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ABSTRACT

The way that a college can transform its periodic self-study process into an ongoing program is addressed, with a focus on the contribution of the institutional research office. Also considered are data elements that self-studies most often require and the way that data elements relate to judgments and interpretations made through the self-study. Three types of data elements are needed to describe the institution, its resources, and resource utilization. Institutional descriptors include: type of institution, institutional control, type of school calendar, accrediting agencies, level of degrees or certificates, formal full-time credit hour load, student charges, and programs offered. Resources most commonly assessed include faculty, facilities, equipment, collections, computers, finances, and students. An inventory of the most common data elements utilized to measure resources is provided. Several important measures describing resource utilization that relate to faculty, finances, and students are also listed. Specific indicators that provide facts about resources and help monitor changes are identified, including calculation formulas. Suggestions about how an institutional research office can support a self-study program are included, along with a list of references on self-study. (SW)



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# PREPARING FOR SELF-STUDY

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)"

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Colleges and universities have studied everything from cabbages to kings, but rarely have they paused willingly to reflect on the effectiveness of their own educational programs and services. Although accreditation is a useful process that can promote self-analysis, it remains both periodic and externally motivated. Self-study, on the other hand, can become an integral and continuing part of an institution's self-consciousness. If an institution is to ensure both its effectiveness and future viability, it must know itself well. This requires not merely information but the willingness and wisdom to apply it in an ongoing effort of constructive institutional change.

This issue of *The AIR Professional File* offers some basic information on how institutions can transform their periodic self-study efforts into an ongoing program. It focuses in particular on the role of the institutional research office in developing an ongoing readiness for self-study.

After briefly discussing the self-study process and the role of an institutional research office, the authors enumerate those data elements that self-studies most often require. From this information, an institution can then develop specific indicators that provide facts about its resources and help monitor changes in its condition or function. We then consider how data elements relate to judgments and interpretations that institutions must make as part of a self-study. The final section deals with specific suggestions on how an institutional research office can help support a self-study program. A list of useful references provides further aid for those preparing for self-study and for those interested in promoting effective management through an explicit program of institutional assessment.

## The Purpose of Self-Study

Assessment, like education itself, is a means to encourage self-reflection. Self-study offers an institution the opportunity to ask questions about itself and improve the quality of its programs and services. Effective self-study is comprehensive in that it bridges the gap between planning and outcomes assessment, between goals and results. The process requires that an institution articulate its specific mission and educational goals as concretely and comprehensively as possible. Only by understanding an institution's goals can outcomes be measured and performance improved. When strengths and weaknesses have been determined, a detailed analysis of resource availability and utilization can shed light on current and desired outcomes. This allows administrators to evaluate planning and decision-making processes and modify them as needed. They can then develop specific scenarios to accomplish institutional objectives. This self-study process requires explicit assessment information and the willingness of the institution to reward those undertaking qualitative improvements in programs and services.

The benefits of self-study, however, can go far beyond helping institutions and programs to clarify their goals, identify problems, evaluate their goal achievements, and introduce necessary changes. If properly implemented, self-study can promote a wide range of beneficial activities, a partial list of which would include some of the following items mentioned by H.R. Kells (1980):

- Incorporate ongoing, useful institutional research and self-analysis into the life of the institution
- Provide a firm foundation for planning efforts
- Orient recently hired staff, particularly chief executive officers, to the institution
- Narrow the gap that often exists between personal and organizational goals
- Improve communication
- Identify new leaders within the institution
- Stimulate the often-neglected review of policies, practices, procedures, and records
- Yield fund-raising ideas and the basic documents upon which such efforts can be based.

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A poorly developed self-study program can exercise a decidedly negative influence on an institution and its decision-making process. If the self-study is not done properly, an institution might even lose its accreditation and, in turn, forfeit potential students and qualified faculty as well as federal, state, and local funds. Lost accreditation is the final, objective confirmation that an institution has neglected to study and improve itself Even when it is performed, an externally required self-study is all too often a frantic and troubled exercise. The panic that usually precedes the report is matched only by the benign neglect it receives after its release. If recommendations are not implemented and progress is not assessed, few institutions can escape the self-satisfied lethargy that almost surely leads to mediocrity.

