional researchers within a single state, such as the City University of New York Council on Institutional Research, and seven mutual interest associations, including such groups as the Traditionally Black Colleges and Universities (TBCU), Institutional Research Faculty, and the New England Educational Assessment Network.

Among the first state-level organizations, the Florida Association for Institutional Research has held annual conferences since 1968, although it did not formally adopt a constitution until 1987. California held its first conference in 1971, with Sidney Suslow of the University of California at Berkeley as the keynote speaker. In 1973, the North Carolina Association for Institutional Research (NCAIR) was among the first groups to formally adopt a constitution and to formally affiliate with AIR. At the multistate regional level, regional interstate associations such as Rocky Mountain AIR and the Association for Institutional Research in the Upper Midwest (AIRUM) began to hold conferences in 1971 while the Southern Association for Institutional Research

(SAIR) and North East Association for Institutional Research trace their first meetings and origins back to 1974.

Establishment of AIR Affiliated International Groups

Theoretically, in terms of methodological and analytic approaches, AIR has seen and continues to see itself as truly international in scope. In reality, AIR's membership base and programmatic offerings have become more and more responsive to issues and forces affecting American higher education. Forums held in Canada, including those in Vancouver (1973), Montreal (1977), and Toronto (1983, 2002, and 2011), have become less common as membership and attendance at the AIR Forum from Canada and other countries have decreased in both numbers and percentage over the past twenty years.

Decreases in non-U.S. AIR membership and Forum participation stem primarily from the formation and growth of seven institutional research associations in other parts of the world that have become affiliated with AIR. The oldest and largest of these associations is the European Association for Institutional Research (EAIR), which held its first Forum in 1979. EAIR has since changed its name to the European Higher Education Society. It has nearly 500 members, and maintains its Secretariat in Amsterdam. Like AIR, the Society publishes its own journal and monograph series.

More recently established international associations include the Australasian Association for Institutional Research (1988), which has published the *Journal of Institutional Research* since 1991; the Southern African Association for Institutional Research (1994); the Canadian Institutional Research and Planning Association (CIRPA, 1994); the Higher Education Research and Policy Network based in Nigeria (2000); and the South East Asian Association for Institutional Research (2001). In addition, the Overseas Chinese Association for Institutional Research was established in 1996. As a "virtual" organization, it discusses issues over the Internet and meets face to face annually at the AIR Forum. Brief profiles of each of these international associations are available online in CIRPA's April 2010 newsletter at http://www.cirpa-acpri.ca/images/newsletter_pdfs/vol12no2eng.pdf. For a comparison of common external conditions shaping management and institutional research in the United States and Europe at the time of the twenty-fifth anniversary forums of EAIR and AIR, see Peterson, 2003.

Alternative Views of IR: Research, Administrative Support, or Self-Study?

Embedded in AIR's origins and continuing to the present is a fundamental question: Was the association to be theoretical in nature, intended to contribute to basic understandings of the higher education enterprise, or was it to be

concerned with problems of a purely operational nature? Could it serve both purposes? References to several key publications highlight important sources that helped to frame the debate and set the stage for further discussion in other chapters of this *Handbook*.

In his article “Can Institutional Research Lead to a Science of Institutions?” Dyer (1966) summarized the fundamental debate—whether institutional research should be theoretical or operational in nature—by indicating the seemingly polar opposite positions taken by Nevitt Sanford and John Dale Russell.

The theoretical perspective is perhaps best stated in the last chapter of Sanford’s monumental work *The American College: A Psychological and Sociological Interpretation of the Higher Learning* (Sanford, 1962, 1009–1034). The operational views of John Dale Russell appear in many places but are perhaps most succinctly summarized in a presentation, “The Purpose and Organization of Institutional Research,” made at the same 1959 Stanford workshop sponsored by WICHE in which Cowley traced the history of institutional research back more than 250 years (Russell, 1960, pp. 17–22).