The periodic nature of accreditation and the self-study that usually precedes it further mitigate their potential usefulness. External assessments are not always scheduled in a rational manner. One Northeastern public university, for example, was recently visited 40 times in a three-year period. An institution that does not have an ongoing self-assessment capacity will find that it spends an inordinate amount of time and money in self-study exercises that make no contribution to a coherent, continuing planning cycle. If an institution's motivation for self-study lies in its reaction to external forces rather than its own willingness to improve internal planning and effectiveness, self-study will remain an episodic and, in the end, questionable effort to improve institutional effectiveness.

## The Institutional Research Office

Although self-study necessarily involves all aspects of an institution, it nevertheless requires some specific means of support The institutional research office can play an important role in supporting the self-study process and contributing to its value and effectiveness. The involvement of such offices can differ considerably, depending on the circumstances. Some offices might conduct the entire study, while others might serve as occasional consultants. Factors that influence this decision include the objectives of the administration, institutional size, growth rate, economic conditions, and the credibility of the institutional research office.

If properly utilized, the institutional research office can be an invaluable resource. Existing institutional research reports may provide much of the necessary background for self-assessment. Moreover, researchers are able to assist self-studies by collecting or utilizing available local, regional, or national data and by conducting surveys and requested studies. Clearly, close cooperation between the institutional research office and the self-study program can be highly beneficial to both Firnberg and Bridger (1983), for example, found that Louisiana State University's self-study offered institutional researchers a convenient natural avenue to develop data collection while simultaneously supporting a highly visible local campus need.

If the institutional research office is to be an effective partner in a self-study program, it must be prepared to provide support. The authors recommend that data collection and studies be done on an ongoing basis instead of once every several years or in the crisis mode that usually accompanies most self-study or accreditation deadlines. This will provide administrators with an up-to-date perspective on the institution's condition and will lay an indispensable groundwork for strategic planning. Moreover, by being prepared for the self-study process, the institutional research office will be able to respond more quickly and effectively to all manner of requests.

## Data Elements

The lack of standard terminology may impair the data collection necessary for a successful self-study program. Institutions commonly identify and define data items in different ways, as do accrediting agencies themselves. These differing definitions can easily lead to misinterpretation of data. Moreover, these inconsistencies impose a substantial burden on an institution faced with multiple assessment activities. To remedy this situation, the Ford Foundation funded a joint project between the Council on Postsecondary Accreditation (COPA) and the National Center for Higher Education Management Systems (NCHEMS). The project developed a common language for accreditation data collection that will reinforce an institution's commitment to the integrity, quality, and cohesiveness of its educational programs and objectives. At the beginning of the project, each of the accrediting bodies was surveyed to determine those data elements commonly utilized or requested for self-study. The final project document summarizes those data elements most frequently required for institutional self-studies and accreditation reports (Christal and Jones, 1985). They are organized into three categories. institutional descriptors, resource descriptors, and resource-utilization descriptors.

**Institutional Descriptors.** Before initiating a self-study program, it is important to distinguish between different units of analysis. Depending on an institution's size, structure, mission, and student composition, it may have very specific assessment needs, many of which may require a different level or unit of analysis. Depending on the circumstances, a self-study program will involve an entire institution or a subunit within that institution, such as a school, college, department, or specific program.

No matter which unit of analysis is chosen, basic, contextual data are needed to identify and locate the unit along various common scales. For example, when describing institutions as a whole, it is useful to identify the broad mission of the institution, the type of control (public or independent), admissions requirements, and so forth. Table 1 lists those data elements and standard classifications that provide basic information about the unit being studied. Most are from experienced sources such as the National Center for Education Statistics and the National Association of College and University Business Officers.