Dyer concludes that both views must be integrated because “either approach if used by itself is almost certain to be sterile; used together they have an outside chance of changing things for the better” (Dyer, 1966, p. 454). The centrality and relevance of Dyer’s article to the debate over the role of institutional research is further highlighted in the first AIR presidential address (Stecklein, 1966) and the fact that these discussions continue to the present.

Paul Dressel, founder of the Office of Institutional Research at Michigan State University, took the middle ground in the Sanford-Russell debate, arguing for institutional research as an independent force empowered to objectively look into all aspects of an institution, especially the self-study and long-range planning processes (Dressel, 1964). Later, in *Institutional Research in the University: A Handbook*, Dressel states: “The basic purpose of institutional research is to probe deeply into the workings of an institution for evidence of weakness or flaws which interfere with the attainment of its purposes or which utilize an undue amount of resources in so doing. In the search for flaws, no function, individual, or unit should be regarded as off limits” (Dressel & Associates, 1971, p. 23).

Interpreting and Providing Examples of IR to IR Practitioners

Prior to the vote to formally establish AIR in 1965, examples of institutional research of interest to would-be practitioners or those already engaged in institutional research were limited, by and large, to the fugitive publishing of occasional workshop proceedings. A rare exception is a monograph published at the University of Wisconsin, *Basis for Decision: A Composite of Institutional Research Methods and Reports of Colleges and Universities* (Lins, 1963). In the Foreword,

the editor indicated that the publication was “presented as a service to persons interested in and concerned with institutional research. It is hoped that it will, in at least a small way, fill a felt need—that of providing an avenue for exchange of methods and results of research” (Lins, 1963, p. iii). Among the 29 complete or summarized studies contained in the document are a study of Faculty Satisfactions and Dissatisfactions by John Dale Russell and a study of College Preparatory Course Work coauthored by James Montgomery, the second president of AIR. Indeed, it was the discovery of the Lins document that led the author of this chapter to pursue a doctoral program and career with an emphasis on institutional research.

As a fledgling organization and field of endeavor, AIR needed to explain what institutional research was all about to a growing number of interested administrators, as well as to AIR members and potential members. A publication titled *A Look at the Charter Members of AIR* (Bureau of Institutional Research, 1966) helped to serve this need through an analysis of the characteristics of AIR’s 382 charter members. The survey noted, among other things, memberships in other professional organizations, the types and sizes of institutions employing AIR members, levels and fields of academic preparation, age, sex (90 percent were male), academic rank (held by 42 percent), and the types of duties and studies in which charter members were engaged.

The study of the 1966 Charter Members of the Association was updated by Tincher (1970). By 1970, membership in AIR had increased 136 percent, from 382 in 1966 to 902. Four years after its founding, 223 of the 382 (58 percent) of AIR’s original charter members had retained their membership. In 1970, approximately 84 percent of the membership was employed in college and university settings, while about half of the remaining membership was employed by state-supported agencies or coordinating groups. The number of AIR members employed in state agency, non-campus settings was the most rapidly growing group, increasing from 19 to 50 in the four-year period. AIR membership would increase to 1,765 in 1980, 2,485 in 1990, 3,097 in 2000, and approximately 4,200 in 2010. A much more detailed account of the development of the Association for Institutional Research, decade by decade, over the last fifty years is provided by Howard (2011) and Lasher (2011).

A second type of publication of the Association, titled *Memo to a Newcomer to the Field of Institutional Research* (Saupe, 1967), provided advice to administrators and those charged with setting up Offices of Institutional Research. It suggested a range of higher education associations with related interests, journals or other publications to which an office might wish to subscribe, and academic centers for the study of higher education that might offer courses or programs of interest (four were listed), and it included a brief bibliography on institutional research.

Memorandum to a Newcomer in the Field of Institutional Research (Lyons, 1976) essentially updated Saupe’s earlier document. Its purpose was to “provide the newly appointed institutional research officer with a descriptive compendium

of available resources” (p. i). Lyons lamented that institutional research in the preceding decade had become more subject to a management orientation, so that “most institutional researchers find themselves spending more and more time compiling data about current institutional operations” (p. 1). The number of academic research centers for the study of higher education had increased from four to ten. There were additions to the list of periodic publications that AIR recommended an Office of Institutional Research subscribe to: *Change Magazine* and the New Directions for Institutional Research, New Directions for Higher Education, and New Directions for Community Colleges series published by Jossey-Bass, which did not exist at the time of Saupe’s 1967 publication.

An important question, regularly discussed at the Forums from their inception, related to whether institutional research is truly a profession and whether it possesses a code of ethics particular to the craft (McLaughlin & Howard, 2001). The “annual angst” of such discussions and the process of developing a code of ethics for AIR practitioners is reflected in *Ethics and Standards in Institutional Research* (Schiltz, 1992). Much of the material in this particular volume was the work of AIR’s Committee on Standards and Ethics of the Association, which led to the development of a Code of Ethics adopted initially by the membership in 1992, and subsequently updated in 2001. Major sections of the Code speak to competence, practice, confidentiality, as well as relationships to the community and to the craft.

Interpreting IR to the Broader Higher Education Community

Institutional researchers sometimes have enough difficulty explaining to their own families and institutions the somewhat esoteric nature of what they do for a living. It is even more challenging to explain the nature and benefits of institutional research to broader audiences. The first such attempts, as previously noted, were made by advocates for the establishment of such offices not directly employed in campus-based institutional research settings (Brumbaugh, 1960; Dyer, 1966; Rourke & Brooks, 1966). Of the subsequent efforts by the Association for Institutional Research or individual IR practitioners to articulate to broader audiences the needs, benefits, and challenges facing institutional research, those especially worthy of note are described in this section.

The first statement prepared for AIR that was intended to interpret institutional research to a wider audience than those already in the choir was *The Nature and Role of Institutional Research* (Saupe and Montgomery, 1970). The questions addressed included:

- What is institutional research?
- How pure can institutional research be?
- What can institutional research do for the institution?

- Should institutional research be administratively or educationally oriented?
- How should institutional research relate to long-range planning?
- How should institutional research be organized?
- What are the requirements for effective institutional research?

A more current version of Saupe and Montgomery's 1970 monograph bears the title *The Functions of Institutional Research*, second edition (Saupe, 1990). This monograph is actually a revision of a similar document produced by Saupe in 1981.

Mindful of Cowley's (1960) plea for institutional research to be stated more convincingly, AIR obtained a grant from the Esso Education Foundation to support an invitational conference with fifteen participants that met at Shakertown in Pleasant Hill, Kentucky, in 1971. The result of the conference was *A Declaration on Institutional Research* (Suslow, 1972).

Occasionally, individual practitioners are asked to provide brief introductions to the field for external audiences. An entry in the *International Encyclopedia of Higher Education*, "Institutional Research," provides an example of this type of overview (Sheehan & Torrence, 1977). Although primarily reflecting North American patterns in the conduct of institutional research, the article indicates that in Europe institutional research functions are often circumscribed by the nature of the state's control over institutions of higher education. Both continental and British institutions also noted a tendency to co-opt faculty for ad hoc studies rather than developing permanent analytical staff (p. 2184). For those willing to accept information at face value the "institutional research" entry in Wikipedia may suffice. Like all Wikipedia entries, the authorship is unknown, but the Wikipedia entry does direct individuals to several other sources, including the AIR website.

Among the most recent and notable publications that help to interpret institutional research to those in the broader higher education community is an entry in the New Directions for Higher Education (NDHE) series titled *Institutional Research: More Than Just Data* (Terkla, 2008). This volume helps demonstrate—to a wider audience than the institutional research community alone—that institutional researchers are more than "bean counters" who are sometimes reputed to know the cost of everything and the value of nothing.

Adding Perspective: Some Key Sources

All too seldom does a profession or practitioners of that profession take the opportunity to reexamine where their profession has been and where it is going, unless there is a specific occasion to do so or the practitioners choose to take time out for reflection. In this regard, three primary resources that provide perspective on the development of the field of institutional research are *Institutional Research in the University: A Handbook* (Dressel & Associates,

1971), *Improving Academic Management: A Handbook of Planning and Institutional Research* (Jedamus & Peterson, 1980), and the *ASHE Reader on Planning and Institutional Research* (Peterson & Associates, 1999).