## Table 1
## Institutional Descriptors

**Types of Institutions**—Doctoral-granting; comprehensive, general baccalaureate, 2-year, specialized, less than 2-year (noncollegiate)

**Institutional Control/Legal Entity**—Public, private; other

**Calendar**—Quarter; semester, trimester, 4-1-4 plan; continuous term

**Accrediting Agencies (of institution or programs)**—Institutional national and regional, professional and specialized

**Level of Degrees/Diplomas/Certificates Awarded**—Postsecondary certificate or diploma (less than one year); postsecondary certificate or diploma (one but less than four years); associate's degree, bachelor's degree, master's degree, first-professional degree, doctoral degree

**Normal Full-Time Credit Hour Load**—Total number of credits required to complete a student program, divided by the number of terms normally required

**Student Charges**—Tuition, required fees, room and board

**Admissions Requirements**—Completion of specified level of requisite education, standardized test scores, rank in class

**Programs Offered**—Inventory of programs offered, using the NCES Classification of Instructional Programs (CIP)

**Resource Descriptors.** At one time, accreditation standards were formulated almost entirely in terms of the *quantity* of the resources available within an institution. More recent accreditation standards reflect a much better balance between resources and educational outcomes. This shift is important because it provides institutions with an opportunity to assess benefits, not merely costs or inputs. This new perspective, however, in no way negates the necessity of assessing the quality of assets and resources available to an institution. To do this, an ongoing self-study program must have access to specific data. Resources most commonly assessed include faculty, facilities, equipment, collections, computers, finances, and students. Table 2 provides an inventory of the most common data elements utilized to measure resources.

## Table 2
## Resource Descriptors

**Faculty/Staff Demographic Characteristics**

Race Ethnic Origin Black, not of Hispanic origin, Hispanic, Asian or Pacific Islander, American Indian or Alaskan native, White, not of Hispanic origin, nonresident alien

Sex—Male; female

Appointment Status—Full-time, part-time

Type of Appointment—Regular employee, adjunct; visiting

Type of Position—Executive, administrative managerial professional, instruction research professional, specialist, support professional, technical employee, office clerical employee, crafts and trades employee, service employee

Faculty-Rank Title - Professor, associate professor, assistant professor, instructor, other (might include lecturer, graduate assistant, or undesignated rank)

Tenure Status—Tenure track (tenured, nontenured), contractual

Highest Educational Credential—No academic credential; high school diploma or equivalent, postsecondary certificate or diploma (less than one year), postsecondary certificate or diploma (one but less than four years), associate's degree, bachelor's degree, master's degree, first-professional degree, doctoral degree

**Facilities Resources**

Buildings—Size (gross area and assignable area), age-construction date, replacement cost, ownership, condition

Rooms—Size (net assignable area) by room type, number of stations, room types classroom, class laboratory, other laboratory, study (library), special use, general use, support, office, health-care, residential

**Equipment**

Measurement—Book value, replacement cost, dollar value of equipment when purchased or received

**Collections**

Measurement—Number of volumes (print materials, audiovisual materials), new acquisitions; distribution of collections by subject area

**Financial Resources**

Assets—Cash, investments, accounts receivable, notes receivable, undrawn appropriations, inventories, prepaid expenses and deferred charges, institutional plant

Liabilities—Accounts payable and accrued liabilities; notes, bonds, and mortgages payable, deposits, deferred revenues/credits

**Student Descriptors/Characteristics**

Unit of Analysis—Applicants, acceptances, enrollees

Race/Ethnic Origin—Black, not of Hispanic origin, Hispanic, Asian or Pacific Islander, American Indian or Alaskan native, White, not of Hispanic origin, nonresident alien

Sex—Male, female

Age Range—Under 18; 18-19, 20-21, 22-24; 25-29, 30-34; 35-39; 40-49; 50-64; 65 and older

Enrollment Status—Full-time; part-time

Level Undergraduate, first-time freshman, other first-year student, second-year student or sophomore, third-year student or junior, fourth-year student and beyond or senior, first-professional first-time, other first-professional, graduate: first-time, other graduate; unclassified; undergraduate, postbaccalaureate

Geographic Origin—In-district (where applicable); in-state but out-of-district (where applicable); in-state; out-of-state; foreign

Citizenship—United States; foreign national

Educational Credentials - No academic credentials, high school diploma or equivalent, postsecondary certificate or diploma (less than one year), postsecondary certificate or diploma (one but less than four years); associate's degree; bachelor's degree; master's degree, first-professional degree; doctoral degree