Persons choosing to search the Web on the term *institutional research* would find many references to the web pages for specific offices of institutional research or studies produced by such offices, but surprisingly few entries that focus specifically on the field of institutional research. Indeed, the New Directions for Institutional Research (NDIR) series, which has produced more than 150 quarterly sourcebooks since its inception in 1974, includes only two issues that provide integrated retrospective views of the profession (Peterson & Corcoran, 1985; Volkwein, 1999b). In a third NDIR volume, future possibilities for the redesign and transformation of institutional research are examined (Leimer, 2009).

Faced with an unprecedented period of two successive years of decline in AIR membership—from 1,869 members in 1981–82 to 1,627 members in 1982–83 and to 1,544 members in 1983–84—in September 1982 the Association appointed a twelve-member Commission to Reassess the Purposes and Objectives of the Association. The Commission examined the role of institutional research in the higher education environment of the 1980s, the purposes of the Association, and the visibility of the profession and the Association in postsecondary education. Also examined were AIR's membership base, international activities, input into policy development, and AIR's service to its members (Reichard, 1984).

The Commission made ten recommendations. Its report spoke of the need to develop a year-round array of professional services that would serve its members between forums; the need to recruit “invisible” institutional researchers employed outside of formally designated offices of institutional research; and the need to understand more fully how the efforts of AIR and affiliated regional, state, provincial, and international groups might best complement each other. The Commission's report led to a substantially increased commitment by the Association to enhancing the professional development of its members and expanded input by the Association and its members in the development of federal and state data collection policies.

A special volume of NDIR that coincided with AIR's twenty-fifth anniversary Forum was both retrospective and prospective (Peterson & Corcoran, 1985). The lead chapter by Peterson (1985) identified three main periods for institutional research development: (1) the emergence of the profession in the 1950s and 1960s, (2) a period of growth and consolidation in the 1970s, and (3) a period of fragmentation and uncertainty in the 1980s. For each of these periods, forces affecting higher education were examined in relation to the practice of institutional research, the profession of institutional research, and developments within the Association for Institutional Research.

The second chapter in the NDIR volume, coinciding with the twenty-fifth anniversary Forum, traced the various theoretical bases, methods of inquiry, and empirical findings that might suggest that the field of institutional research

was predominantly either an art or a science. Fincher (1985) concluded that the merits of institutional research were less dependent on its scientific underpinnings than on its relevance in decision and policy making.

Of special interest for its substance and clarity is the keynote address at the 1995 Forum in Boston, titled “Evolution and Revolution in Institutional Research” (Terenzini, 1995). This presentation expands on Terenzini’s conception of the nature of institutional research (1993) and traces the emergence of institutional research in the 1950s and 1960s; the growth, consolidation, and analytical developments of the 1970s; as well as the assessment, planning, and quality assurance emphases, which led to the dispersion of institutional research functions in the 1980s and beyond.

The chapter titled “The Role of Institutional Research: From Improvement to Redesign” (Peterson, 1999) extends Peterson’s earlier (1985) work by expanding the analyses of evolutionary forces affecting institutional research through the last fifteen years of the twentieth century. This chapter is the last chapter in the NDIR volume titled *What Is Institutional Research All About? A Critical and Comprehensive Assessment of the Profession* (Volkwein, 1999b). It analyzes twenty-first-century challenges and the forces reshaping the postsecondary knowledge industry. Institutional research is seen as a force for institutional redesign. Peterson concludes that “institutional research has flourished as an institutional function and a profession because it has contributed to institutions’ *adaptive function* and has played a major role in fostering and assisting institutional change” (p. 84).

The chapter titled “The Foundations and Evolution of Institutional Research” (Volkwein, 2008) expands on Volkwein’s earlier work (1999a, 1999b) and presents an overview of the evolution of institutional research, as well as a description of the many different topics addressed by institutional research practitioners in highly varied organizational settings. This chapter, and the entire NDHE volume of which it is a part, provides valuable insights for those new to the profession of institutional research as well as those with responsibilities for supervising the institutional research function who may not have had previous professional experience in the area.