Objective—Degree seeking; non-degree seeking

Degree Sought—Postsecondary certificate or diploma (less than one year); postsecondary certificate or diploma (one but less than four years); associate's degree; bachelor's degree; master's degree; first professional degree; doctoral degree

Aptitude—Scores on standardized tests (ACT, SAT, GRE, etc.); high school rank

**Resource-Utilization Descriptors.** Resource utilization can be described from two quite different perspectives: that of the institution, or subunit thereof, and that of the student body. When viewed from the institutional perspective, the question of resource utilization is closely tied to that of allocation. How many FTE faculty are allocated to major functions, such as instruction, research, and administration? How are financial resources allocated to different programs or oragnizational units? From the student perspective, however, the question turns on the extent to which institutional resources and programs are drawn upon by the student body. For example, how great is student demand for courses offered in various disciplines and for counseling and other student services? Table 3 lists several important measures describing resource allocation as they relate to faculty, finances, and students.

**Table 3**
**Resource-Utilization Descriptors**

**Resource-Allocation Measures**

Faculty Staff- FTE, faculty contact hours, allocation to programs (instruction, advising, research, service)

Financial Resources–

Revenues, tuition and fees, governmental appropriations, governmental gifts, grants, and contracts, endowment income, sales and services, other

E&G expenditures instruction, research, public service, academic support, student services, institutional support, operation and maintenance of plant, scholarships and fellowships

Student Assistance Type scholarship, assistantship, traineeship or fellowship, number awarded, amount of award

**Student Demand for Programs and Services**

Demand for Instructional Services Measured by student credit hours, student contact hours, FTE, headcount enrollments by course level, by major

Demand for Student Services- Number of students housed, number of meals served per day, number of students served by placement, counseling, etc.

## Indicators

The data elements discussed in the previous section form the basis for developing indicators that can provide information about an institution's resources and that can monitor changes in its condition and operation. Frequently presented in the form of ratios, such indicators are quite useful in transforming data into information. When correlated and viewed over time, these indicators provide insight into areas of institutional strength and weakness. Because self-assessment emphasizes trend analysis, the authors recommend longitudinal studies of certain indicators. Typically, information for five years is most useful. This need for ongoing assessment information underscores how important it is to support the self-study process through an organizational structure such as the institutional research office.

A note of caution is in order regarding the interpretation of indicators. When making a diagnosis, institutional administrators should not view any one individual indicator in isolation; rather, it is a set or group of indicators that becomes most meaningful. The medical profession offers a useful analogy. When doctors seek a diagnosis, they look for a specific combination of symptoms. Institutional assessment is similar in that only a combination of factors allows one to accurately identify strengths and weaknesses in educational programs and services.

The proper use and interpretation of indicators can escape those executives searching for quick and easy information. Consider, for example, the indicator for acceptance rates. This indicator is based on the ratio of acceptances to the number of applicants. Properly understood, this indicator shows the drawing power of an institution and the selectivity an institution exercises in accepting students from its applicant pool. As such, this ratio serves as a measure of flexibility. It does not necessarily reflect institutional quality, as many are led to believe. As this ratio increases and the institution accepts a greater number of its applicants, the probability increases that the college will be affected by fluctuations in student markets. In other words, institutions that accept a high percentage of their applicants have less flexibility to increase enrollments or change their demographic mix should the number of applicants decrease.

Tenure status is another often misunderstood indicator. It is based on the following ratios:

$$\frac{\text{Number of full-time tenured faculty}}{\text{Total full-time tenure-track faculty}} \quad \text{and} \quad \frac{\text{Number of part-time tenured faculty}}{\text{Total part-time tenure-track faculty}}$$

This indicator can easily monitor institutional flexibility. Those colleges and universities that have a high proportion of tenured faculty may experience budget inflexibility when expenditures such as long-term salary contracts take an increased share of the budget. Institutions with a high proportion of tenured faculty may want to offset this inflexibility with higher levels of revenues from outside sources, such as endowment income. At some institutions, a high tenure ratio may suggest not merely budgetary inflexibility but a lack of vitality in instruction and research. Clearly, however, this may not be the case. Here again we are presented with further evidence that institutional indicators must be interpreted judiciously if they are to have any usefulness.