Concluding Note

From an informal invitational meeting with forty-six in attendance at the first National Institutional Research Forum in 1961, to a vibrant professional organization with over four thousand members some fifty years later, the Association for Institutional Research and the profession of institutional research, wherever practiced throughout the world, have continued to grow and adapt to changing roles and conditions.

More than thirty years ago, Doi (1979) attributed the viability of institutional research to the confluence of actors and events with reciprocal interests,

including (1) the regional interstate compacts for higher education, which served as the first advocates for establishing institutional research offices; (2) the spread of state-wide coordination of higher education, from nine states in 1954 to forty-eight states in 1978; and (3) the growth of research into the higher education enterprise and development of instruments of interest to individual institutions by organizations such as the Educational Testing Service, American College Testing Program, or the National Center for Higher Education Management Systems (NCHEMS); and (4) the growth of graduate programs in higher education whose professors expand the perspectives of institutional research practitioners, and whose academic departments occasionally provide a home base for practitioners who seek a more contemplative life later in their careers.

Today, although the names of actors, issues, and technology have changed, the factors identified by Doi still exist. Integrated Postsecondary Education Data System (IPEDS) reporting and the need for institutional research involvement in assessment, accreditation, and institutional effectiveness processes (Reichard & Marchese, 1987) have created what some refer to as the “First and Second Full-Time Employment Acts for Institutional Researchers.” Meeting such needs, as described in other portions of this *Handbook*, may account in part for the continued growth of the Association for Institutional Research. However, we need to be continually reminded that institutional research is, indeed, about more than just data.

Whether institutional research is destined to play a leading or a supporting role in addressing the postsecondary knowledge industry’s future needs is open to debate. If institutional researchers and those concerned with the profession can add perspective to the institutional issues at hand and contribute meaningfully to the further development of analytical processes at their institutions, the prospects for the next fifty years will most likely be bright for the institutional research profession and its professionals.

References

- Axt, R. G., & Sprague, H. T. (Eds.). (1960). *College self-study: Lectures on institutional research*. Boulder, CO: The Western Interstate Commission for Higher Education.
- Brumbaugh, A. J. (1960). *Research designed to improve institutions of higher learning*. Washington, DC: American Council on Education.
- Bureau of Institutional Research, University of Minnesota. (1966). *A look at the charter members of AIR*. Minneapolis, MN: University of Minnesota.
- Cooke, M. L. (1910). *Academic and industrial efficiency*. New York: Carnegie Foundation for the Advancement of Teaching.
- Cowley, W. H. (1960). Two and a half centuries of institutional research. In R. G. Axt and H. T. Sprague (Eds.), *College self studies: Lectures on institutional research*. Boulder, CO: Western Interstate Commission on Higher Education, 1–16.
- Doi, J. L. (1979). The beginnings of a profession. In R. G. Cope (Ed.), *Professional development for institutional research* (pp. 33–41). *New Directions for Institutional Research*, no. 23. San Francisco: Jossey-Bass.

- Dressel, P. L. (1964). A comprehensive and continuing program of institutional research. In E. McGrath (Ed.), *Cooperative long-range planning in liberal arts colleges* (pp. 37–49). New York: Teachers College, Columbia University.
- Dressel, P. L., & Associates. (1971). *Institutional research in the university: A handbook*. San Francisco: Jossey-Bass.
- Dyer, H. S. (1966). Can institutional research lead to a science of institutions? *Educational Record*, 452–466.
- Eells, W. C. (1937). *Surveys of American higher education*. New York: Carnegie Foundation for the Advancement of Teaching.
- Fincher, C. (1985). The art and science of institutional research. In M. W. Peterson and M. Corcoran (Eds.), *Institutional research in transition* (pp. 17–37). New Directions for Institutional Research, no. 46. San Francisco: Jossey-Bass.
- Howard, R. D. (2011). AIR History—Governance, Policies, and Services—Perspectives of Past Presidents 1965–2010. In M. A. Coughlin & R. D. Howard (Eds.), *The Association for Institutional Research: The First 50 Years*. Tallahassee, FL: Association for Institutional Research.
- Jedamus, P., & Peterson, M. W. (Eds.). (1980). *Improving academic management: A handbook of planning and institutional research*. San Francisco: Jossey-Bass.
- Lasher, W. F. (2011). The history of institutional research and its role in American higher education over the past 50 years. In M. A. Coughlin & R. D. Howard (Eds.), *The Association for Institutional Research: The first 50 years*. Tallahassee, FL: Association for Institutional Research.
- Leimer, C. (Ed.). (2009). *Imagining the future of institutional research*. New Directions for Institutional Research, no. 143. San Francisco: Jossey-Bass.
- Lins, L. J. (1963). *Basis for decision: A composite of institutional research methods and reports of colleges and universities*. Madison, WI: Dembar Educational Research Services. Also in *Journal of Experimental Education*, 1962, 31(2), 88–234.
- Lins, L. J. (1966). The Association for Institutional Research: A history. In C. H. Bagley (Ed.), *Research on academic input*. Proceedings of the Sixth Annual Forum of the Association for Institutional Research, Boston, Massachusetts, i–iii.
- Lyons, J. L. (1976). *Memorandum to a newcomer to the field of institutional research*. Tallahassee, FL: Association for Institutional Research.
- McLaughlin, G. W., & Howard, R. D. (2001). Theory, practice, and ethics of institutional research. In R. D. Howard (Ed.), *Institutional research: Decision support in higher education* (pp. 163–194). Tallahassee, FL: Association for Institutional Research.
- Niehoff, R. O. (1991). *Floyd W. Reeves: Innovative educator and distinguished practitioner of the art of public administration*. Lanham, MD: University Press of America.
- Peterson, M. W. (1985). Institutional research: An evolutionary perspective. In M. W. Peterson and M. Corcoran (Eds.), *Institutional research in transition* (pp. 5–15). New Directions for Institutional Research, no. 46. San Francisco: Jossey-Bass.
- Peterson, M. W. (1999). The role of institutional research: From improvement to redesign. In J. F. Volkwein (Ed.), *What is institutional research all about? A critical and comprehensive assessment of the profession* (pp. 83–103). New Directions for Institutional Research, no. 104. San Francisco: Jossey-Bass.
- Peterson, M. W. (2003). Institutional research and management in the U.S. and Europe: Some EAIR-AIR comparisons. In R. Begg (Ed.), *The dialogue between higher education research and practice* (pp. 1–15). Dordrecht, the Netherlands: Kulwer Academic Publishers.
- Peterson, M. W., & Associates (Ed.). (1999). *ASHE reader on planning and institutional research*. Needham, MA: Pearson Custom Publishing.
- Peterson, M. W., & Corcoran, M. (1985). Proliferation or professional integration: Transition or transformation. In M. W. Peterson and M. Corcoran (Eds.), *Institutional*