These two examples suggest the possible use and misuse of indicators in a self-study program. Given this cautionary note, a partial inventory of indicators may nonetheless be very helpful for those institutions embarking on a self-study program. Such a list can be found in the appendix. These indicators are organized in a fashion similar to the data elements enumerated previously and include indicators on institutional characteristics, resource status, and resource allocation.

### Judgments

The process of moving from data to knowledge raises a distinction central to the self-study process—that between measurement and evaluation. Data do not exist as an objective given, rather, they result from observation and measurement. They are preceded by judgments regarding what is important to measure and, in turn, are followed by judgments regarding what such measurements mean, i.e. knowledge. A systematic self-study program does not eliminate judgments, but uses them as the qualitative foundation (refer to figure 1).

Figure 1. Planning for the self-study

Preparation for self-study requires consensus on what data should be included in the assessment process. One technique for encouraging such consensus is to relate the possible data categories to a set of judgments that ultimately have to be made about the institution from the information gathered. Once the relevance of the judgments is determined, the self-study committee can decide which data elements are essential in making these judgments. By understanding how judgments enter into the formulation of a self-study program, an institution will be better prepared to interpret assessment results from a variety of perspectives and in view of the different interests held by various constituencies.

### Promoting Ongoing Self-Study

The transition from episodic attempts at self-study to an ongoing assessment program requires both the continuing availability of data and information and accessibility to them, an institutional research office can support self-study in both these respects. Because acquiring the data is often the most time-consuming aspect of a self-study, a database should be developed prior to the actual assessments. Data on an institution's finances and characteristics and on students and faculty should be kept current at all times. Consensus should be obtained regarding what data elements to include in the database. Tables 1 through 3 provide an inventory of some data elements often considered essential. These and other data considered pertinent by the institution should be used for all data requests processed by the institutional research office.

Acquiring data, however, means little if those conducting the self-study program do not have ready and easy access to this information. An institutional research office can encourage self-assessment by storing and retrieving information in suitable ways. Data can be stored either in a mainframe computer, minicomputer, or even on floppy disks to be used with a microcomputer. One of the easiest and fastest ways to manipulate data is through a microcomputer that can use data down-loaded from the mainframe or minicomputer. Electronic spreadsheets and graphics packages produced under various trade names can make the formatting and presentation of data much simpler.

Those researchers and administrators interested in an inexpensive and flexible computing system adapted to self-study needs may wish to consult Western Piedmont Community College (Office of Planning & Development) As part of a self-assessment program, this institution initially developed a system as part of a self-assessment program, that allows faculty and administrators to review regularly the institution's progress toward its educational objectives. The system is now used as part of a "perpetual" long-range planning process. (See Clark, 1982.)

Promoting a continuing self-assessment program relies largely on making the process inexpensive, flexible, and accessible. Microcomputers allow many people to gain access to data and provide them with an opportunity to interact and participate in the analytical process.

### Summary

If an institution desires to establish an effective self-study program, it must transform its periodic and discrete assessment activities into an ongoing, sustained effort. In doing so, an institution will come to understand assessment not as a burdensome responsibility but as an opportunity to initiate constructive change. The authors have suggested that readiness is the key ingredient in this effort. Appropriate information must be available for self-study programs, moreover, that information must be accessible. We have described how an institutional research office can support this effort, which data elements often are considered essential, the place of judgment and interpretation in the self-study process, and how support can be given to an ongoing program. Administrators and researchers should encourage broad and regular participation in self-study programs. Only then can assessment become a natural extension of an institution's self-awareness.

# APPENDIX

## Possible Indicators for an Institution

The indicators included in this appendix provide an inventory that institutions may find useful when conducting self-study programs. Not meant to be exhaustive, this listing presents both familiar items and those that may not immediately come to mind. Included are institutional descriptors, resource-status indicators, and resource-utilization measures

### I. Institutional Descriptors

| Indicators | Calculation |
|---|---|
| A. Acceptance Rate | Number of applicants accepted ÷ Number of applicants |
| B. Enrollment Rate | Number of acceptances enrolled ÷ Number of applicants accepted |
| C Sources of Entering Students | Number of in-state students enrolled ÷ Total number of students enrolled |
| D International Source of Entering Students | Number of foreign students enrolled ÷ Total number of students enrolled |
| E Programmatic Concentration | Percentage of degrees earned in three largest programs |

### II. Resource Status

| Indicators | Calculation |
|---|---|
| A Faculty | |
| 1 "Full-timeness" of Faculty | Number of full-time faculty ÷ FTE total faculty |
| 2 Tenure Status | Number of full-time tenured faculty ÷ Total full-time tenure-track faculty<br>and<br>Number of part-time tenured faculty ÷ Total part-time tenure-track faculty |
| 3 Faculty Development | Expenditures for sabbaticals and travel ÷ Expenditures for instruction |
| B Facilities Replacement/ Renovation Rate | Current replacement cost of plant ÷ Expenditures for renovation |
| C. Equipment Replacement Rate | Replacement cost of equipment ÷ Expenditures on equipment |
| D. Financial Resources | |
| 1 Short-term—Unrestricted Current Fund | Unrestricted current fund assets ÷ Unrestricted current fund liabilities |
| 2 Intermediate Term Available Funds | Unrestricted current fund balance plus quasiendowment market value ÷ Educational and general expenditures plus mandatory transfers (E&G + MT) |
| 3 Long-Term—Endowment | Endowment market value ÷ E&G + MT |
| 4 Debt Service to Revenue Ratio | Debt service due ÷ Current funds revenues |
| 5 Financial Dependency | Dollars from largest source of current funds revenues ÷ Total current funds revenues |
| 6 Student-Derived Revenue Trends | Net student revenue = Tuition and fees minus scholarships and fellowships from unrestricted funds revenues |
| E. Students | |
| 1 Ability | Average test scores of entering students or percentage of entering students from *X* percent of high school class |
| 2 Full-Time Enrollments | Number of full-time undergraduate students ÷ FTE undergraduate students |

### III. Resource-Utilization Measures

| Descriptor | Calculation |
|---|---|
| A. Student to Faculty Ratio | FTE students ÷ FTE faculty<br>or<br>Total number of student credit hours ÷ FTE faculty |
| B Instruction by Full-Time Faculty | Number of undergraduate student credit hours taught by full-time faculty ÷ Total number of undergraduate student credit hours |
| C Student-Services Support | Total student headcount ÷ FTE student service professional staff (e.g., counseling, placement) |
| D. Instructional Expenditures per FTE Student | Instructional expenditures ÷ Total FTE enrollment |
| E Student-Services Expenditures per Student | Student-services expenditures ÷ Total headcount enrollment |

### IV. Outcomes

| Descriptor | Calculation |
|---|---|
| A Retention | Number of returnees ÷ Number of potential degree-seeking returnees and non-degree-seeking returnees |
| B Degrees, Program Completers | Number of undergraduate students in an entering class who have completed program within one year after nominal length of program ÷ Number of students in entering class |
| C Students Seeking Additional Degrees within One Year of Receiving Degree | Number of undergraduate students from graduating cohort enrolled in advanced program within one year of receiving degree ÷ Number of students receiving degrees |

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*Authors' Note* *New Directions for Institutional Research*, No 29, (see Kells, 1981, and Troutt) and *New Directions for Higher Education*, No 37, (see Wilson, 1982) are devoted to the self-study process Both have much valuable technical information The ASHE-ERIC monograph by Marcus et al. and the AAHE-ERIC monograph by Harcleroad and Dickey look to self-studies to improve institutional quality. Other important topics are discussed by Edwards and Jacobson For institutional researchers interested in specific regional accreditation, references from the *North Central Association Quarterly* (Cohen, Dressel, 1971), the Middle States Association (Bowen), and the New England Association of Schools and Colleges (Hollander) are provided


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