- research in transition* (pp. 99–112). New Directions for Institutional Research, no. 46. San Francisco: Jossey-Bass.
- Peterson, M. W., Dill, D. D., Mets, L. A., & Associates. (1997). *Planning and management for a changing environment*. San Francisco: Jossey-Bass.
- Reichard, D. J. (Chair). (1984). Final report of the commission to reassess the purposes and objectives of the Association. *AIR 1984–85 Directory* (pp. 16–39). Tallahassee, FL: Association for Institutional Research.
- Reichard, D. J., & Marchese, T. J. (1987). Assessment, accreditation, and institutional effectiveness: Implications for our profession. Presidential Session in *Managing Education Better: Technology and Tomorrow* (pp. 27–42). 27th Annual Forum of the Association for Institutional Research, Kansas City, MO.
- Rourke, F. E., & Brooks, G. E. (1966). *The managerial revolution in higher education*. Baltimore, MD: Johns Hopkins University Press.
- Russell, J. D. (1960). The purpose and organization of institutional research. In R. G. Axt & H. T. Sprague (Eds.), *College self studies: Lectures on institutional research*. Boulder, CO: Western Interstate Commission on Higher Education, 17–22.
- Sanford, N. (1962). Research and policy in higher education. In N. Sanford (Ed.), *The American college: A psychological and sociological interpretation of the higher learning* (pp. 1009–1034). New York: Wiley.
- Saupe, J. L. (1967). *Memo to a newcomer to the field of institutional research*. Tallahassee, FL: Association for Institutional Research.
- Saupe, J. L. (1990). *The functions of institutional research* (2nd ed.). Tallahassee, FL: Association for Institutional Research.
- Saupe, J. L. (2005, November 10). How old is institutional research and how did it develop? Presentation made at the Annual Mid-America Association for Institutional Research (MIDAIR).
- Saupe, J. L., & Montgomery, J. R. (1970). *The nature and role of institutional research: Memo to a college or university*. Tallahassee, FL: Association for Institutional Research.
- Schietinger, E. F. (Ed.). (1968). *Introductory papers on institutional research*. Atlanta: Southern Regional Education Board.
- Schietinger, E. F. (1979). Origins of IR. *Research in Higher Education*, 10, 371–374.
- Schiltz, M. E. (Ed.). (1992). *Ethics and standards in institutional research*. New Directions for Institutional Research, no. 73. San Francisco: Jossey-Bass.
- Scroggs, S. (1938). *Systematic fact-finding and research in the administration of higher education*. Doctoral dissertation, Yale University. Ann Arbor, MI: Edwards Brothers.
- Sheehan, B. S., & Torrence, L. E. (1977). Institutional research. In A. S. Knowles (Ed.), *International Encyclopedia of Education* (pp. 2184–2193). San Francisco: Jossey-Bass.
- Stecklein, J. E. (1960). Institutional research at the Universities of Colorado, Wisconsin, and Minnesota. In R. G. Axt & H. T. Sprague (Eds.), *College self-studies: Lectures on institutional research*. Boulder, CO: Western Interstate Commission on Higher Education, 31–35.
- Stecklein, J. E. (1966). President's address: The birth of a profession. In C. H. Bagley (Ed.), *Research on academic input* (pp. 9–13). Proceedings of the Sixth Annual Forum of the Association for Institutional Research, Boston, MA.
- Stickler, W. H. (1968). The role of institutional research in the managerial revolution in higher education: An overview. In E. F. Schietinger (Ed.), *Introductory papers on institutional research* (pp. 1–15). Atlanta: Southern Regional Education Board.
- Suslow, S. (1972). *A declaration on institutional research*. Esso Education Foundation and Association for Institutional Research.
- Terenzini, P. T. (1993). On the nature of institutional research and the knowledge and skills it requires. *Research in Higher Education*, 34, 1–10.

- Terenzini, P. T. (1995). Evolution and revolution in institutional research. Keynote address at AIR Forum, Boston, MA.
- Terkla, D. G. (Ed.). (2008). *Institutional research: More than just data*. New Directions for Higher Education, no. 141. San Francisco: Jossey-Bass.
- Tetlow, W. L. (1973). *Institutional research: The emergence of a staff function in higher education*. Doctoral dissertation, Cornell University.
- Tincher, W. A. (1970). *A study of the members of the Association for Institutional Research*. The Association for Institutional Research.
- Volkwein, J. F. (1999a). The four faces of institutional research. In J. F. Volkwein (Ed.), *What is institutional research all about? A critical and comprehensive assessment of the profession* (pp. 9–19). New Directions for Institutional Research, no. 104. San Francisco: Jossey-Bass.
- Volkwein, J. F. (Ed.). (1999b). *What is institutional research all about? A critical and comprehensive assessment of the profession*. New Directions for Institutional Research, no. 104. San Francisco: Jossey-Bass.
- Volkwein, J. F. (2008). The foundations and evolution of institutional research. In D. G. Terkla (Ed.), *Institutional research: More than just data* (pp. 5–20). New Directions for Higher Education, no. 141. San Francisco: Jossey-Bass.